Critical Release Notice

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The content of this customer NTP supports the SN06 (DMS) software release.

Bookmarks used in this NTP highlight the changes between the baseline NTP and the current release. The bookmarks provided are color-coded to identify release-specific content changes. NTP volumes that do not contain bookmarks indicate that the baseline NTP remains unchanged and is valid for the current release.

Bookmark Color Legend

Black: Applies to new or modified content for the baseline NTP that is valid through the current release.

Red: Applies to new or modified content for NA017 that is valid through the current release.

Blue: Applies to new or modified content for NA018 (SN05 DMS) that is valid through the current release.

Green: Applies to new or modified content for SN06 (DMS) that is valid through the current release.

Attention!
Adobe® Acrobat® Reader™ 5.0 is required to view bookmarks in color.

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Digital Switching Systems

SuperNode Data Manager Carrier

Alarm Conduit Application User Guide

SDMC0013 Standard 03.02 May 2000

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Digital Switching Systems

SuperNode Data Manager Carrier

Alarm Conduit Application User Guide

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Standard release version 02.02. This document contains information for the SDMC0012 software release. The following global changes were made to the document: TabNum1

- All references to SDMC were updated to current release SDMC12 as appropriate.
- All instances of UNIX were capitalized.
- All references to trunk alarms were changed to TRK alarms.
- Chapter 1, Pages 1-2, 1-6 and 1-7 were changed per review comments.
- Chapter 2, Pages 2-2 through 2–11 changed per FN 59010113 Swim 12 Install Enchancements.
- Chapter 2, Page 2-1 was changed per review comments.
- Chapter 3, Page 3-8 was changed per review comments.

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Standard release version 01.02. This document contains information for the SDMC0011 software release.

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Preliminary release version 01.01. This document contains information for the SDMC0011 software release.

Contents

About this document

This document describes the SuperNode Data Manager Carrier (SDMC) Alarm Conduit application, including procedures for installing and using the application. It is intended for SDMC system administrators and maintenance personnel.

Organization

The information in this document is arranged in the following chapters:

- Chapter 1, "Understanding the SDMC Alarm Conduit" describes the SDMC Alarm delivery system and provides an overview of the SDMC Alarm Conduit application.
- Chapter 2, "Getting Started" contains procedures for installing the SDMC Alarm Conduit application and the SDMC Base Maintenance API on the SDM.
- Chapter 3, "Using the SDMC Alarm Conduit" contains detailed procedures for using the SDMC Alarm Conduit snapshot utilities.

How to check the version and issue of this document

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

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

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

This document is written for all DMS Family offices. More than one version of this document may exist. To determine whether you have the latest version of this document and how documentation for your product is

organized, check the release information in *Product Documentation Directory*, 297-8991-001.

References in this document

The following documents are referred to in this document:

- *SDMC Event Record Manager User Guide*, 297-2667-220.
- *SuperNode Data Manager Enhanced Terminal Access User Guide*, 297-5051-904.
- *SDM Secure File Transfer User Guide*, 297-5051-913.
- *SuperNode Data Manager Fault-tolerant User Guide*, 297-5061-906.

How commands, parameters, and responses are represented

Commands, parameters, and responses in this document conform to the following conventions.

Input prompt (>)

An input prompt (>) indicates that the information that follows is a command:

>BSY

Commands and fixed parameters

Commands and fixed parameters that are entered at a MAP terminal are shown in uppercase letters:

>BSY CTRL

Variables

Variables are shown in lowercase letters:

>BSY CTRL ctrl_no

The letters or numbers that the variable represents must be entered. Each variable is explained in a list that follows the command string.

Responses

Responses correspond to the MAP display and are shown in a different type:

```
FP 3 Busy CTRL 0: Command request has been submitted.
FP 3 Busy CTRL 0: Command passed.
```

The following excerpt from a procedure shows the command syntax used in this document:

1 Manually busy the CTRL on the inactive plane by typing

>BSY CTRL ctrl_no
and pressing the Enter key.

where

ctrl_no is the number of the CTRL (0 or 1)

Example of a MAP response:

```
FP 3 Busy CTRL 0: Command request has been submitted.
FP 3 Busy CTRL 0: Command passed.
```

Chapter 1: Understanding the SDMC Alarm Conduit

The SuperNode Data Manager Carrier (SDMC) Alarm Conduit application acquires CCS (common channel signalling) and Trunk alarm information from the DMS switch and exports this information over a TCP/IP connection to an Operations Support System (OSS) data browser.

The SDMC Alarm Conduit also provides utilities that allow you to save the current state of alarms on the DMS switch in a *snapshot* file. A snapshot file contains alarm state information in CSV (comma separated value) format, which is compatible with other analysis tools (such as spreadsheet software tools).

Overview of the SDMC Alarm Delivery system

The SDMC Alarm Delivery system is comprised of software components running on the DMS computing module (CM), the SuperNode Data Manager (SDM), and the OSS, including the following (see Figure 1-1):

- CM-side Alarm Delivery component
- CM-side SDM Base Maintenance Application Programming Interface (API)
- SDM-side SDM Base Maintenance API
- SDMC Alarm Conduit
- Event Record Manager

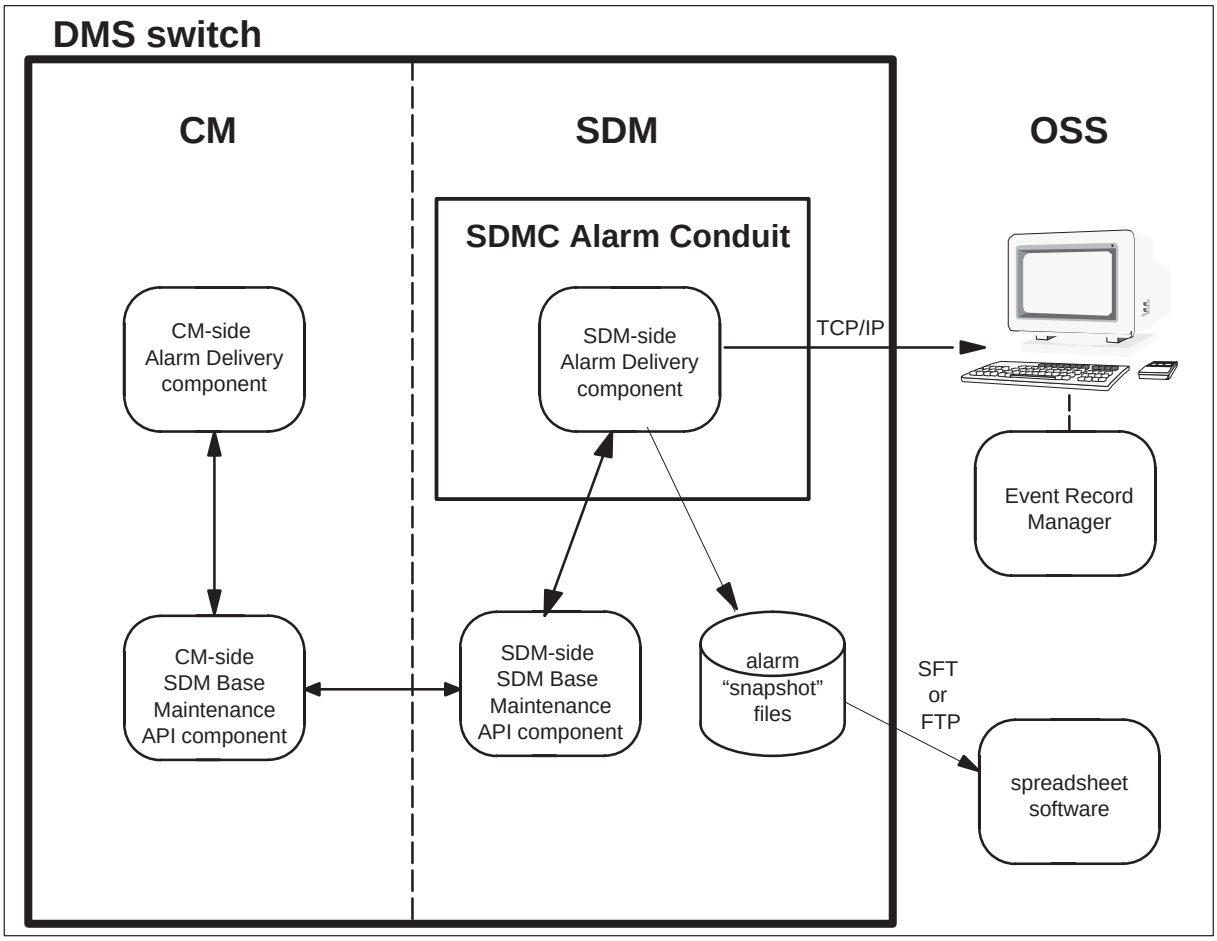
The CM-side Alarm Delivery component reports the alarms associated with the CCS and Trunk maintenance subsystems of the DMS switch to the CM-side SDM Base Maintenance API.

The CM-side SDM Base Maintenance API transports the alarm information to the SDM-side SDM Base Maintenance API.

The SDM-side SDM Base Maintenance API forwards the alarm information to the SDMC Alarm Conduit.

The SDMC Alarm Conduit exports the alarm information over a TCP/IP connection to an OSS data browser.

Figure 1-1
SDMC Alarm Delivery System components



CM-side Alarm Delivery component

The CM-side Alarm Delivery component notifies the CM-side SDM Maintenance API whenever an alarm is raised or cleared for the CCS and TRK subsystems. Any CCS or TRK alarm displayed at the MTC level of the DMS MAP is reported. The CM-side Alarm Delivery component also responds to query requests from the SDM.

The CM-side Alarm Delivery component checks to see if the CM-side of the SDM Maintenance API is active before performing any functionality. If the CM-side of the SDM Maintenance API is active, the CM-side Alarm Delivery component performs two main tasks. These tasks are query response and event notification.

Query response occurs when the SDM sends a query through the SDM Maintenance API. The CM-side Alarm Delivery component responds to queries from the SDM by collecting all current alarms associated with the CCS and TRK maintenance subsystems. For each alarm condition within each resource, a message is sent to the SDM Maintenance API.

When an alarm event occurs, the CM-side Alarm Delivery component notifies the SDM of the event. An alarm event can be either the generation of a new alarm, or the clearing of an existing alarm.

The message sent to the SDM contains the following information:

- System - This is the DMS subsystem to which the alarm belongs (CCS or TRK).
- Text - This is the text associated with the alarm. It is the same text that is displayed on the alarm banner at the MTC (maintenance) level of the DMS MAP (maintenance and adminstrative position). (for example, GC for Trunks).
- Severity - This is the severity of the alarm. It is either Critical, Major, Minor, or Nil.

  Note: Nil alarm severity indicates there is trouble, but it is below the threshold needed to attain Minor alarm severity.

- Entity - This is the name of the resource that generated the alarm. (for example, CLLI name for trunks).

CM-side SDM Base Maintenance API

The SDM Base Maintenance API provides a generic maintenance interface between the SDM and the DMS. It provides the infrastructure for SDM-based applications to interface with DMS maintenance entities.

The CM-side SDM Base Maintenance API enables SDM applications to receive notifications of state changes, query states, and request maintenance actions of CM-maintained components. It routes maintenance queries from the SDM applications to the DMS, routes query responses from the DMS to the requesting SDM application, and routes maintenance event notifications from the DMS to the SDM applications that requested the notification information.

The existing interface for DMS maintenance, the MAP, is a ASCII-based terminal interface. The CM-side SDM Base Maintenance API provides a machine-level interface to DMS maintenance which is required by OAM&P applications for service provisioning and network management.

SDM-side SDM Base Maintenance API

The SDM-side SDM Base Maintenance API provides a generic maintenance interface between the SDM and the CM. It provides the infrastructure for SDM applications to interface with DMS maintenance entities. The interface enables SDM applications to receive notifications of state changes, query states, and request maintenance actions of CM-maintained components.

This SDM-side SDM Base Maintenance API provides for the following:

- the delivery of asynchronous notification of state changes for maintenance entities from the CM to the SDM
- the ability for SDM applications to query for state information from maintenance entities on the CM
- the ability for SDM applications to request a maintenance action be taken on a maintenance entity on the CM

SDMC Alarm Conduit

The SDMC Alarm Conduit application acquires CCS and TRK alarm information sent from the DMS switch and exports this information over a TCP/IP connection to an OSS data browser.

When a TRK or CCS resource changes state, the CM sends a message to the SDM. Any CCS or TRK alarm displayed at the MTC level of the DMS MAP is reported. The SDMC Alarm Conduit application is responsible for receiving the alarm message and processing the alarm information. After the CCS or TRK alarm event notification is received, the SDMC Alarm Conduit application builds the alarm message and sends it to the OSS.

The SDMC Alarm Conduit has three main responsibilities which include the following:

- query
- receive alarm event notifications
- export alarm information to SDMC Event Record Manager

Querying is employed when initializing the SDMC Alarm Conduit. Querying is also employed when re-synchronizing the alarm states after communication loss between the CM and the SDM is restored. The SDMC Alarm Conduit stores the alarm state information for CCS and TRK on the SDM.

Alarm event notifications are received as alarm state changes occur. This includes state changes from one alarm level to another, or to a cleared state. When a TRK or CCS resource changes state, a message is sent from the CM

to the SDM. The SDMC Alarm Conduit is responsible for receiving the alarm message from the SDM Maintenance API and processing the alarm information.

After the CCS or TRK alarm event notification is received, the SDMC Alarm Conduit builds the alarm message and sends it to Event Record Manager for display.

Alarm timestamp

When the SDMC Alarm Conduit receives alarms from the CM, it accesses time using the UNIX time system call and appends this time to the alarm information. The time representation used is the native UNIX long integer (32 bits) representing the number of seconds expired since January 1, 1970. This timestamp is included in each of the alarm messages sent out to the OSS using the TCP/IP socket interface. Additionally, this time is transformed to a 27 character ASCII representation.

ATTENTION

The timestamp is translated to local switch time when the snapshot utility is executed and an alarm stored by the Alarm Conduit. The timestamp sent out to the OSS is in Universal Coordinated Time (UTC) and is not the same, as local time, not corrected for daylight savings time.

ATTENTION

Because the Alarm Conduit application generates the alarm timestamp, not the DMS CM, timestamp anomalies are possible. For example, an alarm is present on the switch, but the Alarm Conduit application is not running. When the Alarm Conduit application starts running, the alarm condition is noted and the Alarm Conduit application creates the timestamp. The alarm timestamp does not match the actual time when the switch generated the alarm; it matches the time when the SDM receives the alarm.

SDMC Alarm Conduit utilities

The SDMC Alarm Conduit application also provides utilities that allow you to save the current state of alarms in a *snapshot* file. A snapshot file contains alarm state information in CSV (comma separated value) format which is compatible with other analysis tools (such as spreadsheet software tools). Refer to Chapter 3 for more information about SDMC Alarm Conduit utilities.

You can transfer snapshot files from the SDM to the OSS using SFT or FTP. For more information, refer to the *SDM Secure File Transfer User Guide*.

SDMC Alarm Conduit utilities (snapshot file) directory

All files created on the SDM using SDMC Alarm Conduit utilities (snapshot files) are stored in the directory **/sdm/ac/snapshotfilesdir**.

Architecture

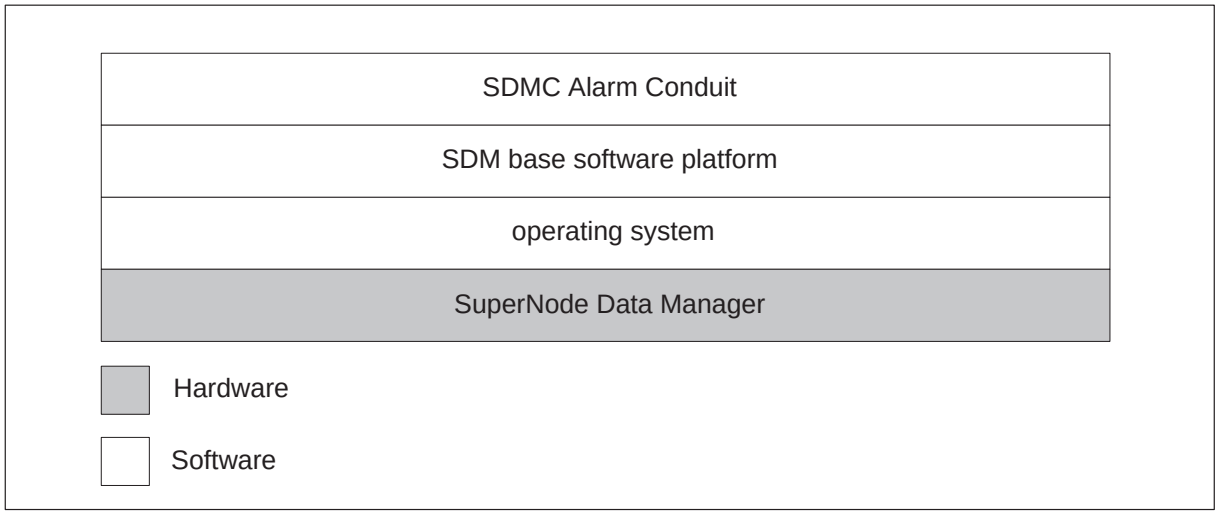
Hardware

The SDMC Alarm Delivery system has software components running on the CM and the SDM. Figure 1-1 illustrates the architectural view and interactions between the different components in the CM, SDM, and OSS.

Software

The SDM base software platform runs on the IBM AIX operating system. The SDMC Alarm Conduit runs on the SDM base software platform (refer to Figure 1-2).

Figure 1-2
Software overview



Restrictions and limitations

For the SDMC13 release, the SDMC Alarm Conduit application supports only TRK alarms and the following CCS alarms:

- routeset
- linkset
- link
- router

Chapter 2: Getting Started

This chapter describes how to install the SuperNode Data Manager Carrier (SDMC) Alarm Conduit application and the SDMC Base Maintenance API. It is assumed that the SDM platform and AIX operating system has already been installed on the SDM. It is also assumed that the correct DMS software load (CSP11 or above) has already been installed on the DMS switch.

The following tasks are described in this chapter:

Installing the SDMC Base Maintenance API on the SDM

Complete the following steps to install the SDMC13 Base Maintenance API on the SDM.

Procedure 2-1, Installing the SDMC Base Maintenance API

1 Insert the SDMC application software tape containing the SDMC Base Maintenance API fileset into the SDM tape drive.

2 Obtain the name of the SDMC Base Maintenance API fileset.

Note: For SDMC11, SDMC12 and SDMC13 the SDMC Base Maintenance API fileset name is Base Maintenance Interface.

3 To install the SDMC Base Maintenance API using the SDM local VT100 terminal console, proceed to step 4. To install the SDMC Base Maintenance API using a remote Unix workstation, login to the SDM by typing:

> telnet *ip_address*
and press the Enter key.

where

ip_address is the IP address of the SDM

The system prompts you for your SDM login and password.

Note: To install the SDMC13 Base Maintenance API using a remote Unix workstation, telnet must be enabled on the SDM.

4 Enter the SDM login and password for the root user.

5 Access the SDM Remote Maintenance Interface (RMI) by typing:

> sdmmtc
and press the Enter key. The SDM RMI will be displayed (an example is shown below).

```
    SDM        CON     LAN     APPL    SYS      HW     CM: 250U
     .          .       .       .       .        .     SDM: cpvey90a
                                                         Fault Tolerant

Top
 0 Quit
 2 Mtc
 3 Admin
 4
 5
 6
 7
 8
 9
10
11
12
13
14
15
16
17 Help
18 Refresh
  root
Time  19:05  >
```

6 Access the SWIM (software inventory manager) level by typing:

> swim
and press the Enter key.

Example response

```
 # Fileset Description           Version       Status
 1 Client Common Resources       11.0.22.0     APPLIED
 2 Log Delivery Service          11.0.22.0     APPLIED
 3 Platform Maintenance          11.0.22.0     APPLIED
 4 OM Access Service             11.0.22.0     APPLIED
 5 Table Access Service          11.0.22.0     APPLIED
 6 Enhanced Terminal Access      11.0.21.0     APPLIED
 7 Installation & Upgrade Tools  11.0.22.0     APPLIED
 8 Installation & Upgrade Lists  11.0.22.0     APPLIED
 9 OSS and Application Svcs      11.0.20.0     APPLIED
10 OSS Comms Svcs                11.0.20.0     APPLIED
11 ObjectStore Database Svc      11.0.20.0     APPLIED
12 Secure File Transfer          11.0.21.0     APPLIED
13 Exception Reporting           11.0.22.0     APPLIED
```

The SWIM level lists software installed on the SDM.

7 Access the Apply level by typing:

> apply
and press the Enter key.

Example response

```
Source device: directory '/home/swd/alc'.
# Fileset Description           Current       Available
1 Alarm Conduit                 11.0.49.0     13.0.49.0     i
```

Note: If necessary, use the **Up** and **Down** commands to scroll through the fileset list. In this example, the Apply level does not list the SDMC Base Maintenance Interface fileset because the SDM tape drive is not the default source device.

8 If the Apply level lists the SDMC Base Maintenance Interface fileset, proceed to step 11. If the Apply level does not list the SDMC Base Maintenance Interface fileset, change the source device by typing:

> source
and press the Enter key.

Example response

```
Specify the new source device:

To specify a directory on the SDM, enter the directory path.

To specify a tape drive:
   Enter 0 for the tape drive in the main chassis slot 2.
   Enter 1 for the tape drive in the main chassis slot 13.

To specify the default source device, press [Enter]. The default
is the directory '/home/swd/alc'.
```

9 Choose the tape drive where you have inserted the SDMC Base Maintenance Interface software tape by typing **0** for main chassis slot 2 or **1** for main chassis slot 13; then press the Enter key.

Example response

```
Do you want to set the default source device?

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

10 Type **Y** or **YES** and then press the Enter key. The Apply level displays a list of filesets available on the tape drive. Each fileset has a number which is used to select it.

Example response

```
# Fileset Description           Current       Available
1 Base Maintenance Interface    NA            11.0.43.0     i
```

Note: If necessary, use the **Up** and **Down** commands to scroll through the fileset list. In this example, the fileset number used to select the SDMC Base Maintenance Interface is 1.

11 Select the SDMC Base Maintenance Interface software by typing:

> select *number*

and press the Enter key.

where

number is the number listed beside the fileset on the Apply level

12 Apply the SDMC Base Maintenance Interface software by typing:

> apply
and press the Enter key.

Example response

```
Command in progress.
APPLYING fileset: 1
SDM_BMI.bmi 13.0.43.0

Command completed with no errors.

MORE...
```

13 Press the Enter key to continue.

14 Access the Application level and verify the installation by typing:

> appl
and press the Enter key.

Example response

```
 # Application                                State
 1 Log Delivery Service                       .
 2 OM Access Service                          .
 3 Table Access Service                       .
 4 Exception Reporting                        .
 5 ObjectStore Database Svc                   .
 6 OSS Comms Svcs                             .
 7 OSS and Application Svcs                   .
 8 Secure File Transfer                       .
 9 Enhanced Terminal Access                   .
10 Base Maintenance Interface                 .

                   Applications showing: 1 to 10 of 15
```

In this example, the Appl level lists the SDMC Base Maintenance Interface as package number 10. The "." value for the State column indicates that the application was automatically put in service (InSv).

Note 1: In this example, the message "Applications showing: 1 to 10 of 15" indicates only 10 of 15 applications are being displayed. To see the remaining applications, scroll through the list of applications using the **up** or **down** command.

15 Exit the SDM RMI by typing:

> quit all
and press the Enter key.

16 The procedure is complete.

Installing the SDMC Alarm Conduit application on the SDM

Complete the following steps to install the SDMC Alarm Conduit application on the SDM.

Procedure 2-2, Installing the SDMC Alarm Conduit

1 Insert the SDMC application software tape containing the SDMC Alarm Conduit application fileset into the SDM tape drive.

2 Obtain the name of the SDMC Alarm Conduit application fileset.

Note: For SDMC11, SDMC12 and SDMC13 the SDMC Alarm Conduit fileset name is Alarm Conduit.

3 To install the SDMC Alarm Conduit application using the SDM local VT100 terminal console, proceed to step 4. To install the SDMC Alarm Conduit application using a remote Unix workstation, login to the SDM by typing:

> telnet *ip_address*

and press the Enter key.

where

ip_address is the IP address of the SDM

The system prompts you for your SDM login and password.

Note: To install the SDMC Alarm Conduit application using a remote Unix workstation, telnet must be enabled on the SDM.

4 Enter the SDM login and password for the root user.

5 Access the SDM Remote Maintenance Interface (RMI) by typing:

> sdmmtc
and press the Enter key. The SDM RMI will be displayed (an example is shown below).

```
    SDM         CON      LAN      APPL     SYS       HW      CM: 250U
     .          .        .        .        .         .     SDM: cpvey90a
                                                              Fault Tolerant

Top
 0 Quit
 2 Mtc
 3 Admin
 4
 5
 6
 7
 8
 9
10
11
12
13
14
15
16
17 Help
18 Refresh
  root
Time  19:05  >
```

6 Access the SWIM (software inventory manager) level by typing:

> swim
and press the Enter key.

Example response

```
 # Fileset Description           Version       Status
 1 Client Common Resources       11.0.22.0     APPLIED
 2 Log Delivery Service          11.0.22.0     APPLIED
 3 Platform Maintenance          11.0.22.0     APPLIED
 4 OM Access Service             11.0.22.0     APPLIED
 5 Table Access Service          11.0.22.0     APPLIED
 6 Enhanced Terminal Access      11.0.21.0     APPLIED
 7 Installation & Upgrade Tools  11.0.22.0     APPLIED
 8 Installation & Upgrade Lists  11.0.22.0     APPLIED
 9 OSS and Application Svcs      11.0.20.0     APPLIED
10 OSS Comms Svcs                11.0.20.0     APPLIED
11 ObjectStore Database Svc      11.0.20.0     APPLIED
12 Secure File Transfer          11.0.21.0     APPLIED
13 Exception Reporting           11.0.22.0     APPLIED
14 Base Maintenance Interface    11.0.43.0     APPLIED
```

The SWIM level lists software installed on the SDM.

7 Access the Apply level by typing:

> apply
and press the Enter key.

Example response

```
Source device: directory '/home/swd/bmi'.
# Fileset Description           Current       Available
1 Alarm Conduit    NA            13.0.43.0     i
```

Note: If necessary, use the **Up** and **Down** commands to scroll through the fileset list. In this example, the Apply level does not list the SDMC Alarm Conduit fileset because the SDM tape drive is not the default source device.

8 If the Apply level lists the SDMC Alarm Conduit fileset, proceed to step 11. If the Apply level does not list the SDMC Alarm Conduit fileset, change the source device by typing:

> source
and press the Enter key.

Example response

```
Specify the new source device:

To specify a directory on the SDM, enter the directory path.

To specify a tape drive:
   Enter 0 for the tape drive in the main chassis slot 2.
   Enter 1 for the tape drive in the main chassis slot 13.

To specify the default source device, press [Enter]. The default
is the directory '/home/swd/alc'.
```

9 Choose the tape drive where you have inserted the SDMC Alarm Conduit application software tape by typing **0** for main chassis slot 2 or **1** for main chassis slot 13; then press the Enter key.

Example response

```
Do you want to set the default source device?

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

10 Type **Y** or **YES** and then press the Enter key. The Apply level displays a list of filesets available on the tape drive. Each fileset has a number which is used to select it.

Example response

```
# Fileset Description          Current       Available
1 Alarm Conduit                NA            11.0.49.0     i
```

Note: If necessary, use the **Up** and **Down** commands to scroll through the fileset list. In this example, the fileset number used to select the SDMC Alarm Conduit application is 1.

11 Select the SDMC Alarm Conduit application by typing:

> select *number*

and press the Enter key.

where

number is the number listed beside the fileset on the Apply level

12 Apply the SDMC Alarm Conduit application software by typing:

> apply
and press the Enter key.

Example response

```
Command in progress.
APPLYING fileset: 1
SDM_AC.ac 13.0.49.0

Command completed with no errors.

MORE...
```

13 Press the Enter key to continue.

14 Access the Application level and verify the installation by typing:

> appl
and press the Enter key.

Example response

```
 # Application                                  State
 1 Log Delivery Service                         .
 2 OM Access Service                            .
 3 Table Access Service                         .
 4 Exception Reporting                          .
 5 ObjectStore Database Svc                     .
 6 OSS Comms Svcs                               .
 7 OSS and Application Svcs                     .
 8 Secure File Transfer                         .
 9 Enhanced Terminal Access                     .
10 Base Maintenance Interface                   .
11 Alarm Conduit                                .

                    Applications showing: 1 to 11 of 15
```

In this example, the Appl level lists the SDMC Alarm Conduit application as package number 11. The "." value for the State column indicates that the application was automatically put in service (InSv).

Note 1: In this example, the message "Applications showing: 1 to 11 of 15" indicates only 11 of 15 applications are being displayed. To see the remaining applications, scroll through the list of applications using the **up** or **down** command.

15 Exit the SDM RMI by typing:

> quit all
and press the Enter key.

16 The procedure is complete.

Chapter 3: Using the SDMC Alarm Conduit

The SuperNode Data Manager Carrier (SDMC) Alarm Conduit application acquires CCS (common channel signalling) and Trunk alarm information from the DMS switch and exports this information over TCP/IP to an Operations Support System (OSS) data browser, such as Event Record Manager.

The SDMC Alarm Conduit also provides utilities that allow you to save the current state of alarms in a *snapshot* file. A snapshot file stores alarm state information in CSV (comma separated values) format which is compatible with other analysis tools (such as spreadsheet software tools).

The following tasks are described in this chapter:

SDMC Alarm Conduit Snapshot utility

The SDMC Alarm Conduit Snapshot utility provides a means to access the current CCS and Trunk alarms. The utility generates a snapshot file (a text file named “snapshot.txt”). The snapshot file is comprised of one line for

each alarm, with the alarm information placed in fixed length, comma separated fields.

The snapshot file includes the following fields for each alarm:

- system name – The system name is either Trunk or CCS.
- severity level – The severity level is either Minor, Major, Critical, or Nil.

  Note: Nil alarm severity indicates there is trouble, but it is below the threshold needed to attain Minor alarm severity.

- alarm text – Alarm text helps you determine what caused the alarm.
- entity text – The entity field identifies the alarmed entity.
- timestamp – The timestamp is created by the Alarm Conduit application and is given in local time for the SDM platform.

ATTENTION

The timestamp is given in local time for the SDM platform. The timestamp sent out to the OSS is in Universal Coordinated Time (UTC) and is not the same, generally, as local time.

ATTENTION

Because the Alarm Conduit application generates the alarm timestamp, not the DMS CM, timestamp anomalies are possible. For example, an alarm is present on the switch, but the Alarm Conduit application is not running. When the Alarm Conduit application starts running, the alarm condition is noted and the Alarm Conduit application creates the timestamp. The alarm timestamp does not match the actual time when the switch generated the alarm; it matches the time when the SDM receives the alarm.

Example alarm lines from a snapshot file are shown below.

```
Trunk,Critical,GC    ,EDRAM0                ,Fri Feb 19 08:36:16 1999
CCS  ,Major   ,LKM   ,AMERILK               ,Fri Feb 19 08:38:05 1999
Trunk,Critical,GC    ,TTT                   ,Tue Mar  9 16:13:45 1999
```

Start SDM session

Complete Procedure 3-1, “Start SDM session” to start an SDM session.

ATTENTION

It is recommended that you access the SDM using Enhanced Terminal Access. Refer to the *SuperNode Data Manager Enhanced Terminal Access User Guide* for information for accessing the SDM using Enhanced Terminal Access.

ATTENTION

To use the SDMC Alarm Conduit Snapshot utility, it is recommended that you login as the maint (maintenance) user on the SDM.

Procedure 3-1, Start SDM session

At the workstation UNIX prompt

1 Login to the SDM as the maintenance user. The SDM session appears as shown in Figure 3-1.

Figure 3-1
Example SDM session

```
************************************************************
**                                                        **
**             This is a private database.                **
**        All activity is subject to monitoring.          **
**   Any UNAUTHORIZED access or use is PROHIBITED.        **
**                                                        **
************************************************************
Last unsuccessful login: date on device from ip address
Last login:  date on device from ip address

There are number local logins.
There are number ETA logins to the SDM.
There are number ETA logins to the CM.

Current SDM status:
SDM    CON    LAN    APPL   SYS    HW
ISTb    .      .     ISTb   ISTb   .
 M                     M

maint:
```

2 The procedure is complete.

Save current alarm state information

Complete Procedure 3-2, “Save current alarm state information” to save the current alarm state information in the snapshot file.

WARNING

Existing snapshot file will be replaced

If the file “snapshot.txt” already exists on the SDM hard disk, completing this procedure will cause the old file to be overwritten, destroying its data. If you want to save the data in an existing snapshot file, you must copy the existing snapshot file to a new file before completing this procedure. If necessary, refer to Procedure 3-3, “Copy an existing snapshot file” before completing this procedure.

Procedure 3-2, Save current alarm state information

At the SDM prompt (shown in Figure 3-1)

1 Type

>snapshot

and press the Enter key to save the current alarm state information to the file “snapshot.txt”. The SDM will display the following:

```
Taking 'snapshot' of stored alarms

SOCKET call successful
CONNECT call successful
   now connected to Alarm Conduit socket

Sending FILE_WRITE_REQUEST_MSG

Snapshot request accepted

maint:
```

2 The procedure is complete.

Copy an existing snapshot file

Complete Procedure 3-3, “Copy an existing snapshot file” to copy the existing snapshot file (snapshot.txt) to a new file.

Procedure 3-3, Copy an existing snapshot file

At the SDM prompt (shown in Figure 3-1)

1 Type

>cacf *source_file new_file*

and press the Enter key.

where

source_file is the simple filename of the file to copy
new_file is the simple filename of the file to copy to

Note: A simple filename does not contain the complete pathname of the file.

The SDM will display SDM the prompt.

2 The procedure is complete.

View contents of an existing snapshot file

Complete Procedure 3-4, “View contents of an existing snapshot file” to view the contents of an existing snapshot file.

Procedure 3-4, View contents of an existing snapshot file

At the SDM prompt (shown in Figure 3-1)

1 Type

>vacf *source_file*

and press the Enter key.

where

source_file is the simple filename of the file to view

Note: A simple filename does not contain the complete pathname of the file.

The SDM will display the contents of the file (an example response is shown below).

```
Trunk,Critical,GC    ,TTT                    ,Tue Mar  9 16:13:45 1999

. . .

snapshot.txt: END

maint:
```

2 You can scroll forward through the file until you reach the end. To scroll one line at a time, press the Enter key. To scroll one page at a time, press the Space bar.

3 The procedure is complete.

Search for text string in snapshot file

Complete Procedure 3-5, “Search for text string in snapshot file” to search for a text string in an existing snapshot file.

Note: If the text string is broken up by white spaces, the string must be enclosed by double quotes.

Procedure 3-5, Search for text string in a snapshot file

At the SDM prompt (shown in Figure 3-1)

1 Type

>gacf *text_string source_file*

and press the Enter key.

where

text_string is the string of text to search for
source_file is the simple filename of the file to search in

Note: A simple filename does not contain the complete pathname of the file.

The SDM will display the lines matching the search string in the source file (an example response is shown below).

```
Trunk,Critical,GC    ,TTT                    ,Tue Mar  9 16:13:45 1999

. . .

snapshot.txt: END

maint:
```

2 The procedure is complete.

List all snapshot files on the SDM

Complete Procedure 3-6, “List snapshot files on the SDM” to list all snapshot files on the SDM.

Procedure 3-6, List snapshot files on the SDM

At the SDM prompt (shown in Figure 3-1)

1 Type

>lsacf

and press the Enter key. The SDM will display all snapshot files on the SDM (an example response is shown below).

```
snapshot.txt    090499ac.txt  090599ac.txt
maint:
```

2 The procedure is complete.

FTP snapshot file

To move an alarm conduit snapshot file to another machine using FTP, the following information is required:

- name of the snapshot file
- IP address of the FTP host
- valid user ID and password on the FTP host

Complete Procedure 3-7, “FTP snapshot file” to FTP a snapshot file to another machine.

Procedure 3-7, FTP snapshot file

At the SDM prompt (shown in Figure 3-1)

1 Type

>ftpacf *ip_address*

and press the Enter key to start the FTP session.

where

ip_address is the IP address of the FTP host.

The system prompts you for your login and password.

2 Enter your login and password of the destination host.

The SDM will display the following:

```
rftp>
```

3 Type

>bin

and press the Enter key to change the transfer mode to binary.

4 If it is necessary to change the desired target directory, type

>cd *path_name*

and press the Enter key.

where

path_name is the desired target directory on the destination host

5 Type

>put *source_file*

and press the Enter key to copy the snapshot file to the destination host.

where

source_file is the simple filename of the file to FTP.

Note: A simple filename does not contain the complete pathname of the file.

The SDM will display the following (an example response is shown below):

```
200 PORT command successful.
150 Opening ASCII mode data connection for filename.
226 Transfer complete.
number bytes sent in time (bytes/s)
rftp>
```

6 Type

>quit

and press the Enter key to exit the FTP session. The SDM will display SDM the prompt.

7 The procedure is complete.

Remove a snapshot file from the SDM

Complete Procedure 3-8, “Remove a snapshot file from SDM” to remove a snapshot file from the SDM.

Procedure 3-8, Remove snapshot file from SDM

At the SDM prompt (shown in Figure 3-1)

1 Type

>racf *file*

and press the Enter key.

where

file is the simple filename of the file to remove

Note: A simple filename does not contain the complete pathname of the file.

The SDM will display the prompt.

2 The procedure is complete.

Purge all snapshot files from the SDM

To purge all snapshot files from the SDM, including the file “snapshot.txt’, Complete Procedure 3-9, “Purge snapshot files from SDM”.

Procedure 3-9, Purge snapshot files from SDM

At the SDM prompt (shown in Figure 3-1)

1 Type

>pgacf

and press the Enter key to purge all snapshot files from the SDM. The SDM will display the prompt.

2 The procedure is complete.

Access on-line help

Complete Procedure 3-10, “Access on-line help” to access on-line help information.

Procedure 3-10, Access on-line help

At the SDM prompt (shown in Figure 3-1)

1 Type

>help *command*

and press the Enter key.

where

command is the name of the command (help topic).

Alarm conduit commands include **snapshot**, **cacf**, **vacf**, **lsacf**, **racf**, **pgacf**, **gacf**, and **ftpacf**.

The SDM will display the help text.

2 After viewing the help text, press the Enter key.

3 The procedure is complete.

End the SDM session

Complete Procedure 3-11, “End SDM session” to end the SDM session.

Procedure 3-11, End SDM session

At the SDM prompt (shown in Figure 3-1)

1 To end the SDM session, type **Exit** and press the Enter key.

2 The procedure is complete.

List of terms

API

Application Programming Interface

BMI

Base Maintenance Interface

CCS

Common Channel Signalling

CM

Computing Module

CSV

Comma Separated Values

DMS

Digital Multiplex System

ETA

Enhanced Terminal Access

FTP

File Transfer Protocol

GUI

Graphical User Interface

MAP

Maintenance and Administration Position

MTC

Maintenance

OAM&P

Operation, Administration, Maintenance, and Provisioning

OSS

Operations Support System

RMI

Remote Maintenance Interface

SDM

SuperNode Data Manager

SDMC

SuperNode Data Manager Carrier

SFT

Secure File Transfer

TCP/IP

Transmission Control Protocol/Internet Protocol

UCS

Universal Carrier Switch

UTC

Universal Coordinated Time

Digital Switching Systems

SuperNode Data Manager Carrier

Alarm Conduit Application User Guide

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