Open IVR

CCIP

User Guide

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Issue 1.0, Standard. This is the first standard issue of the *CCIP User Guide*.

Table of contents

About this guide

This section provides general information about this guide and the information it contains.

Who should use this guide

This guide is written for installers and administrators of the Call Center Integration Package (CCIP), as well as for application developers who are developing and administering CCIP applications.

The guide assumes that you are familiar with the Nortel Meridian 1 and Meridian Link products and the UNIX operating system and that you have a knowledge of telecommunications. It assumes that application developers have experience creating applications with Open Interactive Voice Response (IVR).

How to use this guide

This guide contains the following chapters and appendixes:

Chapter 1: Overview

Provides you with an overview of the functions and features of CCIP.

Chapter 2: Planning and engineering

Provides you with information about the requirements of CCIP.

Chapter 3: Installation and configuration

Describes how to install and configure CCIP.

Chapter 4: System administration

Explains how to perform administration tasks, including starting and stopping the server; viewing the logs, statistics, and status information; and customizing preferences.

Chapter 5: Application development

Describes the CCIP user functions and explains how to use them to develop applications.

Appendix A: Troubleshooting

Provides troubleshooting procedures, describes troubleshooting tools, and lists CCIP error messages.

Appendix B: Tables and files

Lists and describes the tables used by CCIP.

Appendix C: The CCIP initialization file

Describes the format of ccip.ini, the file that stores the CCIP configuration information.

Appendix D: CCIP processes

Lists the processes used by CCIP.

Appendix E: DN and agent types

Lists DN and agent types supported by Meridian Link.

Appendix F: Meridian 1 switch configuration

Describes the Meridian 1 switch configurations required by CCIP.

Appendix G: Localization

Provides instructions for localizing CCIP for different languages.

Related documentation

You may find the following documentation useful while reading this guide:

Application Equipment Module Installation Guide	NTP553-3201-200
Meridian 1 Software input/output guide	P0842663
Meridian Link Release 5.0/Customer Controlled Routing Installation and Upgrade Guide	NTP553-3202-210
Nortel IVR Generator Application Development Guide	NT3R06AA P0813809
Nortel IVR Installation and Maintenance Guide	NT6R92AA
Nortel IVR Generator Service Console Interface Reference Manual	NT3R05AA P0813838
Nortel IVR Generator System Administration Guide	NT3R05AA P0813837
Nortel IVR Planning and Engineering Guide	P0866685
Nortel IVR Product Overview Guide	P0869326

Conventions used in this guide

Throughout this guide, several typographic conventions are used to highlight particular types of information.

- Commands you must type are shown in bold; for example, type **sam** at the prompt.
- Variables that you must replace with valid values are shown in italic; for example, *nnnn*. You would replace this value with a directory number (DN).
- Keynames are enclosed in angle brackets, for example, the <Enter> key.

Chapter 1: Overview

The Call Center Integration Package (CCIP) is a feature of Open Interactive Voice Response (IVR) that integrates Open IVR with Meridian Link on the Meridian 1 Private Branch Exchange (PBX). CCIP adds the following functionality to Open IVR:

- It performs a digital login of IVR agents configured as Automatic Call Distribution (ACD) positions through Meridian Link messaging.
- It transfers and conferences calls through Meridian Link messaging. A fast one-step transfer function takes advantage of Meridian Link's fast transfer feature.
- It provides caller information, such as Calling Line Identification (CLID), Dialed Number Identification Service (DNIS), Call ID, and Hold In Queue with IVR treatment variable, to Open IVR.
- It provides a facility to extract data from a call-offered to a predefined agent set.
- It provides debug and support facilities to trace messages.
- It provides an administration interface that is accessible both locally and remotely by modem.

CCIP configuration

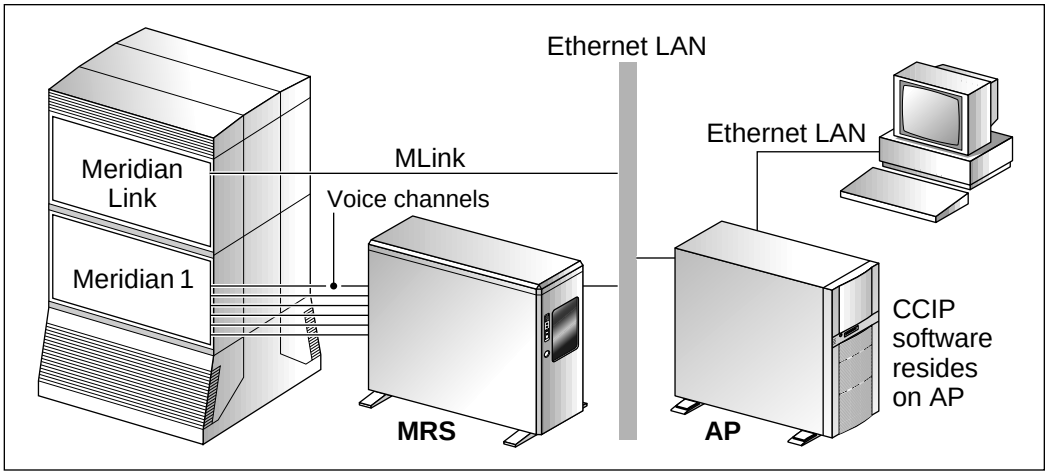
To use CCIP, you must have both Open IVR and Meridian Link release 5 installed on your Meridian 1 PBX (release 22).

Open IVR consists of two components, the Application Processor (AP) and the Multimedia Resource Server (MRS). These components may run on separate processors, or they may run on the same processor. The CCIP software runs on either an MRS/AP or a standalone AP.

The AP and Meridian Link are physically connected by an Ethernet LAN, and they communicate using the proprietary Meridian Link (MLINK) message set over Transmission Control Protocol/Internet Protocol (TCP/IP).

Figure 1-1 shows how CCIP is configured in an environment where the AP and MRS run on separate processors.

Figure 1-1:
CCIP configuration



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CCIP also supports token ring. In a token-ring environments the AP has an Ethernet connection to Meridian Link, and a token-ring connection to the customer LAN.

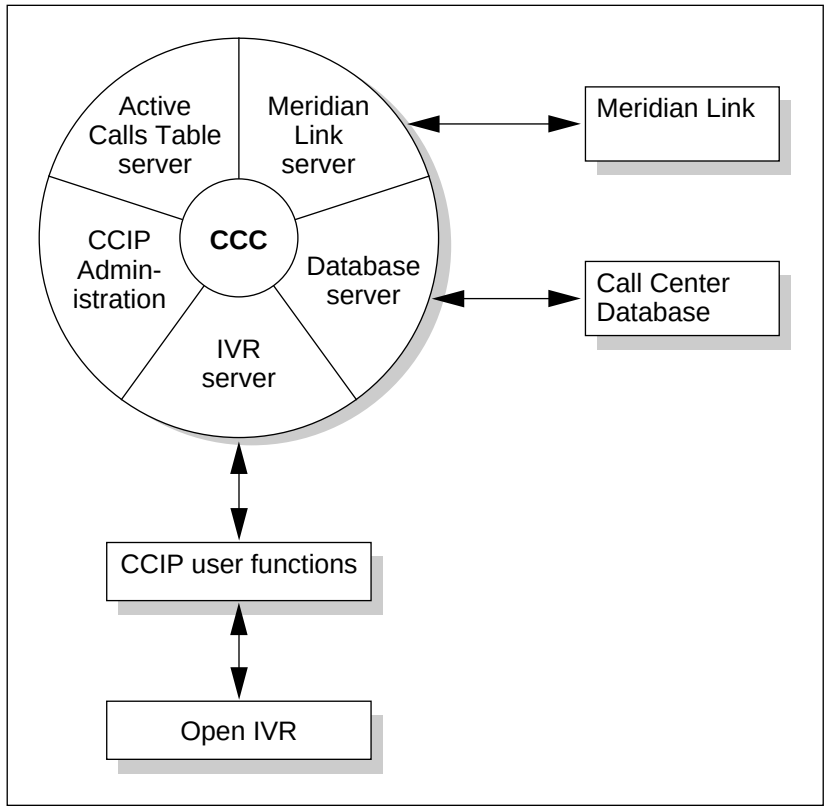
CCIP components

CCIP comprises the following servers:

- Call Center Controller (CCC)
- Meridian Link server
- IVR server
- Database server
- Active Calls Table (ACT) server

Figure 1-2 shows these servers and how they interact. They are described in the following sections.

Figure 1-2:
CCIP components



Call Center Controller

The Call Center Controller (CCC) manages all aspects of the CCIP environment. It initializes the other CCIP servers and coordinates the execution of requests from the servers.

Meridian Link server

The Meridian Link server acts as an interface between the Meridian Link module and the other CCIP servers.

IVR server

The IVR server is the interface between the Open IVR application and the other CCIP servers.

Database server

The Database server processes database requests from each of the CCIP servers. It maintains history, log, and configuration information in the following tables and files.

IVR/Agent DN tables

These tables list all directory numbers (DNs) to be monitored by the Meridian Link server. This table is stored in the ccip.ini file, and you can update it with the CCIP administration utility. For more information about ccip.ini, refer to Appendix C, “The CCIP initialization file.”

CCIP Configuration file

This file (ccip.ini) contains configuration and location information for the CCIP servers. You can update it with the CCIP administration utility. For more information about ccip.ini, refer to Appendix C, “The CCIP initialization file.”

CCIP ACT History file

This file contains a history of call information recorded by the Active Calls Table. Each call event is recorded in this file, which you can view with the CCIP administration utility. For more information about this file, refer to Appendix B, “Tables and files.”

CCIP ACT Summary file

This file contains an hourly summary of call information recorded by the Active Calls Table. You can view this file with the CCIP administration utility. For more information about this file, refer to Appendix B, “Tables and files.”

CCIP Error Log file

This file contains all CCIP system errors, as well as trace messages for any servers for which tracing is enabled. (By default, tracing is disabled. You might want to enable tracing during troubleshooting. To do so, refer to “CCIP Error and Event Log” on page A-7.)

All entries written to this file include a date, a time stamp, and an error number. Each server has a range of error numbers that it generates, so by looking at the error number, you can identify the server that generated the error.

You can view this file with the CCIP administration utility. For more information about error messages, refer to “Error Messages” on page A-10.

Active Calls Table server

The Active Calls Table (ACT) server manages information on all active calls monitored by the Meridian Link server. It retains a running history of all events in the CCIP ACT History file and a summary of activity for each hour in the CCIP ACT Summary file.

User Functions

The user functions are the interface between the IVR application and the IVR server. CCIP uses these functions to request caller information from the IVR application and to perform transfers and conferences. For more information about these functions and how to use them, refer to Chapter 5, “Application development.”

CCIP Administration

CCIP provides an administration utility that runs in both X-Windows and text-based environments. The utility is accessible both locally and remotely (over a modem).

With this utility, you can perform the following tasks:

- Start and stop CCIP
- Configure CCIP (Configuration changes do not take effect until you restart CCIP.)
- Register and de-register IVR and Agent DNs (Registrations and de-registrations do not take effect until you restart CCIP.)
- View the CCIP log files
- Enable tracing for one or more of the CCIP servers

Chapter 2: Planning and engineering

This chapter describes the hardware and software requirements of the Call Center Integration Package (CCIP); it describes the memory and disk requirements for CCIP; it explains how to use CCIP in an environment with multiple APs; and it explains how to use CCIP with an existing token-ring customer LAN.

> ***Note:*** You should also be familiar with the planning and engineering guidelines for Open Interactive Voice Response (IVR). For more information, refer to the *Nortel IVR Planning and Engineering Guide.*

Hardware and software requirements

To install CCIP you must have the following hardware and software:

- Meridian 1 Private Branch Exchange (PBX) Release 22 or higher
- Open Interactive Voice Response (IVR) Release 2 or higher

  Follow the instructions in the documentation to install the Application Processor (AP) or Multimedia Resource Server (MRS)/AP and the Open IVR software.
- Meridian Link Release 5 or higher with the TCP/IP Option, Option 97, and Option 98

  Follow the instructions in the documentation to install the Application Module (AM) or Intelligent Peripheral Equipment (IPE) Module and the Meridian Link software. Ensure that Meridian Link is communicating with the Open IVR AP using TCP/IP and that the AP and Meridian Link are on the same Ethernet LAN. (That is, there should be no LAN bridges or gateways between them.)

  For Customer Controlled Routing (CCR) interworking, ensure that you have Meridian Link/CCR Co-Residency Release 6.02 or higher.

- CCIP version 1.0 software

If you have a token-ring customer LAN, you also need the following:

- Token-Ring option for Meridian Link
- ZNYX ZX13 Ethernet card (PN A0638565)
- ZNYX PCI Ethernet driver (PN NT3R4703/A0646819)
- a DOS boot diskette

ATTENTION

If you are using an MRS/AP, and you are using both the Uninterruptible Power Supply (UPS) and Fax options of Open IVR, you cannot use CCIP with a token-ring LAN.

Memory requirements

CCIP requires 5.3 Mbyte of memory, plus 20 kbyte for every IVR channel it monitors, and 10 kbyte for every agent it monitors. For example, if you have 24 IVR channels and 200 agents, you would need:

5.3 Mbyte + (*number of channels* * 20 kbyte) + (*number of agents* * 10 kbyte)
= 5.3 Mbyte + (24 * 20 kbyte) + (200 * 10 kbyte)
= 7.78 Mbyte

Note: This calculation includes memory required by the CCIP user functions only. If you use other user functions, they may require additional memory.

Disk requirements

CCIP requires disk space on two file systems. On the /root file system, it requires 6 Mbyte of disk space. On the /u file system, it requires 14 Mbyte of disk space, plus space for log files. By default, the log files require 610 kbyte of disk space, but you can configure them to use up to 12.3 Mbyte.

CCIP maintains three log files, the Error and Event Log, the ACT History file, and the ACT Summary file. You can configure the maximum amount of space used by each of these files. (For more detailed information about these files, refer to Appendix B, “Tables and files.”)

CCIP Error and Event Log

CCIP logs error and trace messages to a log file. After a configurable period of time (default 24 hours), or when the file reaches a configurable size (default 300 kbyte)—whichever comes first—CCIP makes a backup copy of the file and clears it, to begin collecting messages again. If you are using the default parameters, you need 600 kbyte of disk space for the log files—300 kbyte for the Error Log and 300 kbyte for the backup file.

You can increase the maximum size to 3 Mbyte. (For instructions, refer to “DATAS” on page C-8.) If you do, you need 6 Mbyte of disk space for the log files.

You can also control the amount of information written to the log by setting the trace level. For instructions, refer to “CCIP Error and Event Log” on page A-7. The trace level determines how quickly the file reaches its maximum size.

CCIP ACT History file

CCIP logs each event to the ACT History File. After a configurable period of time (default 4 hours), or when the file reaches a configurable size (default 300 kbyte)—whichever comes first—CCIP makes a backup copy of the file and clears it, to begin collecting statistics again. If you are using the default parameters, you need 600 kbyte of disk space for the log files—300 kbyte for the ACT History file and 300 kbyte for the backup file.

You can increase the maximum size to 3 Mbyte. If you do, you need 6 Mbyte of disk space for the history files.

To change these parameters, refer to “Customizing CCIP preferences” on page 4-12 and “ACTS” on page C-15.

CCIP ACT Summary file

Every hour, CCIP logs call summary information. After a configurable period (default 1 day), CCIP makes a backup copy of the file and clears it, to begin collecting statistics again. If you are using the default parameters, the file will contain 24 lines; you need less than 10 kbyte for both the ACT Summary file and its backup file.

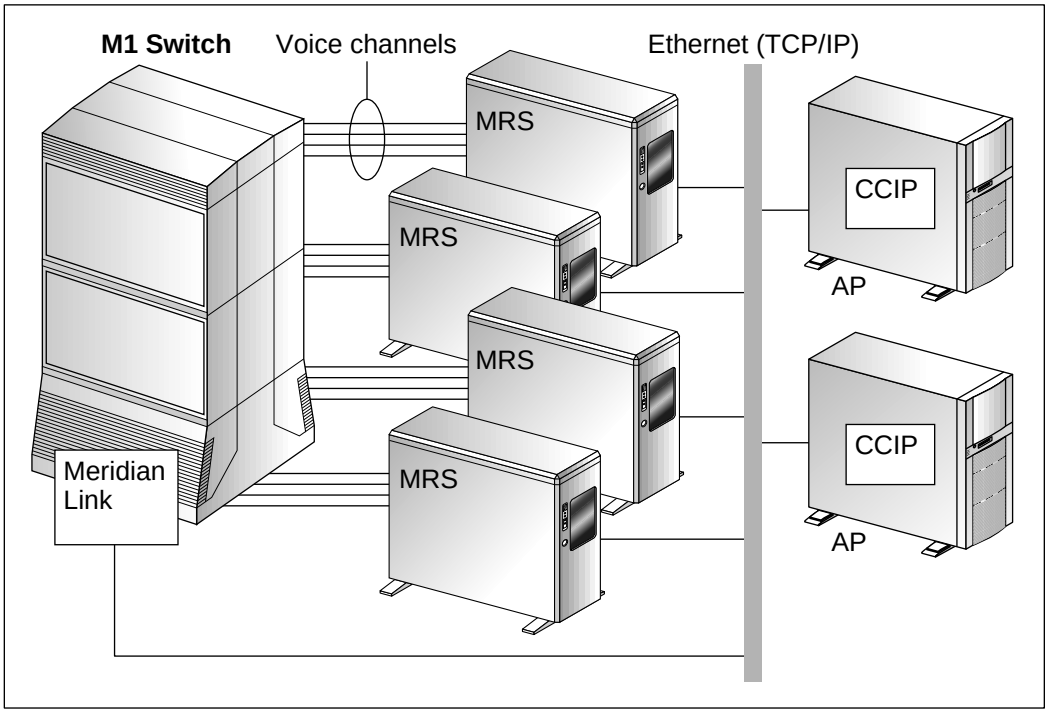
You can set the collection period to 30 days. If you do, you need about 300 kbyte of disk space for the summary files.

To change these parameters, refer to “Customizing CCIP preferences” on page 4-12 and “ACTS” on page C-15.

Using CCIP with multiple APs

CCIP monitors all agents, but it is configured to monitor only those IVR DNs that are located on the Application Processor (AP) on which it is installed. (Each agent DN can be monitored by multiple copies of CCIP.) If you have multiple APs, to ensure that incoming calls on both APs are processed by your customized call center applications, install a separate copy of CCIP on each one (as illustrated in Figure 2-1).

Figure 2-1:
CCIP with multiple APs



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Each copy of CCIP must have a unique Meridian Link application ID, to identify it to Meridian Link. You must configure and administer each copy of CCIP separately.

Using CCIP with an existing token-ring LAN

If you have a token-ring LAN, you must install an Ethernet card in the AP or MRS/AP, to allow it to communicate with Meridian Link. Installing an Ethernet card involves the following tasks:

1 installing and configuring the ZNYX ZX312 Ethernet card

2 installing the network card driver software

3 configuring the network driver

This section explains how to perform these tasks.

> ***Note:*** Before you begin, make sure that you have your System Configuration Utility diskette.

Configuring and installing the Ethernet card

To configure and install the ZNYX ZX312 Ethernet card, follow this procedure.

Procedure 2-1
Installing and configuring the Ethernet card

1 Log into the AP as root.

2 Shut down the AP by entering

shutdown -y -g0

3 Install the card in a PCI slot.

4 Insert a DOS boot diskette into a diskette drive, and boot the AP in DOS.

5 Ensure that the System Configuration Utility diskette is not write-protected, and insert it into a diskette drive.

6 Make drive A the current drive by entering

A:

7 Start the System Configuration Utility by entering

scu

The greeting screen appears.

8 Press <Enter>.

The following warning appears:

If you add, move or remove boards manually, verify the resource settings of these adapters and any adapters that are not locked before saving your configuration.

9 Press <Enter>.

The program initializes and the System Configuration Utility menu appears.

10 Select Change Configuration Settings.

Further initialization occurs. If you are prompted to change the password, press <Esc>. Then, the following message appears:

Virtual memory files will be stored in diskette.

11 Press <Enter>.

Further initialization occurs. Then, the Change Configuration Settings menu appears.

12 Select System Board and press <Enter>.

13 If you do not have the UPS option installed on the AP or MRS/AP, select Serial Port 1 Configuration. Then select Port 1 Disable.

14 If you have the UPS option installed, select On-board IDE Controller. Then, select Disable.

15 Press <Esc> to return to the Change Configuration Settings menu.

16 Select PCI Ethernet Device.

The device is configured as Enabled: Current Configuration.

17 Press <Enter>.

18 From the popup menu, select Enabled: Manual Configuration and press <Enter>.

19 Press <F6>.

20 Press <+> and <-> to set the IRQ. If you do not have the UPS option installed, set the IRQ to 4; if you have it installed, set the IRQ to 14.

21 Press <Esc> until the System Configuration Utility menu appears (three times).

22 Select Save Configuration and press <Enter>.

When the program finishes processing, the Save Configuration menu item is highlighted.

23 Select Exit and press <Enter>.

The Confirm Exit window appears.

24 Press <Enter>.

25 Remove the diskette from the diskette drive.

26 Power down and restart the system.

Installing the network card driver software

After installing the network card, you must install the network card driver software. To do so, follow this procedure.

Procedure 2-2
Installing the network card driver software

1 Log in to the AP or MRS/AP as root.

2 At the UNIX prompt, enter the following command:

custom

3 Select Install and press <Enter>.

4 Select A New Product and press <Enter>.

5 Select Entire Product and press <Enter>.

6 Insert the ZYNX PCI Ethernet Driver diskette into a diskette drive and press <Enter>.

The program installs the software.

7 Select Quit and press <Enter>.

The command prompt appears.

Configuring the network card driver software

After installing the network card driver software, you must configure it. Follow this procedure.

Procedure 2-3
Configuring the network card driver software

1 At the command prompt, enter the following command:

netconfig

The Available options menu appears.

2 Select 1 and press <Enter>.

The following prompt appears:

Select top level of chain to add or q to quit :

3 Select 1 and press <Enter>.

The following prompt appears:

Select next level of chain to add or q to quit :

4 Select 21 (ZNYX ZX312 PCI EtherAction, board 0) and press <Enter>.

The following prompt appears:

Add chain SCO_TCP-> ZP20 (y/n) =

5 Type **y** and press <Enter>.

The following prompt appears:

Enter PCI Bus Number [0] :

6 Press <Enter> to use the default value.

The following prompt appears:

Enter PCI Device Number [0] :

7 Press <Enter> to use the default value.

The following prompt appears:

Enter Interrupt Channel:

8 If you do not have the UPS option installed, type **4**; if you have it installed, type **14**. Press <Enter>.

The following prompt appears:

Enter Network Media Type [1] :

9 Press <Enter> to use the default value.

The following prompt appears:

Enter the internet address of this interface:

10 Enter the IP address of the AP.

The following prompt appears:

Enter the netmask for this interface:

11 Press <Enter> to use the default value.

The following prompt appears:

Does this interface use a broadcast address of all 1's? (y/n) (default y)

12 Press <Enter> to use the default value.

The following prompt appears:

Enter the broadcast address for this interface:

13 Press <Enter> to use the default value.

The values for Interface Address, Netmask and Broadcast address are displayed, and the following prompt appears:

Are these values correct? (y/n):

14 Type **y** and press <Enter>.

The following prompt appears:

Enter local host name or enter q to quit :

15 Enter the name of your AP.

The following prompt appears:

Do you intend that this machine be used as a network gateway? Configure gateway? (y/n)

16 Type **y** and press <Enter>.

The following prompt appears:

32 Pseudo ttys are currently configured.

17 Select q and press <Enter>.

The following prompt appears:

256 TCP connection currently configured.

18 Select q and press <Enter>.

The Available options menu appears.

19 Select q and press <Enter>.

The following prompt appears:

Do you want to relink the kernel now? (y/n)

20 Type **y** and press <Enter>.

When relinking is complete, the following prompt appears:

Do you want this kernel to boot by default? (y/n)

21 Type **y** and press <Enter>.

The following prompt appears:

Do you want this kernel environment rebuilt? (y/n)

22 Type **y** and press <Enter>.

The program relinks the kernel environment.

23 When the command prompt appears, enter the following command:

uname -S *hostname*

where *hostname* is the name you entered in step 15. (The hostname of the AP must match the hostname you entered when you configured the Ethernet card.)

24 Remove the diskette from the diskette drive.

25 Shut down the system by entering

shutdown -y -g0

26 When prompted, press <Enter> to restart the system.

Chapter 3: Installation and configuration

This chapter describes how to install and configure the Call Center Integration Package (CCIP) on a single Application Processor (AP). You must repeat the procedures in this chapter for each AP on which you are installing CCIP.

The chapter contains the following sections:

- pre-installation checklist, containing the information you need to collect before installing
- installing the CCIP software
- configuring CCIP
- starting CCIP
- configuring the MultiMedia Resource Server (MRS)
- verifying the installation

Pre-installation checklist

Before you begin the installation, make sure that you have the following information:

- the Meridian 1 machine ID and customer number

  To find out the Meridian 1 machine ID, log into Meridian Link as mlusr, and enter the get links command. For detailed instructions, refer to the *Meridian Link/Customer Controlled Routing Installation and Upgrade* manual.

- the Internet Protocol (IP) address of the Open Interactive Voice Response (IVR) AP or Multimedia Resource Server (MRS)/AP

  Check the /etc/hosts file to find out the IP address.

> **ATTENTION**
>
> Ensure that the entry in the /etc/hosts file contains an alias that includes the domain name of the host. For example:
>
> 50.100.200.10 ivr_ap ivr_ap.corp.com

- the Open IVR root and Nortel passwords

  Refer to the *Nortel IVR Installation and Maintenance Guide* for the Nortel password.

- the MRS number

  To find out the MRS number, use the System Monitor utility of Open IVR. Refer to the *Nortel IVR Installation and Maintenance Guide* for detailed instructions.

- the IP address and mlusr password for Meridian Link

  Refer to the *Meridian Link/Customer Controlled Routing Installation and Upgrade* manual for the mlusr password.

- the Meridian Link machine ID

  To find out the Meridian Link machine ID, use the display link 1 command. For detailed instructions, refer to the *Meridian Link/Customer Controlled Routing Installation and Upgrade Guide*.

- the Meridian Link port number
- root password for the AP
- the IVR directory numbers (DNs) on the MRS
- all agent DNs and Automatic Call Distribution (ACD) position IDs

Installing the CCIP software

To install or upgrade CCIP, follow this procedure.

Note: During an upgrade, your existing CCIP configuration (stored in ccip.ini) is retained. However, all log files are replaced.

CAUTION!
Risk of data loss
Shut down Open IVR before installing CCIP.

Procedure 3-1
Installing CCIP

1 Back up the AP on which you are installing CCIP. If you are using Open IVR Release 2.01, refer to the *General Release Bulletin* of CCIP. If you are using Open IVR Release 2.5, follow the instructions in your *Nortel IVR Product Overview Guide.*

2 Shut down Open IVR and exit from X-Windows.

3 Reboot the AP by logging in as root and entering

shutdown -y -g0

4 When the prompt Press Any Key to Reboot appears, press <Enter>.

5 When the Boot: prompt appears, press <Enter>.

The following prompt appears:

INIT: SINGLE USER MODE

Type CONTROL-d to proceed with normal start-up,
(or give root password for system maintenance).

6 Enter the root password and press <Enter>.

7 Insert the CCIP tape in the tape drive.

8 Change the working directory to /tmp by entering

cd /tmp

9 To extract the installation file from the tape, enter

tar xv8 init.install

The extraction takes several minutes. The following message appears as the file is extracted:

x init.install, 13738 bytes, 27 tape blocks

When the extraction is complete, the # prompt appears.

10 Then, start the installation or upgrade by entering

./init.install

The following prompt appears:

==========
Visual TCL and CCIP Install Utility
Version 1.00
==========

(1) Install/Reinstall CCIP

(2) Abort installation

11 Type **1** and press <Enter>.

The following prompt appears:

In order for installation to proceed, ensure the following:

1) User is logged in as root.
2) System is in single-user mode (reboot).
3) CCIP tape is inserted into the tape drive.
4) You know the IP address of this machine.

Are the above conditions met? (y/n)

12 Type **Y** to indicate that all of these conditions have been met, and press <Enter>.

The following prompt appears:

Please enter the IP address of this machine:

13 Enter the IP address of the machine on which you are installing CCIP.

The following prompt appears:

Is the tape containing the CCIP package inserted? (y/n)

14 Type **Y** again and press <Enter>.

The installation process begins. It takes several minutes to complete. The following messages appear:

--->Customizing Drop down menu for CCIP
--->Making adjustment for the CCIP directory
--->Copying files from tape, Please wait.
--->Uncompressing the required files. Please wait.
--->Distributing Visual TCL files. Please wait.
--->Distributing the required files. Please wait.
--->Setting the required profile for nortel account.
--->Distributing additional files and enhancing severity file.
--->Defining additional files and enhancing severity file.
--->Defining a service port number and adding CCIP's logfile to syslog.conf file.
--->Putting Machine IP address in CCIP database.
--->Distributing Startup/Shutdown scripts
--->Rebuilding the database

--->Changing file permissions/ownership.
--->Setting the S-bit for required files.
--->Clean up in progress!
--->Tuning the kernel for CCIP requirements!

The UNIX Operating System will now be rebuilt
This will take a few minutes. Please wait

Root for this system build is /.

The UNIX Kernel has been rebuilt.

Backing up /unix to /unix.old
Installing new /unix
Setting up new kernel environment

The installation of the CCIP Package is complete now!
Please reboot your system now for the changes to take place.
Thank You for using IST installation program.
#

Note: For an upgrade, the message *This is an Upgrade, Invoking Upgrade Procedure* appears at the beginning of the installation, and the kernel tuning process does not occur.

15 When the installation is complete, remove the installation tape.

16 Reboot the system by entering

reboot

Configuring CCIP

After you install CCIP, you must configure it. Configuring CCIP involves the following procedures:

- configuring IVR DNs
- configuring agent DNs
- setting up the channel map
- configuring Meridian Link parameters

To perform all of these tasks, you use the CCIP administration utility. This section explains how to start the utility and use it to perform these tasks. All configuration information is stored in ccip.ini.

Note: For more information about this file, refer to Appendix C, "The CCIP initialization file."

CAUTION!
Risk of data loss
If you need to change the CCIP configuration after your initial installation, make a backup copy of /u/nortel/bin/ccip.ini before proceeding.

Starting the CCIP administration utility

This section explains how to use the CCIP administration utility from the system on which CCIP is installed. To find out how to access the utility remotely, refer to "Accessing the CCIP administration utility remotely" on page 4-2.

To use the CCIP administration utility on the AP, press the right mouse button on the desktop and select CCIP Admin from the menu. Click the left mouse button to drop the window. The CCIP Administration window appears.

Configuring IVR DNs

You must tell CCIP about all of the IVR DNs on the AP on which CCIP is installed. To do so, follow this procedure.

Procedure 3-2
Configuring IVR DNs

1 From the Config menu, choose Agent Position ID's.

The Agent Position ID's window appears.

2 Select IVR and click the EDIT... button.

The IVR DN window appears.

3 To add a new IVR DN, click the ADD... button.

The Add IVR DN window appears.

4 For AGENT Position ID, enter a DN or DN range in one of the following formats:

nnnn	a single DN, for example, 4000
nnnn-nnnn	a range of DNs, for example, 4000-4095

You can enter a range if the DNs are contiguous, and if their agent ID is the same as their position ID.

5 For TYPE, enter 130. This is the decimal number that identifies the agent type of the DN. The number “130” represents an ACD position ID. For a list of agent types, refer to Table E-2, “ Agent types,” on page E-2.

6 For LOGIN FLAG, enter **1** if you want to log in these DNs when CCIP starts and log them out when CCIP stops. Enter **0** if you do not want to log them in and out automatically.

7 For AGENT TYPE, enter 8. This is the decimal number that identifies the DN type as “internal”. For a list of DN types, refer to Table E-1, “ DN types,” on page E-1.

8 For AGENT ID, enter the ID the agent uses to log into this DN. If the agent ID is the same as the position ID, enter an asterisk (*). If you are defining a range of DNs, the agent IDs for all the DNs must be the same as the position ID. If they are not, you must define each DN separately.

9 Click the SAVE button.

The Agent Position ID’s window appears.

10 Repeat step 3 to step 9 for each DN or DN range you want to define.

11 When you are finished, click the CLOSE button.

Configuring Agent DNs

You must tell CCIP about all of the Agent DNs that it will be serving (that is, to which it will be transferring or conferencing calls). To do so, follow this procedure.

Procedure 3-3
Configuring Agent DNs

1 From the Config menu, choose Agent Position ID's.

The Agent Position ID's window appears.

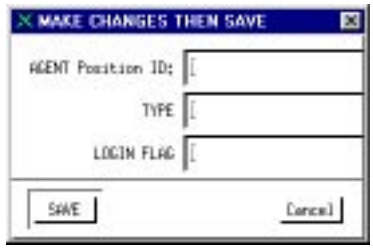
2 Select AGENT.

3 Click the EDIT... button.

The Agent DN window appears.

4 To add an agent DN, click the ADD... button.

The Add Agent DN window appears.



5 For AGENT Position ID, enter a DN or DN range in one of the following formats:

nnnn	a single DN, for example, 4000
nnnn-nnnn	a range of DNs, for example, 4000-4095

6 For TYPE, enter 130. This the decimal number that identifies the agent type of the DN. The number “130” represents an ACD position ID. For a list of agent types, refer to Table E-2, “ Agent types,” on page E-2.

7 For LOGIN FLAG, enter **0**. This is the only valid value.

8 Click the SAVE button.

The Agent Position ID’s window appears.

9 Repeat step 4 to step 8 for each DN or DN range you want to add.

10 When you are finished, click the CLOSE button.

Setting up the channel map

You must also map IVR channel numbers to their associated DNs (or ACD position IDs). To do so, follow this procedure.

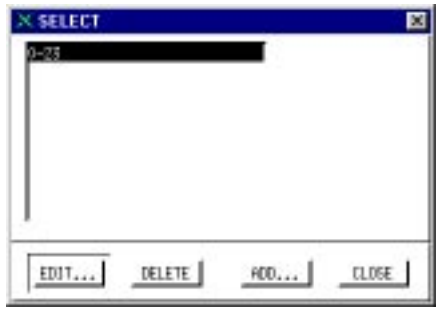
Procedure 3-4
Setting up a channel map

1 From the Config menu, choose Channel Map.

The Channel Map window appears.

2 Select IVR channel numbers and click the EDIT... button.

The IVR Channel Numbers window appears.



3 To map a new channel, click the ADD... button.

The Add New Channels window appears.

4 For IVR Channel, enter a channel or channel range in one of the following formats:

ccc	a single channel number; for example, 0
ccc-ccc	a range of channels; for example, 0-95

5 For AGENT Position ID, enter the DNs associated with these channels. The format of the DN can be one of the following:

nnnn	a single DN, for example, 8200
nnnn-nnnn	a range of DNs, for example, 7000-7095

6 Click the SAVE button.

7 Repeat step 3 to step 6 for each channel or channel range you want to add.

Configuring Meridian Link parameters

You must configure CCIP to connect to Meridian Link. Before you proceed, make sure that you have the information specified in the "Pre-installation checklist" on page 3-1. When you have assembled the information, follow this procedure.

Procedure 3-5
Configuring Meridian Link parameters

1 From the Config menu, choose Interface to Meridian Link.

The Interface to Meridian Link window appears.

2 Select Link Module IP Address and click EDIT....

The Link Module IP Address window appears.

3 For Link Module IP Address, enter the IP address or host name of the Meridian Link module. Enter the IP address in the format *nnn.nnn.nnn.nnn*. If you enter a host name, it must be defined in the etc/hosts file on the AP.

Note: Example values include

mlink

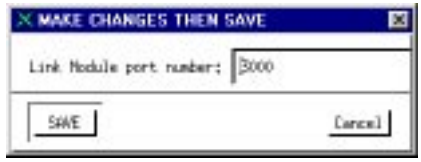
50.100.200.10

4 Click the SAVE button.

The CONFIGURATION window appears.

5 Select LINK Module port number and click EDIT....

The Link Module Port Number window appears.



6 For LINK Module port number, enter **3000**.

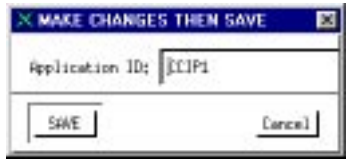
Note: The default value is 3000.

7 Click the SAVE button.

The CONFIGURATION window appears.

8 Select Application ID and click EDIT....

The Application ID window appears.



9 For Application ID, enter a Meridian Link application ID. This name must be unique; that is, no two Meridian Link applications should have the same ID.

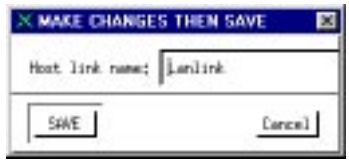
Note: The default value is CCIP1.

10 Click the SAVE button.

The CONFIGURATION window appears.

11 Select Host link name and click EDIT....

The Host Link Name window appears.



12 For Host link name, enter the name of the Meridian Link machine ID.

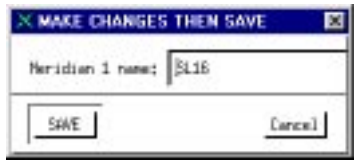
Note: The default value is Lanlink.

13 Click the SAVE button.

The CONFIGURATION window appears.

14 Select Meridian 1 name and click EDIT....

The Meridian 1 Name window appears.



15 For Meridian 1 name, enter the Meridian 1 machine ID.

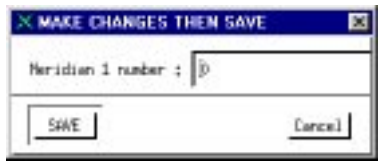
Note: The default value is SL16.

16 Click the SAVE button.

The CONFIGURATION window appears.

17 Select Meridian 1 number and click EDIT....

The Meridian 1 Number window appears.



18 For Meridian 1 number, enter the Meridian 1 customer number.

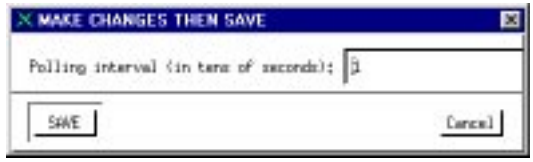
Note: The default value is 0.

19 Click the SAVE button.

The CONFIGURATION window appears.

20 Select Polling interval and click EDIT....

The Polling Interval window appears.



21 For Polling interval (in tens of seconds), enter the interval between polling messages from the Meridian Link module to the Meridian Link server.

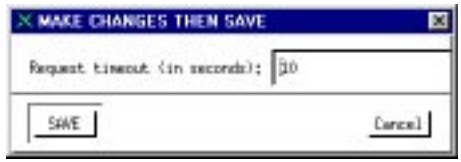
Note: Valid values are 0 to 24. The default value is 1.

22 Click the SAVE button.

The CONFIGURATION window appears.

23 Select Request timeout and click EDIT....

The Request Timeout window appears.



24 For Request timeout (in seconds), enter the time that the Meridian Link server will wait for a response to a request sent to the Meridian Link module. If a response is not received in the specified time, the request fails and a timeout error is returned.

Note: Valid values are 0 to 240. The default value is 10.

25 Click the SAVE button.

The CONFIGURATION window appears.

26 Click the CLOSE button.

CCIP is now installed and configured.

CAUTION!
Risk of data loss
To ensure that you don't lose your configurations, you should include the ccip.ini file in your regular system backup.

Configuring the MultiMedia Resource Server

If you configure CCIP to log in IVR DNs automatically, you must ensure that Open IVR does not log them in. If you are using an MRS/AP, follow the procedure in Procedure 3-6. If you are using a standalone MRS, follow the procedure in Procedure 3-7.

Procedure 3-6
Configuring the MRS/AP

1 Log into the MRS/AP as the root user.

2 If you are not using a T1 interface to the Meridian 1 switch, go to step 4. If the interface to the switch is a line side T1, make the /u/nortel/ccip directory the current directory by entering

cd /u/nortel/ccip

3 Copy the trunk file into the /usr/vrs/types directory by entering

cp nt-fxs-t1-ls.tt /usr/vrs/types

4 For each trunk group, modify the trunk type and select a type that does not log in IVR DNs. The trunk type you select depends on the type of interface to the Meridian 1 switch. Select the trunk type that corresponds to your M1 interface in the table below.

IF your interface to the M1 is...	THEN choose this trunk file
Loop Start (LSI120/LSI80 and D41ESC)	Loop-B
Line Side T1	nt-fxs-t1-ls

For detailed instructions, refer to the *Nortel IVR Generator Service Console Interface Reference Manual*.

5 From the config menu, select done to exit and save your changes.

Procedure 3-7
Configuring the MRS

1 If you are not using a T1 interface to the Meridian 1 switch, go to step 4. If the interface to the switch is a line side T1, log in to the AP as the root user.

2 Make the /u/nortel/ccip directory the current directory by entering

cd /u/nortel/ccip

3 Use your ftp application to connect to the MRS by entering

ftp *mrs*

where *mrs* is the host name of your MRS system.

The login prompt appears.

4 At the login prompt, type **root** and press <Enter>.

The password prompt appears.

5 Enter your root password.

6 Make the /usr/vrs/types directory the current directory by entering

cd /usr/vrs/types

7 Copy the file by entering

put nt-fxs-t1-ls.tt

8 On the MRS, log in as the root user.

9 For each trunk group, modify the trunk type and select a type that does not log in IVR DNs. The trunk type you select depends on the type of interface to the Meridian 1 switch. Select the trunk type that corresponds to your M1 interface in the table below.

IF your interface to the M1 is...	THEN choose this trunk file
Loop Start (LSI120/LSI80 and D41ESC)	Loop-B
Line Side T1	nt-fxs-ls-t1

For detailed instructions, refer to the *Nortel IVR Generator Service Console Interface Reference Manual*.

10 From the config menu, select done to exit and save your changes.

Starting CCIP

After installing and configuring CCIP, start the application. To do so, follow this procedure.

1 Ensure that the AP has a network connection to Meridian Link. To do so, on the AP enter

ping *nnn.nnn.nnn.nnn*

where *nnn.nnn.nnn.nnn* is the IP address of the Meridian Link host. Make sure that you can ping this host before continuing. If you cannot connect to the Meridian Link host, check the network connection.

2 From the Main menu of the CCIP administration utility, choose Start CCIP.

The CCIP Status window opens. As the CCIP servers start, their status changes to RUNNING.

For more information about start-up, refer to “Starting CCIP” on page 4-4.

Verifying the installation

After installing and starting CCIP, make sure that CCIP is registered with Meridian Link and Open IVR. To do so, follow this procedure.

Procedure 3-8
Verifying the installation

1 Ensure that CCIP has been registered with Meridian Link. To do so, log into Meridian Link as mlusr.

2 Display all applications registered with Meridian Link by entering

get assoc

The resulting list should include the application ID for the CCIP application (by default, CCIP1). Note the application's association number.

If the application is not in the list, the Meridian Link parameters are not configured correctly. Refer to "Configuring Meridian Link parameters" on page 3-13.

3 Display all of the DNs monitored by CCIP by entering

get dns *nn*

where *nn* is the association number assigned to CCIP. The resulting list should include all of the IVR and agent DNs being monitored by CCIP. If the list is incomplete, the IVR or agent DNs are not configured correctly. Refer to "Configuring IVR DNs" on page 3-7 and "Configuring Agent DNs" on page 3-9.

4 Check the Open IVR console. It should display the message

CCIP is Ready

Using the test application

After verifying that CCIP is registered with Meridian Link and Open IVR, use the test application to test the installation.

Procedure 3-9
Using the test application

1 Start the Prompt Loading Facility from the Open IVR control panel. (For detailed instructions, refer to the *Nortel IVR Generator System Administration Guide*.)

The Prompt Loading Facility menu appears.

2 Select Restore Prompts from Host to MRS.

3 For List of Prompts to Restore, enter **400-445**.

4 For MRS Number, enter the MRS number.

5 For Voice Files Directory, enter **/u/nortel/ccip/vfiles.d**.

6 Press F3 to initiate the transfer of prompts.

7 At the Open IVR Application Management window, load, set channels for, and start the aCCIPTEST application.

When you set channels, specify all of the IVR channels you want to monitor for the test application. These channels must have been configured in “Setting up the channel map” on page 3-11.

8 Load and start the aGETINFO application.

9 Call one of the DNs specified in step 7 and follow the instructions in the voice prompts to test the GetCallInfo, transfer, and conference user functions. (When you are prompted for DN type, enter the number that identifies the type of DN to which you want to transfer or conference the call. For an internal DN, enter 8, and for an ACD queue, enter 16.)

If the test application does not work, CCIP is not configured correctly.

10 When you are finished, stop and unload the applications.

Chapter 4: System administration

This chapter provides instructions for administering the Call Center Integration Package (CCIP). Administering CCIP involves the following tasks:

- Start, shut down, and reset CCIP.
- View CCIP logs and statistics.
- Customize CCIP preferences.
- Change the IP address of the Application Processor (AP).

To perform these tasks, you use the CCIP system administration interface. You can run this utility locally (on the system on which CCIP is installed), or remotely, with a modem.

This chapter explains how to start the administration utility and use it to perform these tasks. To use the utility to configure CCIP, refer to “Configuring CCIP” on page 3-6.

Starting and stopping the CCIP administration utility

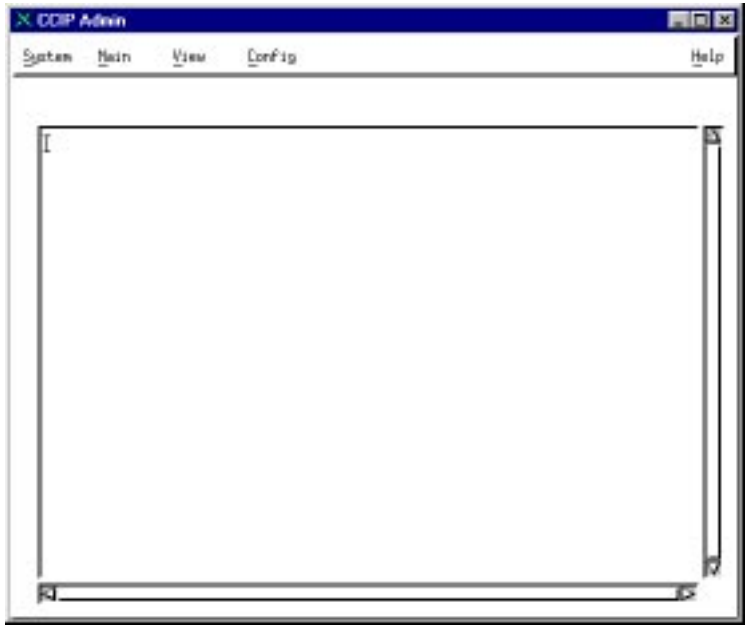
You can access the CCIP administration utility locally or remotely. This section provides instructions for starting the utility in either of these different ways. It also explains how to exit from the utility.

Accessing the CCIP administration utility locally

You can access the CCIP administration utility from the AP on which CCIP is installed. (When you access the utility locally, you see the X-Window interface.)

To start the CCIP administration utility, press the right mouse button on the desktop and select CCIP Admin from the menu. Click the left mouse button to drop the window. The CCIP Administration window appears.

Figure 4-1
CCIP Administration window



Accessing the CCIP administration utility remotely

You can also access CCIP remotely, using a modem. (When you access CCIP remotely, you use the text-based interface.) If you have a Multimedia Resource Server (MRS)/AP, follow the instructions in Procedure 4-1. If you have a standalone AP, follow the instructions in Procedure 4-2.

Procedure 4-1
Accessing the CCIP administration remotely on an MRS/AP

1 Use your communications application to log in to the MRS/AP as the Nortel user.

2 Make the /u/nortel/ccip/bin directory the current directory by entering

cd /u/nortel/ccip/bin

3 Type **ccipadmin.sh** and press <Return>.

The text-based administration interface appears.

Procedure 4-2
Accessing the CCIP administration remotely on a standalone AP

1. Use your communications application to log in to the MRS/AP as the Nortel user.
2. Use your telnet application to connect to the AP on which CCIP is installed.

   The program prompts you for a login ID.
3. Enter **nortel**.

   The program prompts you for a password.
4. Enter the password for the Nortel user.
5. Change to the /u/nortel/ccip/bin directory by entering

   cd /u/nortel/ccip/bin
6. Type **ccipadmin.sh** and press <Return>.

   The text-based administration interface appears.

Quitting from the CCIP administration utility

Whether you are accessing the CCIP administration utility locally or remotely, from the System menu, choose Quit.

Starting, stopping and resetting CCIP

This section explains how to start, stop, and reset CCIP from the CCIP administration utility.

Starting CCIP

From the Main menu choose Start CCIP. If CCIP is not running, the following events occur:

> **ATTENTION**
>
> Start CCIP before you start any CCIP applications. If you do not, CCIP will not respond to user function requests from the applications.

1 The CCIP backbone process starts. This process manages communication between the CCIP servers.

2 The CCIP Status window opens (see Figure 4-2).

3 The backbone process starts each of the CCIP servers. As each server starts up, it goes to IDLE state.

4 The Call Center Controller (CCC) initializes the Database server. (As each server is initialized, its status in the CCIP Status window changes first to STARTING and then to RUNNING.)

5 The CCC initializes the Meridian Link server.

6 If CCIP is configured to log on Interactive Voice Response (IVR) directory numbers (DNs), the Meridian Link server logs on any that are not logged on. (This is the default configuration. To change it, refer to “Configuring IVR DNs” on page 3-7.)

7 The CCC initializes the Active Calls Table (ACT) server.

8 The CCC initializes the IVR server.

Figure 4-2
CCIP Status window

If start-up is unsuccessful, the log displays start-up errors.

Shutting down CCIP

You can use either a forceful shutdown, which shuts down CCIP immediately, or a courtesy shutdown, which waits a configurable amount of time before shutting down. (To find out how to configure this time, refer to “Configuring IVR DNs” on page 3-7.)

Forceful shutdown

To perform a forceful shutdown, from the Main menu choose Stop CCIP (Forceful Shutdown). The following events occur:

1 CCIP stops immediately and all of its servers are shut down.

2 If CCIP is configured to log IVR DNs off automatically, it logs off all IVR DNs.

Courtesy shutdown

To perform a courtesy shutdown, from the Main menu choose Stop CCIP (Courtesy Shutdown). The following events occur:

1 CCIP stops accepting new requests.

2 If CCIP is configured to log IVR DNs off automatically, all idle IVR DNs are logged off.

3 CCIP waits for existing requests (such as call transfers) to complete before executing a forceful shutdown. The amount of time it waits is configurable, defaulting to 30 seconds. (To change the time, refer to “Customizing CCIP preferences” on page 4-12.) During this period, if CCIP is configured to log off IVR DNs, it does so as they become idle.

4 If CCIP is configured to log IVR DNs off, it logs off all remaining IVR DNs.

5 The system then shuts down all CCIP servers.

Resetting CCIP

If you need to stop and restart CCIP, from the Main menu choose Reset CCIP. This menu option performs a Stop CCIP (Forceful Shutdown), followed by a Start CCIP.

Viewing logs and statistics

To view log messages, CCIP or channel status, or statistics, you can use the View menu. You can choose the following options from the View menu.

System Status

Displays the current status for each CCIP server.

If CCIP is not running, the following message appears:

This service is unavailable since the CCIP is not running.

If it is running, the System Status window appears.

Figure 4-3
System Status window

Server status is either Idle, Starting, Running, or Stopping. The display is updated every few seconds.

Channel Status

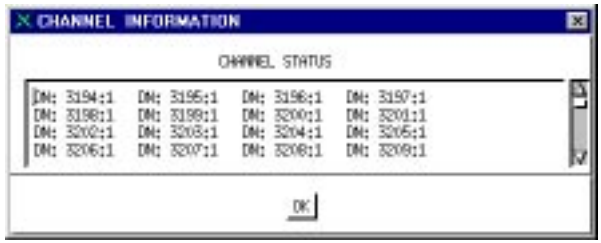
Displays the current channel status. If you have configured CCIP to log on IVR DNs automatically, use this menu option instead of the sci/status/map menu option. When IVR DNs are logged on and off automatically, this command does not accurately reflect Automatic Call Distribution (ACD) status.

If CCIP is not running, the following message appears:

This service is unavailable since the CCIP is not running.

If it is running, the Channel Information window appears.

Figure 4-4
Channel Information window



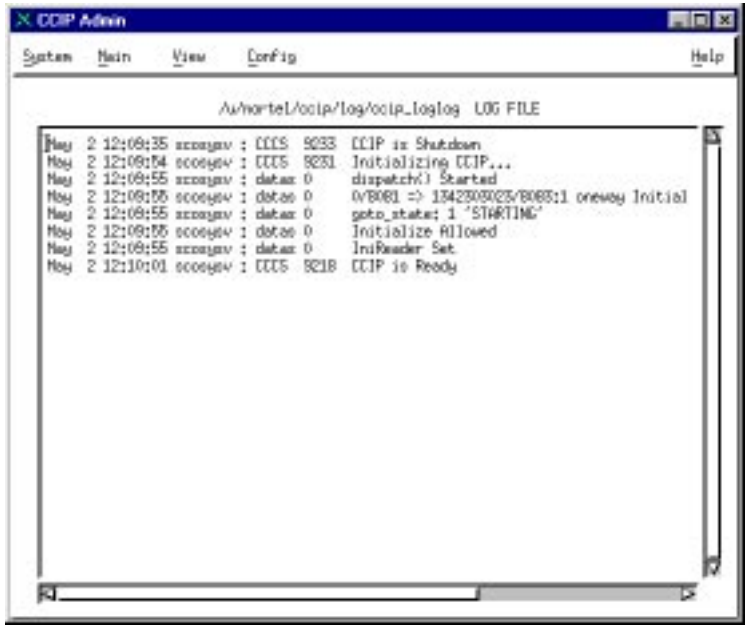
For each channel, this window contains an ACD status number. This number can be one of the following.

0	The channel is logged off and idle.
1	The channel is logged on and idle.
2	The channel is logged off and a call is ringing on the channel. (This might occur if CCIP is not configured to log in IVR DNs automatically.)
3	The channel is logged on and a call is ringing on the channel.
4	The channel is logged off and a call is active on the channel. (This might occur if CCIP is not configured to log in IVR DNs automatically.)
5	The channel is logged on and a call is active on the channel.

8	The channel is waiting to log on.
16	The channel is waiting to log off.

Error Log

Displays the CCIP error log. You can scroll through the log using the scroll bar. To find out how to change the level of error reporting, refer to “CCIP Error and Event Log” on page A-7.



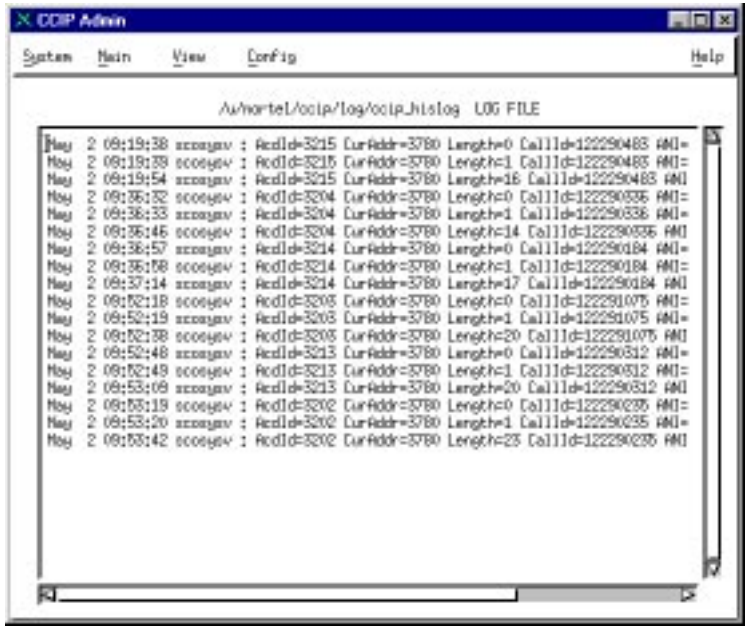
Each log entry contains the following information:

- date and time
- the host name of the AP on which CCIP is installed
- the server that generated the error message
- the error message number
- the text of the error message

Note: If you enable trace logging for a server, the log also contains trace messages generated by that server. To enable tracing, refer to "CCIP Error and Event Log" on page A-7.

Call History

Displays the CCIP ACT History file.You can scroll through the file using the scroll bar.



Each entry in the Call History file contains the following information:

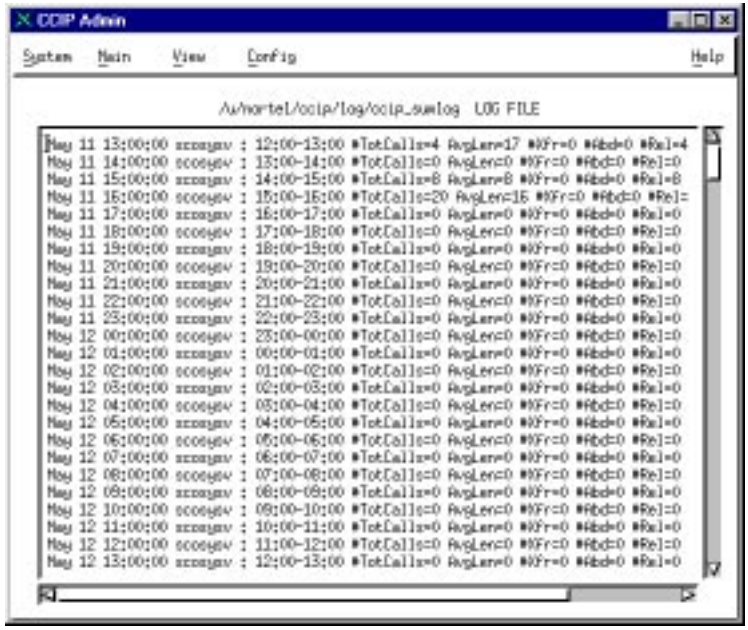
- date/time
- host name of the AP on which CCIP is installed
- Automatic Call Distribution (ACD) Position ID (AcdId)
- ACD queue (CurAddr)
- length of call, in seconds
- Call ID
- Automatic Number Identification (ANI)

- Dialed Number Identification Service (DNIS)
- event (call offered, call answered, call abandoned, and so on)

Call Summary

Displays the CCIP ACT Summary file.You can scroll through the file using the scroll bar.

Figure 4-5
Call Summary window



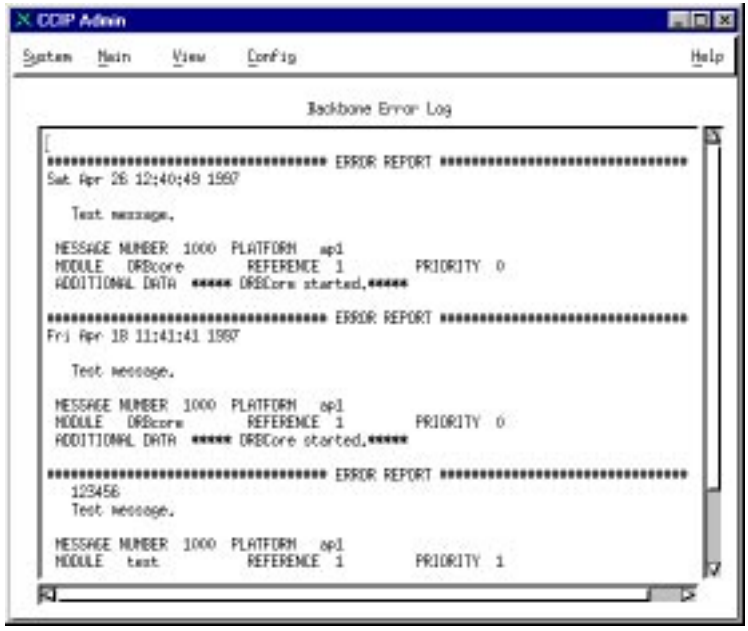
Each entry in the Call Summary file contains the following information:

- date/time
- host name of the AP on which CCIP is installed
- hour range (for example, 12:00 - 13:00)
- total number of calls (#TotCalls)
- average length of call (AvgLen)
- number of transferred calls (#Xfr)

- number of abandoned calls (#Abd)
- number of released calls (#Rel)
- number of different ANIs (#ANI)
- number of different DNISs (#DNIS)

Backbone Error Log

Displays the error log generated by the backbone process—the process that manages communication between the CCIP servers. Your service representative will use this log to troubleshoot problems with CCIP.



Each log entry contains the following information:

- the host name of the AP where the backbone is running (PLATFORM)
- the source code module in which the error occurred (MODULE)
- a reference number in the module which will help your service representative locate the error in the backbone code (REFERENCE)

- the priority level of the error (PRIORITY)
- an error description (ADDITIONAL DATA)

Customizing CCIP preferences

You can customize the way some of the CCIP functions work. To do so, follow this procedure.

Procedure 4-3
Customizing CCIP preferences

1 From the Config menu, choose System Preferences.

The System Preferences window appears.

2 Select autostart_CCIP and click the EDIT... button.

The auto_start CCIP window appears.

3 For Start CCIP when UNIX is started, type 1 if you want CCIP to start automatically when the AP is booted. Type 0 if you don't want CCIP to start automatically.

Note: The default value is 1.

4 Click the SAVE button.

The CONFIGURATION window appears.

5 Select courtesy_length and click the EDIT... button.

The courtesy_length window appears.

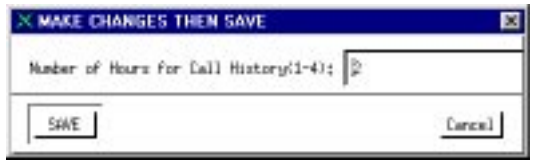
6 For Length of Courtesy Shutdown (in seconds), enter the number of seconds that courtesy shutdown will wait for ongoing requests to complete before it ends the call and shuts down.

7 Click the SAVE button.

The CONFIGURATION window appears.

8 Select call_history_keep and click the EDIT... button.

The call_history_keep window appears.



9 For Number of Hours for Call History (1-4), enter the number of hours that CCIP will keep in its call history log.

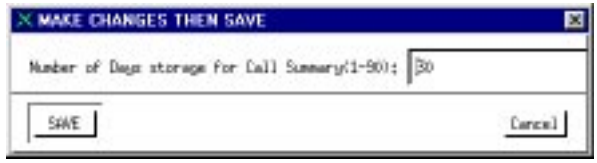
Note: The default value is 4.

10 Click the SAVE button.

The CONFIGURATION window appears.

11 Select call_summary_keep and click the EDIT... button.

The call_summary_keep window appears.



12 For Number of Days storage for Call Summary (1-90), enter the number of days that CCIP will keep in its call summary log.

Note: The default value is 1.

13 Click the SAVE button.

The CONFIGURATION window appears.

14 Click the CLOSE button.

Changing the IP address

When you install CCIP, you specify the IP address of the AP. This information is stored in internal files used by CCIP. If you change the IP address of the AP, you must modify these files. You can do so by reinstalling CCIP, but it is much easier to use the changeip utility. This procedure explains how to use the changeip utility to notify CCIP that the IP address of the AP has changed.

Procedure 4-4
Changing the IP address

1 Shut down CCIP (for detailed instructions, refer to “Shutting down CCIP” on page 4-5).

2 Make /u/nortel/ccip the current directory by entering

cd /u/nortel/ccip

3 Run the changeip utility by entering

changeip

The program prompts, Please enter the new IP address of this machine:

4 Enter the new IP address.

The UNIX $ prompt appears. You can now start CCIP.

Chapter 5: Application development

CCIP allows you to add call transfer and call conferencing to the customized voice applications you build with Interactive Voice Response (IVR) Generator. You can also retrieve information about calls, for use in your applications.

In CCIP, these additional abilities are implemented as user functions. CCIP includes six user functions:

- GetCallInfo—This function retrieves information about a call, including current location, Automatic Call Distribution (ACD) position, calling line ID (CLID), Dialed Number Identification Service (DNIS), IVR treatment DN, device type, and call arrival time.
- InitSupervisedTransfer—This function initiates a two-step transfer. The transfer is completed by the CompleteSupervisedTransfer function.
- CompleteSupervisedTransfer—This function completes a two-step transfer. If the transfer is successful, the caller is connected to the destination directory number (DN), and IVR is disconnected.
- FastTransfer—This function initiates a fast, one-step, transfer. If the transfer is successful, the caller is connected to the destination DN, and IVR is disconnected.
- InitConference—This function initiates a digital call conference. The conference is completed by the CompleteSupervisedTransfer function.
- CompleteConference—This function completes a digital call conference. If the conference is successful, the caller and IVR are connected to the destination DN.

To find out how to include user functions in your applications, refer to the following section. For more information about these user functions, including their input buffers, output buffers, and reply codes, refer to “CCIP user functions” on page 5-6. For a sample application, refer to “Sample application” on page 5-16.

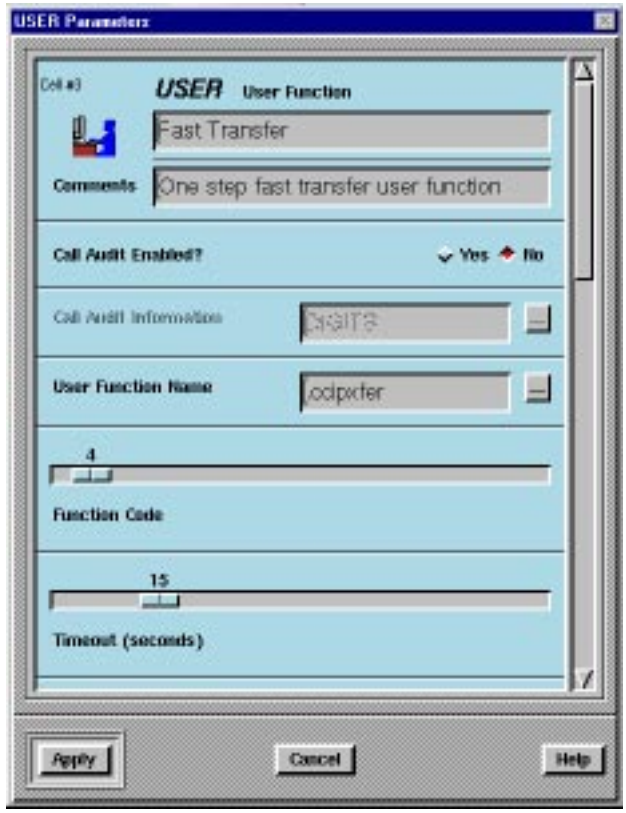
> **ATTENTION**
>
> User functions require additional memory resources on the Application Processor (AP). Ensure that you have sufficient memory installed on the AP.

Including user functions in your application

To include a user function in your application, insert the USER cell. Then follow this procedure.

Procedure 5-1
Using User Functions

1 For User Function Name, select the name of the User Function.



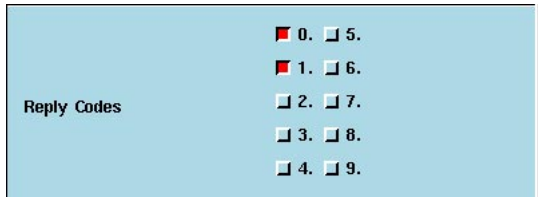
For the FastTransfer user function, the name is ".ccipxfer". (Refer to "FastTransfer .ccipxfer (Function code 4)" on page 5-11.)

2 Enter the function code in the Function Code parameter.

For FastTransfer, the function code is 4.

3 In the Reply Code table, click each possible Reply Code.

For FastTransfer, configure reply codes 0 and 1.



4 Enter the number of input buffers in the Buffer Count field.

For FastTransfer, enter 4.

5 In the Input Buffer table, list the input buffers.

Note: The order of the buffers is important. Enter the buffers in the order in which they appear in “CCIP user functions” on page 5-6.

6 Enter the number of output buffers in the Buffer Count field.

For FastTransfer, enter 1.

7 In the Output Buffer table, list the output buffers.

Note: The order of the buffers is important. Enter the buffers in the order in which they appear in “CCIP user functions” on page 5-6.

For detailed instructions, refer to the *Nortel IVR Generator Application Development Guide*.

Note: CCIP does not use the user function timeout slider in Open IVR release 2.0. For transfers and conferences, CCIP uses the timeout supplied in the input buffers. For .ccipinfo, it uses a timeout of 15 seconds.

CCIP user functions

This section describes each of the user functions including, for each one, the function code, contents of the input and output buffers, and reply codes.

GetCallInfo .ccipinfo (Function code 1)

This function retrieves information about the current call, or about a call with the specified call ID. CCIP is able to obtain information about changes to a call's status even after it is transferred out of IVR. For example, after a call is offered to an agent DN that is configured in CCIP, CCIP is able to obtain the agent ACD position.

Table 5-1
Input buffers for Function code 1

Buffer	Content	Description
1	which_call	0 = current call, 1 = by call ID, 2 = by network call ID
2	ID	If Buffer 1 is 0, this buffer is ignored. If it is 1, this buffer should contain the call ID; if it is 2, this buffer should contain the network call ID.

Table 5-2
Output buffers for Function code 1

Buffer	Content	Description
1	return code	0 = success, 6 = request-disallowed, 9005 = call not found If reply code is 1 (Failure), then only Buffer 1 (Return code) is defined; all other buffers are empty.
2	Call ID	A 32-bit number that uniquely identifies the call.
3	Network Call ID	A 32-bit number that uniquely identifies a call in a network environment. This buffer is empty unless the call is from a networked Automatic Call Distribution (NACD).

Table 5-2 (continued)
Output buffers for Function code 1

Buffer	Content	Description
4	current location (DN)	DN where the call is. If the call is on an ACD DN, then this buffer contains the ACD DN and Buffer 5 contains the ACD position.
5	ACD position	Position ID within the ACD DN. This field is empty until the call is offered to an ACD position.
6	CLID	Calling Line ID. This is typically the 10-digit telephone number of the caller. (CLID is an ISDN service. If it is not available, this buffer is empty.)
7	DNIS	Dialed Number Identification Service or IVR treatment CN. Typically, the DNIS is the last 3 or 4 digits in the number dialed by the caller. (DNIS is an optional package. If it is not available, this buffer is empty.) If a call has both a DNIS and an IVR treatment DN, this buffer contains the IVR treatment DN.
8	device type	Type of device that got the call. Valid device types include 0—Unknown 1—500 set 2—2500 set 3—SL-1 set 4—Attendant 5—Proprietary set 6—Trunk 7—SL-1 set using EES (end-to-end signalling) 8—Proprietary set using EES
9	call arrival time	Number of seconds since midnight on January 1, 1970.

Table 5-3
Reply codes for Function code 1

Reply code	Meaning
0	Success
1	Failure

InitSupervisedTransfer .ccipxfer (Function code 2)

This function initiates a supervised digital call transfer. The transfer is completed by the CompleteSupervisedTransfer function.

If the function is successful, the IVR application is connected to the destination DN and the original caller is placed on hold. IVR can then play prompts (using the agent whisper feature) and complete the transfer, or retrieve the original caller, using the CompleteSupervisedTransfer function.

If the transfer is unsuccessful, the result depends on the reply code (refer to Table 5-6).

Table 5-4
Input buffers for Function code 2

Buffer	Content	Description
1	destination DN	The DN to which the call is transferred.
2	timeout units	0 = rings; 1 = minutes. The timeout determines how long CCIP waits for the call to be answered before recovering it.
3	timeout value	A value from 1 to 32, indicating the length of timeout in either rings or minutes.
4	destination DN type	A decimal value identifying the DN type. Enter a number from 0 to 30. For a list of DN types, refer to Table E-1, on page E-1. If the buffer is empty, DN type 8 (Internal DN) is assumed.

Table 5-5
Output buffers for Function code 2

Buffer	Content	Description
1	return code	0 = success,1 = busy, 2 = ring-no-answer, 3 = caller-abandoned, 4 = timeout, 6 = request disallowed (CCIP not in RUNNING state), or a Meridian Link error number. If reply code is 1 (Failure), then only Buffer 1 (Return code) is defined; all other buffers are empty.
2	Call ID	A 32-bit number that uniquely identifies the call.
3	Network Call ID	A 32-bit number that uniquely identifies a call in a network environment. This buffer is empty unless the call is from an NACD (networked ACD).
4	current location (DN)	DN to which the IVR application is connected. If the transfer was made to an Automatic Call Distribution (ACD) DN, this buffer contains the ACD DN and Buffer 5 contains the ACD position.
5	ACD position	Position ID within the ACD DN. This field is empty until the call is offered to an ACD position.

Table 5-6
Reply codes for Function code 2

Reply code	Meaning	Results
0	Success	Answered. IVR is connected to the destination DN. The caller is on hold.
1	Failure	For simple failures like Invalid DN, IVR remains connected to the caller. Severe errors, such as the retrieve-call failure, cause IVR to be disconnected.

Table 5-6 (continued)
Reply codes for Function code 2

Reply code	Meaning	Results
2	Busy	The caller is re-connected to IVR.
3	Ring and no answer	The caller is re-connected to IVR.

CompleteSupervisedTransfer .ccipxfer (Function code 3)

This function completes a supervised transfer that was initiated with InitSupervisedTransfer function. The inputs indicate whether to complete the transfer or to retrieve the original caller.

If the function is successful, one of the following occurs:

- The original caller is connected with the destination DN specified in the InitSupervisedTransfer, and IVR is disconnected.
- The original caller is re-connected to IVR and the destination DN is disconnected.

If the function is unsuccessful, the result depends on the reply code (refer to Table 5-9).

Table 5-7
Input buffers for Function code 3

Buffer	Content	Description
1	action	0 = complete the transfer, 1=retrieve original call

Table 5-8
Output buffers for Function code 3

Buffer	Content	Description
1	return code	0 = success, 6 = request disallowed (CCIP not in RUNNING state), or a Meridian Link error number.

Table 5-9
Reply codes for Function code 3

Reply code	Meaning	Results
0	Success	The caller is connected to the destination DN, and IVR is disconnected or the call is retrieved.
1	Failure	The call is lost.

FastTransfer .ccipxfer (Function code 4)

This function performs a fast transfer. A fast transfer is a one-step transfer, and it is faster than a two-step, supervised transfer.

If the transfer is successful, the original caller is transferred to the destination DN and IVR is disconnected.

If an invalid DN is passed, the return code is CCIP error 9445 and IVR is still connected to the caller. If the transfer is unsuccessful for any other reason, the call is lost.

Table 5-10
Input buffers for Function code 4

Buffer	Content	Description
1	destination DN	The DN to which the call is transferred.
2	timeout units	0 = rings, 1 = minutes. The timeout determines how long CCIP waits for the call to be answered before recovering it.
3	timeout value	A value from 1 to 32, indicating the length of timeout in either rings or minutes.
4	destination DN type	A decimal value identifying the DN type. Enter a number from 0 to 30. For a list of DN types, refer to Table E-1, on page E-1. If the buffer is empty, DN type 8 (Internal DN) is assumed.

Table 5-11
Output buffers for Function code 4

Buffer	Content	Description
1	return code	0 = success, 4 = timeout, 6 = request disallowed, (CCIP not in RUNNING state), or a Meridian Link error number.

Table 5-12
Reply codes for Function code 4

Reply code	Meaning	Result
0	Success	The caller is transferred to the destination DN.
1	Failure	Refer to the return code.

InitConference .ccipconf (Function code 5)

This function initiates a digital call conference. The conference is completed by the CompleteConference function.

If the function is successful, the IVR application is connected to the destination DN and the original caller is placed on hold. IVR can then play prompts (using the agent whisper feature) and complete the conference, or retrieve the original caller, using the CompleteConference function.

If this function is unsuccessful, the result depends on the reply code (refer to Table 5-15).

Table 5-13
Input buffers for Function code 5

Buffer	Content	Description
1	destination DN	The DN with which the call is conferenced.
2	timeout units	0 = rings, 1 = minutes. The timeout determines how long CCIP waits for the call to be answered before recovering it.

Table 5-13 (continued)
Input buffers for Function code 5

Buffer	Content	Description
3	timeout value	A value from 1 to 32, indicating the length of timeout in either rings or minutes.
4	destination DN type	A decimal value identifying the DN type. Enter a number from 0 to 30. For a list of DN types, refer to Table E-1, on page E-1. If the buffer is empty, DN type 8 (Internal DN) is assumed.

Table 5-14
Output buffers for Function code 5

Buffer	Content	Description
1	return code	0 = success,1 = busy, 2 = ring-no-answer, 3 = caller abandoned, 4 = timeout, 6 = request disallowed (CCIP not in RUNNING state), or a Meridian Link error number. If reply code is 1 (Failure), then only Buffer 1 (Return code) is defined; all other buffers are empty.
2	Call ID	A 32-bit number that uniquely defines the call.
3	Network Call ID	A 32-bit number that uniquely identifies a call in a network environment. This buffer is empty unless the call is from a networked Automatic Call Distribution (NACD).
4	current location (DN)	The DN to which the IVR application is connected. If the conference was made to an ACD DN, then this buffer contains the ACD DN and Buffer 5 contains the ACD position.
5	ACD position	Position ID within the ACD DN. This field is empty until the call is offered to an ACD position.

Table 5-15
Reply codes for Function code 5

Reply code	Meaning	Results
0	Answered (success)	IVR is connected to the destination DN and the caller is on hold.
1	Failure	For simple failures like Invalid DN, IVR is still connected to the caller. Severe errors, such as the retrieve call failure, cause IVR to be disconnected.
2	Busy	The caller is re-connected to IVR.
3	RingNoAnswer	The caller is re-connected to IVR.

CompleteConference .ccipconf (Function code 6)

This function completes a conference that began earlier with the InitConference function. The inputs indicate whether to complete the conference or retrieve the original caller.

If the function is successful, one of the following occurs:

- The original caller and IVR are connected with the destination DN specified in the InitConference.
- The original caller is re-connected to IVR and the destination DN is disconnected.

If the function is unsuccessful, the result depends on the reply code (refer to Table 5-18.)

Table 5-16
Input buffers for Function code 6

Buffer	Content	Description
1	action	0 = complete the conference, 1 = retrieve original call

Table 5-17
Output buffers for Function code 6

Output	Content	Description
1	return code	0 = success, 6 = request disallowed (CCIP not in RUNNING state), or a Meridian Link error number.

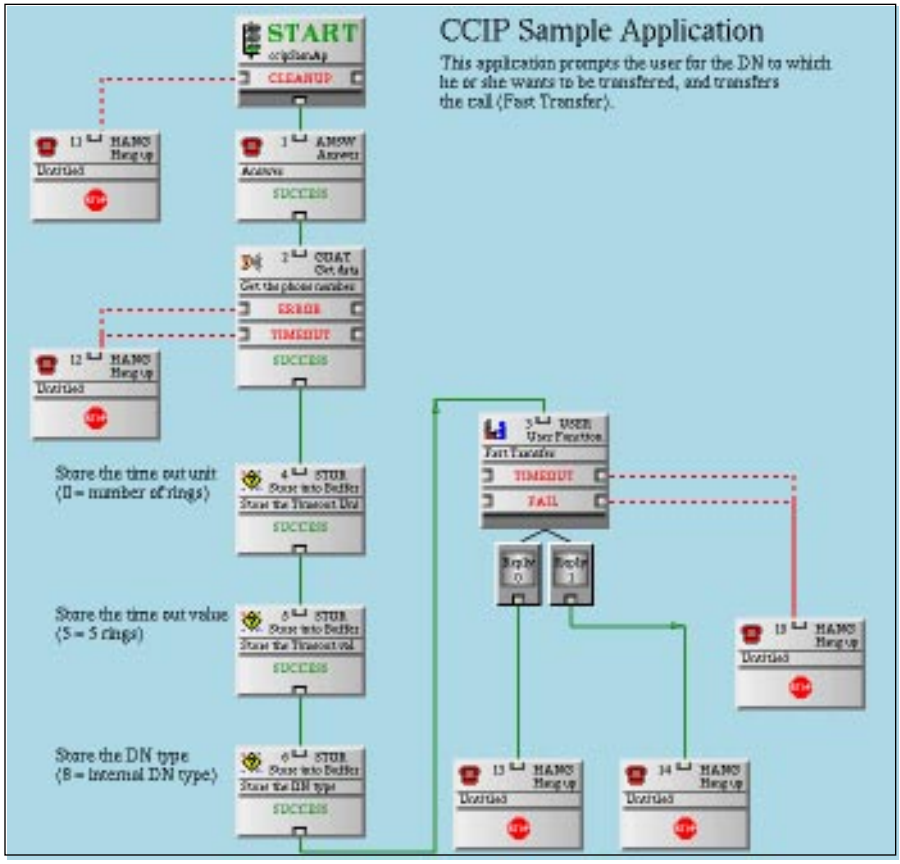
Table 5-18
Reply codes

Reply code	Meaning	Results
0	Success	The caller and IVR are connected to the destination DN or the call is retrieved.
1	Failure	The call is lost. The return code is one of the following: 3—Caller abandoned 99—User function aborted complete because CCIP shutdown was started. Meridian Link error number.

Sample application

The sample application illustrated in Figure 5-1 receives an incoming call, prompts the user for the DN to which he or she wants to be transferred, and uses the FastTransfer user function to transfer the call. This application might be useful if no direct inward dial DNs are available, and incoming calls arrive on IVR DNs.

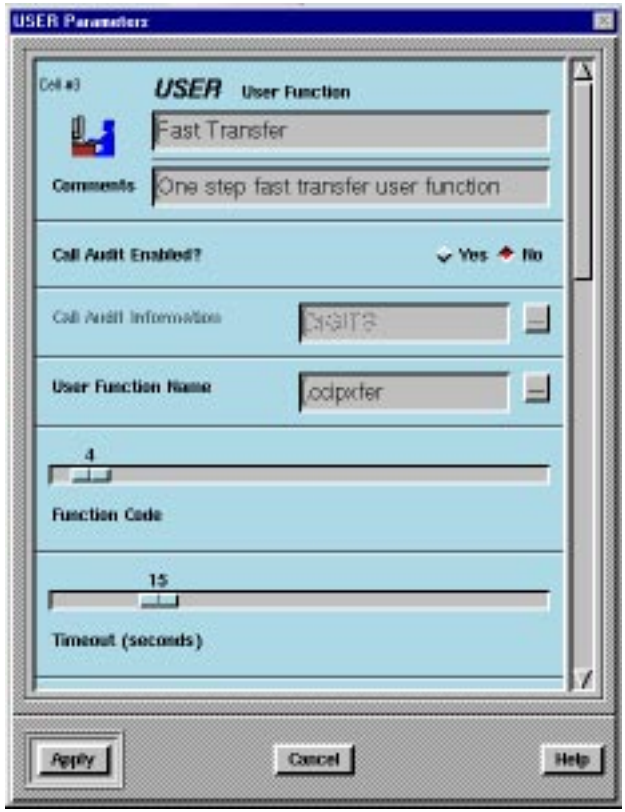
Figure 5-1:
Sample application



The call arrives, and if it is successfully retrieved, the user is prompted for a DN. The timeout units, timeout interval, and DN type are stored, and the FastTransfer user function is invoked. It transfers the call using the DN number entered by the user and the stored timeout units, timeout interval, and DN type. If a failure occurs at any time during the application, the call is hung up.

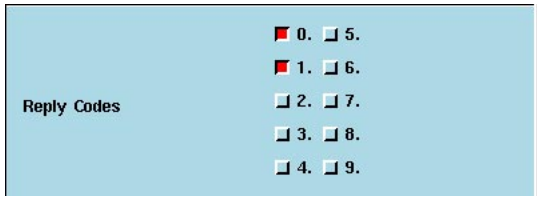
The FastTransfer user function is set up as illustrated in Figure 5-2.

Figure 5-2:
FastTransfer user function



Note that the User Function Name is set to .ccipxfer, and the Function Code is set to 4. Reply codes 0 and 1 are selected (refer to Figure 5-3).

Figure 5-3:
Reply codes

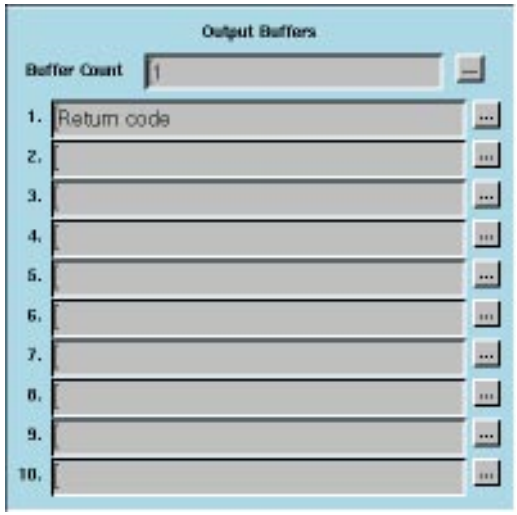


Input buffers 0 to 4 are configured (refer to Figure 5-4).

Figure 5-4:
Input buffers

Output buffer 0 is configured (refer to Figure 5-5).

Figure 5-5:
Output buffers



Appendix A: Troubleshooting

This appendix provides instructions for troubleshooting problems with the Call Center Integration Package (CCIP) start-up. It also describes useful troubleshooting tools and the error messages generated by CCIP.

Troubleshooting problems

This section explains how to solve problems that might occur when you are using CCIP.

CCIP fails to start up

This section explains how to isolate the problem if CCIP fails to start.

When CCIP starts, the backbone process starts the server processes. As each server process starts up, it goes to IDLE state. Then the Call Center Controller (CCC) initializes each of the servers, in this order:

- Database server
- Meridian Link server
- Active Calls Table (ACT) server
- Interactive Voice Response (IVR) server

As each server is initialized, its status changes first to STARTING, and then to RUNNING.

Each server starts only if the previous server was initialized successfully. If a server fails to start, the CCC returns all servers to IDLE state.

When CCIP fails to start you must find out which server failed to initialize. To do so, follow the instructions in Procedure A-1.

Procedure A-1
Identifying the server that failed to initialize

1 Check the Open IVR System Console to find out which server failed to initialize.

2 Increase the tracing level for this server (refer to “CCIP Error and Event Log” on page A-7).

3 Start CCIP again.

4 View the CCIP error log.

5 Refer to the troubleshooting procedure for the server that failed to initialize. The following table indicates the procedure you should use for each server.

Server	Procedure
Database server	Procedure A-2, “Troubleshooting Database server start-up problems,” on page A-2.
Meridian Link server	Procedure A-3, “Troubleshooting Meridian Link server start-up problems,” on page A-3.
ACT server	Procedure A-4, “Troubleshooting ACT server start-up problems,” on page A-5.
IVR server	Procedure A-5, “Troubleshooting IVR server start-up problems,” on page A-5.

Procedure A-2
Troubleshooting Database server start-up problems

1 Log in to the Application Processor (AP) as root.

2 Check to make sure that the cciplogd process is running by entering

ps -ef | grep cciplogd

3 If the process is not running, view the severity file (located in $VOICE_HOME/ui_lang/$VOICE_LANG) with a text editor. Make sure that it contains the CCIP error numbers (9000-9600).

4 If the process is running, follow these steps.

a Make sure that the /etc/services file contains a cciplogd entry. If it does not, reinstall CCIP.

b Make sure that the syslog.conf file in the /etc directory contains the following entries:

```
local1.debug        /u/nortel/ccip/log/ccip_loglog
local0.debug        /u/nortel/ccip/log/ccip_hislog
local2.debug        /u/nortel/ccip/log/ccip_sumlog
```

If they are not present, enter them manually.

5 Determine the process ID of the syslogd process by entering

ps -ef | grep syslog

6 Then kill the process by entering

kill -9 *nnnn*

where *nnnn* is the process ID.

7 Restart the process by entering

syslogd &

8 Restart CCIP by choosing Reset CCIP from the Main Menu of the CCIP administration utility.

9 Check the parameters in the DATAS configuration block in ccip.ini to make sure that they are configured correctly (refer to “DATAS” on page C-8).

Procedure A-3
Troubleshooting Meridian Link server start-up problems

1 Set the trace level for the Meridian Link server to 6, following the instructions in “CCIP Error and Event Log” on page A-7.

2 Start CCIP by choosing Start CCIP from the Main menu of the CCIP administration utility.

3 View the Error Log by choosing Error Log from the View menu.

4 Look for log entries with the server name “links” that include a goto_state message, for example:

1996/11/12 16:33:36 links L5 0 (1550):goto_state: 0 ‘START’

The Meridian Links server passes through several states as it comes up. If the server enters the FAIL state, find out what state it was in before it failed.

Table A-1
Meridian Link server states

State	Description
START	The server has sent a registration request to Meridian Link.
WAITING	The server is waiting for a response from Meridian Link. If no response is received, the server goes to TIMEOUT state.
REREG	If CCIP did not de-register with Meridian Link the last time it shut down, this message is displayed. Meridian Link de-registers and re-registers CCIP.
DNREG	The Meridian Link server was trying to register IVR and agent DNs. If the server fails after DN registration, make sure that you have configured your IVR and agent DNs correctly (refer to “Configuring IVR DNs” on page 3-7 and “Configuring Agent DNs” on page 3-9). Configure only a few of your IVR channels, and try starting CCIP again. Repeat this procedure to isolate the DNs that are failing. When you determine which DNs are failing, ensure that they are configured correctly on the switch (refer to Appendix F, “Meridian 1 switch configuration”).
LOGIN	The Meridian Link server is logging on all IVR DNs. If a DN is already logged on, CCIP reports an error, and continues. If login fails, ensure that the DNs are configured correctly on the switch (refer to Appendix F, “Meridian 1 switch configuration”).
SUCCESS	The server has started up.

Table A-1 (continued)
Meridian Link server states

State	Description
TIMEOUT	The server has not received a response from Meridian Link within the required time. Check the network connection between Meridian Link and the AP.
FAIL	The previous step in start-up failed. Check the last goto_state message to find out what state the server was in.

5 Check the parameters in the LINKS configuration block in ccip.ini to make sure that they are configured correctly (refer to “LINKS” on page C-12).

Procedure A-4
Troubleshooting ACT server start-up problems

1 Check the following parameters in ccip.ini, to ensure that they are configured correctly: call_history_size, call_history_max, call_summary_size, history_location, summary_location, hisfiledir, hisfilename, sumfiledir, sumfilename (refer to “ACTS” on page C-15).

2 Check the remaining parameters in the ACTS configuration block in ccip.ini to make sure that they are configured correctly.

Procedure A-5
Troubleshooting IVR server start-up problems

1 Verify that the “s” attribute is set for the IVR server executable file. To do so, make the /u/nortel/ccip/bin directory the working directory by entering

cd /u/nortel/ccip/bin

2 Then display the attributes for the IVR server executable file by entering

ls -l ivrs

The attributes for the ivrs file should be: -rwsr-sr-x

3 If the file does have the “s” attribute, go to step 5. Otherwise, log in as root and continue with the next step.

4 Change the attributes for the ivrs file by entering

./setivrs.sh

5 Check the parameters in the IVRS configuration block in ccip.ini to make sure that they are configured correctly (refer to “IVRS” on page C-19).

CCIP reports LINKS ping failure

If the connection to Meridian Link is lost and then restored (for example, if Meridian Link goes down, or the network connection is lost), the Call Center Controller (CCC) logs the following error three times:

LINKS PING Failed

After the third error, no more errors will be logged. The following problems also occur under these conditions:

- The .ccipinfo user function reports errors or gives the wrong information.
- The .ccipxfer and .ccipconf user functions report the following error:

  Error : An IVRS Sequence Timer Has Fired

When these problems occur, you must reset CCIP. To do so, from the Main menu of the CCIP administration utility, choose Reset CCIP.

Agents do not receive transferred calls

If agents hear silence when they pick up calls transferred from CCIP, the agent is not configured correctly. Check the agent configuration (refer to “Configuring Agent DNs” on page 3-9”).

Troubleshooting tools

This section describes some tools that are useful in troubleshooting problems with CCIP. These tools include

- CCIP Error and Event Log—This log contains all error and trace messages generated by CCIP.
- CCIP commands—Two utilities are provided, stopccip.sh, which initiates a forceful shutdown, and killccip.sh, which terminates all processes.

CCIP Error and Event Log

CCIP logs error and trace messages to a log file. To view this file, select Error Log from the View menu. For detailed information about the messages in the log, refer to the section “Error Messages” on page A-10.

You can control the amount of information written to the log, either temporarily (until the next time CCIP restarts), or permanently (until next time you change the trace level).

To change the trace level temporarily, refer to Procedure A-6, “Changing the trace level temporarily,” on page A-7. To change the trace level permanently, refer to Procedure A-7, “Changing the trace level permanently,” on page A-8.

CAUTION!
Risk of system performance degradation
Tracing increases the number of messages transmitted between servers, and thus can degrade system performance.

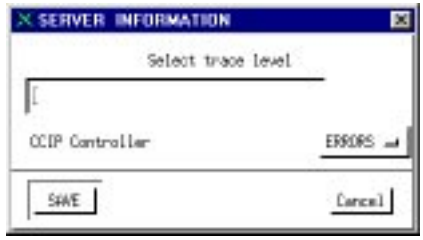
Procedure A-6
Changing the trace level temporarily

1 From the View menu, choose Set Error Log Trace Level.

The Tracing Level window appears.

2 Select the server for which you want to configure tracing, and click the EDIT... button.

The Set Error Log Trace window appears.



3 From the pull-down menu, select OFF if you don't want to log system activity. Select ERRORS to log errors only. Select EVENTS to log all error and trace messages. (Trace messages are generated when a request arrives at a CCIP server. They also include Meridian Link messages.)

4 Click the SAVE button.

The CONFIGURATION window appears. The changes take effect immediately.

Procedure A-7
Changing the trace level permanently

1 From the Config menu, choose Tracing Level.

The Tracing Level window appears.

2 Select the server for which you want to configure tracing, and click the EDIT... button.

The Set Trace window for the appropriate server appears.

3 Enter a number from 0 to 6. Enter 0 if you do not want to trace activity by this server. Enter 1 if you want to log only error messages. Enter 2 to log error and trace messages. (Trace messages are generated when a request arrives at a CCIP server. They also include Meridian Link messages.) Enter a number from 3 to 6 if you want to log increasingly detailed debug messages. Only use the debug options during testing. They are not supported for live applications.

4 Click the SAVE button.

The CONFIGURATION window appears.

5 Click the CLOSE button.

6 Restart CCIP by choosing Reset CCIP from the Main menu.

CCIP commands

When you install CCIP, the following utilities are also installed. These utilities are useful for troubleshooting CCIP problems.

Utility	Description
stopccip.sh	This script does a forceful shutdown of CCIP. It attempts to set all servers to IDLE state, and then stops all processes.
killccip.sh	This script terminates all CCIP server processes. This script might leave the Meridian Link association active.

Error Messages

CCIP handles error logging in the same way as Open IVR. Individual CCIP servers log errors to the Error Log. Each log entry contains an error number, a severity code, and message text. This section describes error numbers and severity codes, and lists all error messages, with recommended actions.

Error numbers

Each CCIP server generates error numbers within a specific range. The following table lists the ranges and the servers that generate them.

Range	Server
9000 - 9099	Active Call Table (ACT) server
9100 - 9199	Database server
9200 - 9299	Call Centre Controller (CCC) server
9300 - 9399	IVR server
9400 - 9499	Meridian Link server
9500 - 9599	User Functions

Severity codes

Each error has also been assigned a number from 0 to 3 that identifies its severity. The following table explains the severity codes.

Severity code	Meaning
0	Advisory. Information only. System operation is not affected.
1	Minor. The problem can be resolved by the user.
2	Major. The problem cannot be resolved by the user, but it will not cause CCIP to stop operating.
3	Critical. The error causes the system to stop operating.

Errors

This section lists error messages by server.

9000 Active Calls Table server errors

9000 Couldn't find ini file

Severity: 2 (Major)
Explanation: The program is installed incorrectly, or the files are corrupted.
Action: If you have a backup of your ccip.ini file, restore it. If not, reinstall and reconfigure CCIP. If this does not solve the problem, contact your service representative.

9001 Invalid event(0) in ReceiveCallInfo function

Severity: 1 (Minor)
Explanation: The Meridian Link server sent the ACT server information about a RequestCompleted event. The ACT server does not track these events.
Action: No action required.

9002 Invalid event (?) in ReceiveCallInfo function

Severity: 1 (Minor)
Explanation: The Meridian Link server sent the ACT server information about an event that the ACT server does not track.
Action: No action required.

9003 S/D Flag set Put Refused

Severity: 0 (Advisory)
Explanation: The ACT server has received a request to write data to the Active Calls Table while CCIP is performing a forceful shutdown.
Action: No action required.

9004 Out of Memory Error Creating InfClass Object

Severity: 2 (Major)
Explanation: The program ran out of memory.

Action: Unload all CCIP applications on the Application Processor (AP), stop CCIP, and reboot. If the problem recurs, ensure that you have sufficient memory on the AP (refer to "Memory requirements" on page 2-2). If the problem persists, contact your service representative.

9005 Get CallInfo Error (spec'd key for keytype N/F)

Severity: 0 (Advisory)
Explanation: No callinfo for key.
Action: This might be the expected result; check your call-flow application to find out whether an error has occurred.

9006 Remove CallInfo Error (spec'd key for keytype N/F)

Severity: 0 (Advisory)
Explanation: No callinfo for key.
Action: No action required.

9007 Bad key_type for CallInfo search

Severity: 0 (Advisory)
Explanation: The IVR server has asked for call information from the ACT server using a key_type that is not defined.
Action: No action required.

9008 Initialize Not Allowed

Severity: 0 (Advisory)
Explanation: The ACT server was in an invalid state to call Initialize.
Action: No action required.

9009 Out of Memory Error Creating History B/U Timer

Severity: 2 (Major)
Explanation: The program ran out of memory.
Action: Unload all CCIP applications on the Application Processor (AP), stop CCIP, and reboot. If the problem recurs, ensure that you have sufficient memory on the AP (refer to "Memory requirements" on page 2-2). If the problem persists, contact your service representative.

9010 Out of Memory Error Creating Summary B/U Timer

Severity: 2 (Major)

Explanation: The program ran out of memory.
Action: Unload all CCIP applications on the Application Processor (AP), stop CCIP, and reboot. If the problem recurs, ensure that you have sufficient memory on the AP (refer to "Memory requirements" on page 2-2). If the problem persists, contact your service representative.

9011 Out of Memory Error Creating log Summary Timer
Severity: 2 (Major)
Action: Unload all CCIP applications on the Application Processor (AP), stop CCIP, and reboot. If the problem recurs, ensure that you have sufficient memory on the AP (refer to "Memory requirements" on page 2-2). If the problem persists, contact your service representative.

9012 Shutdown Not Allowed
Severity: 0 (Advisory)
Explanation: The ACT server was in an invalid state to call Shutdown.
Action: No action required.

9013 History B/U Timer not Found (for deletion)
Severity: 1 (Minor)
Explanation: Internal ACT server error.
Action: Restart CCIP by choosing Reset CCIP from the Main menu of the CCIP administration utility. If the problem persists, contact your service representative.

9014 Summary B/U Timer not Found (for deletion)
Severity: 1 (Minor)
Explanation: Internal ACT server error.
Action: Restart CCIP by choosing Reset CCIP from the Main menu of the CCIP administration utility. If the problem persists, contact your service representative.

9015 log Summary Timer not Found (for deletion
Severity: 1 (Minor)
Explanation: Internal ACT server error.
Action: Restart CCIP by choosing Reset CCIP from the Main menu of the CCIP administration utility. If the problem persists, contact your service representative.

9016 CourtesyShutdown Not Allowed

Severity: 0 (Advisory)

Explanation: The ACT server was in an invalid state to call CourtesyShutdown.

Action: No action required.

9017 ReceiveCallInfo Not Allowed

Severity: 0 (Advisory)

Explanation: The ACT server was in an invalid state to call ReceiveCallInfo.

Action: No action required.

9018 logSummary Error logging to Text File

Severity: 1 (Minor)

Explanation: Internal ACT server error.

Action: Ensure that sufficient disk space is available on the Application Processor (AP). If the AP is out of disk space, delete unnecessary files and reduce the space used by the log files. For more information about log files and their disk space usage, refer to "Disk requirements" on page 2-2.

If the AP has sufficient disk space, ensure that the sumfiledir and sumfilename are correct in ccip.ini (refer to "ACTS" on page C-15). If they are correct, contact your service representative.

9019 logHistory Error logging to Text File

Severity: 1 (Minor)

Explanation: Internal ACT server error.

Action: Ensure that sufficient disk space is available on the Application Processor (AP). If the AP is out of disk space, delete unnecessary files and reduce the space used by the log files. For more information about log files and their disk space usage, refer to "Disk requirements" on page 2-2.

If the AP has sufficient disk space, ensure that the hisfiledir and hisfilename are correct in ccip.ini (refer to "ACTS" on page C-15). If they are correct, contact your service representative.

9020 Error opening logSummary Text File

Severity: 1 (Minor)

Explanation: Internal ACT server error.

Action: Ensure that sufficient disk space is available on the Application Processor (AP). If the AP is out of disk space, delete unnecessary files and reduce the space used by the log files. For more information about log files and their disk space usage, refer to “Disk requirements” on page 2-2.

If the AP has sufficient disk space, ensure that the sumfiledir and sumfilename are correct in ccip.ini (refer to “ACTS” on page C-15). If they are correct, contact your service representative.

9021 Error creating logSummary Text File

Severity: 1 (Minor)

Explanation: Internal ACT server error.

Action: Ensure that sufficient disk space is available on the Application Processor (AP). If the AP is out of disk space, delete unnecessary files and reduce the space used by the log files. For more information about log files and their disk space usage, refer to “Disk requirements” on page 2-2.

If the AP has sufficient disk space, ensure that the sumfiledir and sumfilename are correct in ccip.ini (refer to “ACTS” on page C-15). If they are correct, contact your service representative.

9022 Error opening logHistory Text File

Severity: 1 (Minor)

Explanation: Internal ACT server error.

Action: Ensure that sufficient disk space is available on the Application Processor (AP). If the AP is out of disk space, delete unnecessary files and reduce the space used by the log files. For more information about log files and their disk space usage, refer to “Disk requirements” on page 2-2.

If the AP has sufficient disk space, ensure that the hisfiledir and hisfilename are correct in ccip.ini (refer to “ACTS” on page C-15). If they are correct, contact your service representative.

9023 Error creating logHistory Text File

Severity: 1 (Minor)

Explanation: Internal ACT server error.

Action: Ensure that sufficient disk space is available on the Application Processor (AP). If the AP is out of disk space, delete unnecessary files and reduce the space used by the log files. For more information about log files and their disk space usage, refer to "Disk requirements" on page 2-2.

If the AP has sufficient disk space, ensure that the hisfiledir and hisfilename are correct in ccip.ini (refer to "ACTS" on page C-15). If they are correct, contact your service representative.

9024 Error writing to logSummary Text File

Severity: 1 (Minor)

Explanation: Internal ACT server error.

Action: Ensure that sufficient disk space is available on the Application Processor (AP). If the AP is out of disk space, delete unnecessary files and reduce the space used by the log files. For more information about log files and their disk space usage, refer to "Disk requirements" on page 2-2.

If the AP has sufficient disk space, ensure that the sumfiledir and sumfilename are correct in ccip.ini (refer to "ACTS" on page C-15). If they are correct, contact your service representative.

9025 Error writing to logHistory Text File

Severity: 1 (Minor)

Explanation: Internal ACT server error.

Action: Ensure that sufficient disk space is available on the Application Processor (AP). If the AP is out of disk space, delete unnecessary files and reduce the space used by the log files. For more information about log files and their disk space usage, refer to "Disk requirements" on page 2-2.

If the AP has sufficient disk space, ensure that the hisfiledir and hisfilename are correct in ccip.ini (refer to "ACTS" on page C-15). If they are correct, contact your service representative.

9026 Error renaming logHistory Text File

Severity: 1 (Minor)
Explanation: Internal ACT server error.
Action: Restart CCIP by choosing Reset CCIP from the Main menu of the CCIP administration utility. If the problem recurs, contact your service representative.

9027 Error creating new logHistory Text File

Severity: 1 (Minor)
Explanation: Internal ACT server error.
Action: Ensure that sufficient disk space is available on the Application Processor (AP). If the AP is out of disk space, delete unnecessary files and reduce the space used by the log files. For more information about log files and their disk space usage, refer to “Disk requirements” on page 2-2.

If the AP has sufficient disk space, ensure that the hisfiledir and hisfilename are correct in ccip.ini (refer to “ACTS” on page C-15). If they are correct, contact your service representative.

9028 Error renaming logSummary Text File

Severity: 1 (Minor)
Explanation: Internal ACT server error.
Action: Restart CCIP by choosing Reset CCIP from the Main menu of the CCIP administration utility. If the problem recurs, contact your service representative.

9029 Error creating new logSummary Text File

Severity: 1 (Minor)
Explanation: Internal ACT server error
Action: Ensure that sufficient disk space is available on the Application Processor (AP). If the AP is out of disk space, delete unnecessary files and reduce the space used by the log files. For more information about log files and their disk space usage, refer to “Disk requirements” on page 2-2.

If the AP has sufficient disk space, ensure that the sumfiledir and sumfilename are correct in ccip.ini (refer to “ACTS” on page C-15). If they are correct, contact your service representative.

9030 Error in Put() CallId zero length

Severity: 2 (Major)
Explanation: Internal ACT server error.
Action: Contact your service representative.

9031 Error in Put() AcdPosId zero length

Severity: 2 (Major)
Explanation: The configuration is incorrect.
Action: Contact your service representative.

9032 Bind to LINKS Failed

Severity: 2 (Major)
Explanation: CCIP environment error.
Action: Ensure that the CCIP environment variables are set correctly in the .profile file. CCIP requires the following environment variables, which are normally set up during installation:

BBDIR=*ccip_directory*/bb1.1/production/bin
CCIP_HOME=*ccip_directory*
export BBDIR CCIP_HOME

where *ccip_directory* is the directory in which ccip is located (by default /u/nortel/ccip)

After modifying .profile, log out and log back in as nortel. Then, reset CCIP by choosing Reset CCIP from the Main menu of the CCIP administration utility.

If the environment variables are set up correctly, ensure that you have configured the Meridian Link connection correctly. For detailed instructions, refer to "Configuring Meridian Link parameters" on page 3-13.

9033 CCIP_HOME environment variable not set

Severity: 2 (Major)
Explanation: The configuration is incorrect.
Action: Ensure that the $CCIP_HOME environment variable is set correctly in the .profile file. The .profile file should include the following commands:

CCIP_HOME=*ccip_directory*
export BBDIR CCIP_HOME

where *ccip_directory* is the directory in which ccip is located (by default /u/nortel/ccip)

After modifying .profile, log out and log back in as nortel. Then, reset CCIP by choosing Reset CCIP from the Main menu of the CCIP administration utility.

9034 Error in Put() NetworkId zero length

Severity: 2 (Major)
Explanation: The configuration is incorrect.
Action: Check your Meridian Link configuration.

9035 Update CallInfo Error (spec'd key for keytype N/F)

Severity: 0 (Advisory)
Explanation: No callinfo for key.
Action: No action required.

9036 Error Forking BackUp Process

Severity: 2 (Major)
Explanation: Internal ACT server error.
Action: Restart CCIP by choosing Reset CCIP from the Main menu of the CCIP administration utility. If the problem persists, contact your service representative.

9037 Error Creating Timer

Severity: 2 (Major)
Explanation: Internal ACT server error.
Action: Unload all CCIP applications on the Application Processor (AP), stop CCIP, and reboot. If the problem recurs, ensure that you have sufficient memory on the AP (refer to "Memory requirements" on page 2-2). If the problem persists, contact your service representative.

9038 Error Adding Timer

Severity: 2 (Major)
Explanation: Internal ACT server error.
Action: Unload all CCIP applications on the Application Processor (AP), stop CCIP, and reboot. If the problem recurs, ensure that you have sufficient memory on the AP (refer to "Memory requirements" on page 2-2). If the problem persists, contact your service representative.

9039 Error Removing Timer

Severity: 2 (Major)
Explanation: Internal ACT server error.
Action: Restart CCIP by choosing Reset CCIP from the Main menu of the CCIP administration utility. If the problem persists, contact your service representative.

9040 Error Finding Timer

Severity: 2 (Major)
Explanation: Internal ACT server error.
Action: Restart CCIP by choosing Reset CCIP from the Main menu of the CCIP administration utility. If the problem persists, contact your service representative.

9100 Database server errors

9100 Initialize Not Allowed

Severity: 0 (Advisory)
Explanation: Database server was in an invalid state to call Initialize.
Action: No action required.

9101 Couldn't find INI file

Severity: 2 (Major)
Explanation: The program is installed incorrectly, or the files are corrupted.
Action: If you have a backup of your ccip.ini file, restore it. If not, reinstall and reconfigure CCIP. If this does not solve the problem, contact your service representative.

9102 Error Starting Log Daemon

Severity: 2 (Major)
Explanation: The configuration is incorrect.
Action: Check the parameters in the DATAS configuration block in ccip.ini (for more information, refer to "DATAS" on page C-8). If you cannot resolve the problem, contact your service representative.

9103 Shutdown Not Allowed

Severity: 0 (Advisory)
Explanation: The Database server was in an invalid state to call Shutdown.

Action: No action required. The server will shut down when it reaches a state from which shutdown can be initiated. If the server does not shut down, you can force a shutdown with the killccip command (refer to "CCIP commands" on page A-9).

9104 Error Opening ccip pid file (for kill)

Severity: 1 (Minor)
Explanation: Internal Database server error.
Action: Ensure that the pid_location and pid_filename parameters are set correctly in ccip.ini (refer to "DATAS" on page C-8). If they are correct, contact your service representative.

9105 Error Reading ccip pid file (for kill)

Severity: 1 (Minor)
Explanation: Internal Database server error.
Action: Ensure that the pid_location and pid_filename parameters are set correctly in ccip.ini (refer to "DATAS" on page C-8). If they are correct, contact your service representative.

9106 Error Stopping/Killing Log Daemon

Severity: 1 (Minor)
Explanation: The configuration is incorrect.
Action: Contact your service representative.

9107 Courtesy Shutdown Not Allowed

Severity: 0 (Advisory)
Explanation: The Database server was in an invalid state to call CourtesyShutdown.
Action: No action required. The server will shut down when it reaches a state from which shutdown can be initiated. If the server does not shut down, you can force a shutdown with the killccip command (refer to "CCIP commands" on page A-9).

9108 Error renaming Errorlog Text File

Severity: 1 (Minor)
Explanation: Internal Database server error.
Action: Contact your service representative.

9109 Error creating new Errorlog Text File

Severity: 1 (Minor)

Explanation: Internal Database server error.

Action: Ensure that sufficient disk space is available on the Application Processor (AP). If the AP is out of disk space, delete unnecessary files and reduce the space used by the log files. For more information about log files and their disk space usage, refer to “Disk requirements” on page 2-2.

If the AP has sufficient disk space, ensure that the errlog_dir and errlog_file are correct in ccip.ini (refer to “DATAS” on page C-8). If they are correct, contact your service representative.

9110 CCIP_HOME environment variable not set

Severity: 2 (Major)

Explanation: The configuration is incorrect.

Action: Ensure that the $CCIP_HOME environment variable is set correctly in the .profile file. The .profile file should include the following commands:

CCIP_HOME=*ccip_directory*
export BBDIR CCIP_HOME

where *ccip_directory* is the directory in which ccip is located (by default /u/nortel/ccip)

After modifying .profile, log out and log back in as nortel. Then, reset CCIP by choosing Reset CCIP from the Main menu of the CCIP administration utility.

9111 VOICE_HOME environment variable not set

Severity: 2 (Major)

Explanation: The configuration is incorrect.

Action: Ensure that the CCIP environment variables are set correctly in the .profile file. The .profile file should include the following commands:

VOICE_HOME=*home_directory*
VOICE_LANG=*language_directory*
NSLPATH=$VOICE_HOME/ui_lang/$VOICE_LANG
BBDIR=*ccip_directory*/bb1.1/production/bin
CCIP_HOME=*ccip_directory*
export VOICE_HOME VOICE_LANG NLSPATH BBDIR CCIP_HOME

where *home_directory* is the directory in which ccip is located (by default, it is /u/nortel); *language_directory* is the directory containing the localized catalog file (by default, it is en_US); *ccip_directory* is the directory in which ccip is located (by default /u/nortel/ccip)

After modifying .profile, log out and log back in as nortel. Then, reset CCIP by choosing Reset CCIP from the Main menu of the CCIP administration utility.

9112 VOICE_LANG environment variable not set

Severity: 2 (Major)

Explanation: The configuration is incorrect.

Action: Ensure that the CCIP environment variables are set correctly in the .profile file. The .profile file should include the following commands:

VOICE_HOME=*home_directory*
VOICE_LANG=*language_directory*
NSLPATH=$VOICE_HOME/ui_lang/$VOICE_LANG
BBDIR=*ccip_directory*/bb1.1/production/bin
CCIP_HOME=*ccip_directory*
export VOICE_HOME VOICE_LANG NLSPATH BBDIR CCIP_HOME

where *home_directory* is the directory in which ccip is located (by default, it is /u/nortel); *language_directory* is the directory containing the localized catalog file (by default, it is en_US); *ccip_directory* is the directory in which ccip is located (by default /u/nortel/ccip)

After modifying .profile, log out and log back in as nortel. Then, reset CCIP by choosing Reset CCIP from the Main menu of the CCIP administration utility.

9113 Error getting uname : Errors Logging to TXTFILE

Severity: 1 (Minor)

Explanation: The configuration is incorrect.

Action: Ensure that the CCIP environment variables are set correctly in the .profile file. The .profile file should include the following commands:

VOICE_HOME=*home_directory*
VOICE_LANG=*language_directory*
NSLPATH=$VOICE_HOME/ui_lang/$VOICE_LANG
BBDIR=*ccip_directory*/bb1.1/production/bin
CCIP_HOME=*ccip_directory*
export VOICE_HOME VOICE_LANG NLSPATH BBDIR CCIP_HOME

where *home_directory* is the directory in which ccip is located (by default, it is /u/nortel); *language_directory* is the directory containing the localized catalog file (by default, it is en_US); *ccip_directory* is the directory in which ccip is located (by default /u/nortel/ccip)

After modifying .profile, log out and log back in as nortel. Then, reset CCIP by choosing Reset CCIP from the Main menu of the CCIP administration utility.

9114 Error finding Logger Port : Using Default(4944)

Severity: 1 (Minor)

Explanation: The configuration is incorrect.

Action: Ensure that you have configured CCIP correctly (for detailed instructions, refer to"Configuring CCIP" on page 3-6). Check the parameters in ccip.ini (refer to Appendix C, "The CCIP initialization file"). If all parameters are configured correctly, log in as root and verify that /etc/services contains the following line:

cciplogd 4944/udp ccip

If this line is not present, add it. Ensure that /etc/syslog.conf contains the following lines:

local1.debug /u/nortel/ccip/log/ccip_loglog
local0.debug /u/nortel/ccip/log/cciphislog
local2.debug /u/nortel/ccip/log/sumlog

If they are not present, add them. Then, stop the syslog process by entering

ps -ef |grep syslog

This command shows you the process ID of the syslog process. Then enter

kill -16 *nnnn*

where *nnnn* is the process ID. Reset CCIP by choosing Reset CCIP from the Main menu of the CCIP administration utility.

9115 Error Creating Timer

Severity: 2 (Major)
Explanation: Internal Database server error.
Action: Unload all CCIP applications on the Application Processor (AP), stop CCIP, and reboot. If the problem recurs, ensure that you have sufficient memory on the AP (refer to "Memory requirements" on page 2-2). If the problem persists, contact your service representative.

9116 Error Adding Timer

Severity: 2 (Major)
Explanation: Internal Database server error.
Action: Unload all CCIP applications on the Application Processor (AP), stop CCIP, and reboot. If the problem recurs, ensure that you have sufficient memory on the AP (refer to "Memory requirements" on page 2-2). If the problem persists, contact your service representative.

9117 Error Removing Timer

Severity: 2 (Major)
Explanation: Internal Database server error.
Action: Restart CCIP by choosing Reset CCIP from the Main menu of the CCIP administration utility. If the problem persists, contact your service representative.

9118 Error Finding Timer

Severity: 2 (Major)
Explanation: Internal Database server error.

Action: Restart CCIP by choosing Reset CCIP from the Main menu of the CCIP administration utility. If the problem persists, contact your service representative.

9200 Call Centre Controller server errors

9200 Initialize Not Allowed

Severity: 0 (Advisory)
Explanation: The Call Center Controller was in an invalid state to call Initialize.
Action: No action required.

9201 Couldn't find inifile

Severity: 2 (Major)
Explanation: The program was installed incorrectly, or the files have been corrupted.
Action: If you have a backup of your ccip.ini file, restore it. If not, reinstall and reconfigure CCIP. If this does not solve the problem, contact your service representative.

9202 Bind with DATAS failed

Severity: 2 (Major)
Explanation: CCIP environment error.
Action: Ensure that the CCIP environment variables are set correctly in the .profile file. CCIP requires the following environment variables, which are normally set up during installation:

BBDIR=*ccip_directory*/bb1.1/production/bin
CCIP_HOME=*ccip_directory*
export BBDIR CCIP_HOME

where *ccip_directory* is the directory in which ccip is located (by default /u/nortel/ccip)

If the environment variables are set up correctly, ensure that the mapping of the executable file for the Database server is correct in ccip.ini (refer to "DATAS" on page C-7).

If you modified .profile, log out and log back in as nortel. Reset CCIP by choosing Reset CCIP from the Main menu of the CCIP administration utility.

9203 Shutdown Not Allowed

Severity: 0 (Advisory)
Explanation: The Call Center Controller was in an invalid state to call Shutdown.
Action: No action required. The server will shut down when it reaches a state from which shutdown can be initiated. If the server does not shut down, you can force a shutdown with the killccip command (refer to "CCIP commands" on page A-9).

9204 Shutting down CCIP

Severity: 0 (Advisory)
Action: No action required.

9205 CourtesyShutdown Not Allowed

Severity: 0 (Advisory)
Explanation: The Call Center Controller was in an invalid state to call CourtesyShutdown.
Action: No action required. The server will shut down when it reaches a state from which shutdown can be initiated. If the server does not shut down, you can force a shutdown with the killccip command (refer to "CCIP commands" on page A-9).

9206 Starting Courtesy Shutdown of CCIP

Severity: 0 (Advisory)
Action: No action required.

9207 Ping Not Allowed

Severity: 0 (Advisory)
Explanation: The Call Center Controller was in an invalid state to call Ping.
Action: No action required.

9208 DATAS Ping Failed (Critical Error)

Severity: 3 (Critical)
Explanation: CCIP environment error.
Action: Reset CCIP by choosing Reset CCIP from the Main menu of the CCIP administration utility. If the error recurs, contact your service representative.

9209 LINKS Ping Failed (Critical Error)

Severity: 3 (Critical)

Explanation: CCIP environment error.
Action: Reset CCIP by choosing Reset CCIP from the Main menu of the CCIP administration utility. If the error recurs, contact your service representative.

9210 ACTS Ping Failed (Critical Error)
Severity: 3 (Critical)
Explanation: CCIP environment error.
Action: Reset CCIP by choosing Reset CCIP from the Main menu of the CCIP administration utility. If the error recurs, contact your service representative.

9211 IVRS Ping Failed (Critical Error)
Severity: 3 (Critical)
Explanation: CCIP environment error.
Action: Reset CCIP by choosing Reset CCIP from the Main menu of the CCIP administration utility. If the error recurs, contact your service representative.

9212 SetTracingS Failed (Bad Server Name)
Severity: 0 (Advisory)
Explanation: CCIP environment error.
Action: Ensure that the server is configured correctly in ccip.ini (refer to Appendix C, "The CCIP initialization file.)

9213 SetTracingS Not Allowed
Severity: 0 (Advisory)
Explanation: The Call Center Controller was in an invalid state to call SetTracingS.
Action: No action required.

9214 Null Pointer:Comms to IVRS Broken
Severity: 3 (Critical)
Explanation: CCIP environment error.
Action: Reset CCIP by choosing Reset CCIP from the Main menu of the CCIP administration utility. If the error recurs, contact your service representative.

9215 Null Pointer:Comms to ACTS Broken
Severity: 3 (Critical)
Explanation: CCIP environment error.

Action: Reset CCIP by choosing Reset CCIP from the Main menu of the CCIP administration utility. If the error recurs, contact your service representative.

9216 Null Pointer:Comms to LINKS Broken

Severity: 3 (Critical)
Explanation: CCIP environment error.
Action: Reset CCIP by choosing Reset CCIP from the Main menu of the CCIP administration utility. If the error recurs, contact your service representative.

9217 Null Pointer:Comms to DATAS Broken

Severity: 3 (Critical)
Explanation: CCIP environment error.
Action: Reset CCIP by choosing Reset CCIP from the Main menu of the CCIP administration utility. If the error recurs, contact your service representative.

9218 CCIP is Ready

Severity: 0 (Advisory)
Action: No action required.

9219 Bind with LINKS failed

Severity: 2 (Major)
Explanation: CCIP environment error.
Action: Ensure that the CCIP environment variables are set correctly in the .profile file. CCIP requires the following environment variables, which are normally set up during installation:

BBDIR=*ccip_directory*/bb1.1/production/bin
CCIP_HOME=*ccip_directory*
export BBDIR CCIP_HOME

where *ccip_directory* is the directory in which ccip is located (by default /u/nortel/ccip).

If the environment variables are set up correctly, ensure that the mapping of the executable file for LINKS is correct in ccip.ini (refer to “LINKS” on page C-7).

If you modified .profile, log out and log back in as nortel. Reset CCIP by choosing Reset CCIP from the Main menu of the CCIP administration utility.

9220 Bind with ACTS failed

Severity: 2 (Major)

Explanation: CCIP environment error.

Action: Ensure that the CCIP environment variables are set correctly in the .profile file. CCIP requires the following environment variables, which are normally set up during installation:

BBDIR=*ccip_directory*/bb1.1/production/bin
CCIP_HOME=*ccip_directory*
export BBDIR CCIP_HOME

where *ccip_directory* is the directory in which ccip is located (by default /u/nortel/ccip).

If the environment variables are set up correctly, ensure that the mapping of the executable file for the ACT server is correct in ccip.ini (refer to "ACTS" on page C-8).

If you modified .profile, log out and log back in as nortel. Then, reset CCIP by choosing Reset CCIP from the Main menu of the CCIP administration utility.

9221 Bind with IVRS failed

Severity: 2 (Major)

Explanation: CCIP environment error.

Action: Ensure that the CCIP environment variables are set correctly in the .profile file. CCIP requires the following environment variables, which are normally set up during installation:

BBDIR=*ccip_directory*/bb1.1/production/bin
CCIP_HOME=*ccip_directory*
export BBDIR CCIP_HOME

where *ccip_directory* is the directory in which ccip is located (by default /u/nortel/ccip).

If the environment variables are set up correctly, ensure that the mapping of the executable file for the IVR server is correct in ccip.ini (refer to "IVRS" on page C-8).

If you modified .profile, log out and log back in as nortel. Reset CCIP by choosing Reset CCIP from the Main menu of the CCIP administration utility.

9222 DATAS failed to Initialize

Severity: 3 (Critical)
Explanation: Internal Database server error.
Action: Check the parameters in the DATAS configuration block in ccip.ini (refer to Appendix C, "The CCIP initialization file"). After modifying the parameters, reset CCIP by choosing Reset CCIP from the Main menu of the CCIP administration utility.

9223 LINKS failed to Initialize

Severity: 3 (Critical)
Explanation: Internal Meridian Link server error.
Action: Check the parameters in the LINKS configuration block in ccip.ini (refer to Appendix C, "The CCIP initialization file"). After modifying the parameters, reset CCIP by choosing Reset CCIP from the Main menu of the CCIP administration utility.

9224 ACTS failed to Initialize

Severity: 3 (Critical)
Explanation: Internal ACT server error.
Action: Check the parameters in the ACTS configuration block in ccip.ini (refer to Appendix C, "The CCIP initialization file"). After modifying the parameters, reset CCIP by choosing Reset CCIP from the Main menu of the CCIP administration utility.

9225 IVRS failed to Initialize

Severity: 3 (Critical)
Explanation: Internal IVR server error.
Action: Check the parameters in the IVRS configuration block in ccip.ini (refer to Appendix C, "The CCIP initialization file"). After modifying the parameters, reset CCIP by choosing Reset CCIP from the Main menu of the CCIP administration utility.

9226 CCIP Timeout Error on start-up

Severity: 3 (Critical)
Explanation: Internal CCIP error.

Action: Increase the start_time parameter in ccip.ini (refer to page C-5), and check the other parameters. Then reset CCIP by choosing Reset CCIP from the Main menu of the CCIP administration utility.

9227 IVRS Failed to Shutdown Cleanly

Severity: 0 (Advisory)
Explanation: Internal IVR server error.
Action: Contact your service representative.

9228 ACTS Failed to Shutdown Cleanly

Severity: 0 (Advisory)
Explanation: Internal ACT server error.
Action: Contact your service representative.

9229 LINKS Failed to Shutdown Cleanly

Severity: 0 (Advisory)
Explanation: Internal Meridian Link server error.
Action: Contact your service representative.

9230 DATAS Failed to Shutdown Cleanly

Severity: 0 (Advisory)
Explanation: Internal Database server error.
Action: Contact your service representative.

9231 Initializing CCIP...

Severity: 0 (Advisory)
Action: No action required.

9232 ****** Starting CCIP **********

Severity: 0 (Advisory)
Action: No action required.

9233 CCIP is Shutdown

Severity: 0 (Advisory)
Action: No action required.

9234 LINKS Deregistering/Reregistering Application

Severity: 0 (Advisory)
Explanation: During its last shutdown, CCIP did not successfully de-register with Meridian Link. Meridian Link is de-registering and re-registering CCIP.
Action: No action required.

9300 IVR server errors

9301 Server Started Properly

Severity: 0 (Advisory)
Action: No action required.

9302 Server failed to Shutdown Properly

Severity: 2 (Major)
Explanation: Internal IVR server error.
Action: Contact your service representative.

9303 Initialize not Allowed

Severity: 0 (Advisory)
Explanation: The IVR server was in an invalid state to call Initialize.
Action: No action required.

9304 Initialize has completed

Severity: 0 (Advisory)
Action: No action required.

9305 Shutdown not Allowed

Severity: 0 (Advisory)
Explanation: The IVR server was in an invalid state to call Shutdown.
Action: No action required. The server will shut down when it reaches a state from which shutdown can be initiated. If the server does not shut down, you can force a shutdown with the killccip command (refer to “CCIP commands” on page A-9).

9306 Shutdown has Completed

Severity: 0 (Advisory)
Action: No action required.

9307 CourtesyShutdown not Allowed

Severity: 0 (Advisory)
Explanation: The IVR server was in an invalid state to call CourtesyShutdown.
Action: No action required. The server will shut down when it reaches a state from which shutdown can be initiated. If the server does not shut down, you can force a shutdown with the killccip command (refer to “CCIP commands” on page A-9).

9308 CourtesyShutdown has Completed
Severity: 0 (Advisory)
Action: No action required.

9309 Ping Not Allowed
Severity: 0 (Advisory)
Explanation: The IVR server was in an invalid state to call Ping.
Action: No action required.

9310 GetStatus not Allowed
Severity: 0 (Advisory)
Explanation: The IVR server was in an invalid state to call GetStatus.
Action: No action required.

9311 GetTracing not Allowed
Severity: 0 (Advisory)
Explanation: The IVR server was in an invalid state to call GetTracing.
Action: No action required.

9312 SetTracing not Allowed
Severity: 0 (Advisory)
Explanation: The IVR server was in an invalid state to call SetTracing.
Action: No action required.

9313 GetVersion not Allowed
Severity: 0 (Advisory)
Explanation: The IVR server was in an invalid state to call GetVersion.
Action: No action required.

9314 Receive Reply not Allowed
Severity: 0 (Advisory)
Explanation: The IVR server was in an invalid state to call ReceiveReply.
Action: No action required.

9315 Receive CallInfo not Allowed
Severity: 0 (Advisory)
Explanation: The IVR server was in an invalid state to call ReceiveCallInfo.
Action: No action required.

9316 Transfer not Allowed

Severity: 0 (Advisory)
Explanation: The IVR server was in an invalid state to call Transfer.
Action: No action required.

9317 Conference not Allowed

Severity: 0 (Advisory)
Explanation: The IVR server was in an invalid state to call Conference.
Action: No action required.

9318 GetCallInfo not Allowed

Severity: 0 (Advisory)
Explanation: The IVR server was in an invalid state to call GetCallInfo.
Action: No action required.

9319 Bind with LINKServer failed

Severity: 2 (Major)
Explanation: CCIP environment error.
Action: Ensure that the CCIP environment variables are set correctly in the .profile file. CCIP requires the following environment variables, which are normally set up during installation:

BBDIR=*ccip_directory*/bb1.1/production/bin
CCIP_HOME=*ccip_directory*
export BBDIR CCIP_HOME

where *ccip_directory* is the directory in which ccip is located (by default /u/nortel/ccip).

If the environment variables are set up correctly, ensure that the mapping of the executable file for the Meridian Link server is correct in ccip.ini (refer to “LINKS” on page C-7).

If you modified .profile, log out and log back in as nortel. Reset CCIP by choosing Reset CCIP from the Main menu of the CCIP administration utility.

9320 Bind with ACTServer failed

Severity: 2 (Major)
Explanation: CCIP environment error.

Action: Ensure that the CCIP environment variables are set correctly in the .profile file. CCIP requires the following environment variables, which are normally set up during installation:

BBDIR=*ccip_directory*/bb1.1/production/bin
CCIP_HOME=*ccip_directory*
export BBDIR CCIP_HOME

where *ccip_directory* is the directory in which ccip is located (by default /u/nortel/ccip).

If the environment variables are set up correctly, ensure that the mapping of the executable file for the ACT server is correct in ccip.ini (refer to "ACTS" on page C-8).

If you modified .profile, log out and log back in as nortel. Reset CCIP by choosing Reset CCIP from the Main menu of the CCIP administration utility.

9321 Failed to find CCIP.INI file

Severity: 2 (Major)
Explanation: The program was installed incorrectly, or the files have been corrupted.
Action: If you have a backup of your ccip.ini file, restore it. If not, reinstall and reconfigure CCIP. If this does not solve the problem, contact your service representative.

9322 Channel to DN Mapping NOT Linear

Severity: 2 (Major)
Explanation: The configuration is incorrect.
Action: Make sure your channels are configured correctly (refer to "Setting up the channel map" on page 3-11).

9323 No DN Mapping for this Channel

Severity: 2 (Major)
Explanation: The configuration is incorrect.
Action: Make sure your channels are configured correctly (refer to "Setting up the channel map" on page 3-11).

9324 The IVRServer has been shutdown

Severity: 0 (Advisory)
Action: No action required.

9325 No such Transfer Type Available
Severity: 2 (Major)
Explanation: Possible Callflow error.
Action: Contact your service representative.

9326 No such Conference Type Available
Severity: 2 (Major)
Explanation: Possible Callflow error.
Action: Contact your service representative.

9340 Complete Transfer Received Before Initialize
Severity: 2 (Major)
Explanation: Possible Callflow error.
Action: Contact your service representative.

9341 Retrieve Transfer Received Before Initialize
Severity: 2 (Major)
Explanation: Possible Callflow error.
Action: Contact your service representative.

9342 Complete Conference Received Before Initialize
Severity: 2 (Major)
Explanation: Possible Callflow error.
Action: Contact your service representative.

9343 Retrieve Conference Received Before Initialize
Severity: 2 (Major)
Explanation: Possible Callflow error.
Action: Contact your service representative.

9344 ReceiveCallInfo Received Before Request
Severity: 2 (Major)
Explanation: Possible Callflow error.
Action: Contact your service representative.

9345 StopServer has been requested
Severity: 0 (Advisory)
Explanation: A manual StopServer command has been issued to the IVR server.
Action: No action required.

9346 An IVRS Sequence Timer has Fired
Severity: 2 (Major)

Explanation: Internal IVR server error. This error occurs if one or more of the CCIP servers is not running.
Action: Reset CCIP by choosing Reset CCIP from the Main menu of the CCIP administration utility. If the error recurs, contact your service representative.

9347 Sequence Could Not be Created
Severity: 2 (Major)
Explanation: Internal IVR server error.
Action: Unload all CCIP applications on the Application Processor (AP), stop CCIP, and reboot. If the problem recurs, ensure that you have sufficient memory on the AP (refer to "Memory requirements" on page 2-2). If the problem persists, contact your service representative.

9350 Timer Not Found, Can't Cancel_Timer()
Severity: 2 (Major)
Explanation: Internal IVR server error.
Action: Contact your service representative.

9351 Timer Not Removed From TimeoutManager
Severity: 2 (Major)
Explanation: Internal IVR server error.
Action: Contact your service representative.

9352 Timer Not Added To TimeoutManager
Severity: 2 (Major)
Explanation: Internal IVR server error.
Action: Unload all CCIP applications on the Application Processor (AP), stop CCIP, and reboot. If the problem recurs, ensure that you have sufficient memory on the AP (refer to "Memory requirements" on page 2-2). If the problem persists, contact your service representative.

9360 Initialize Transfer request not Allowed
Severity: 0 (Advisory)
Explanation: The IVR server was in an invalid state to call InitializeTransfer.
Action: No action required.

9361 Complete Transfer request not Allowed
Severity: 0 (Advisory)
Explanation: The IVR server was in an invalid state to call CompleteTransfer.
Action: No action required.

9362 Fast Transfer request not Allowed
Severity: 0 (Advisory)
Explanation: The IVR server was in an invalid state to call FastTransfer.
Action: No action required.

9363 Retrieve Transfer request not Allowed
Severity: 0 (Advisory)
Explanation: The IVR server was in an invalid state to call RetrieveTransfer.
Action: No action required.

9364 Transfer ReceiveCallInfo request not Allowed
Severity: 0 (Advisory)
Explanation: The IVR server was in an invalid state to call TransferReceiveCallInfo.
Action: No action required.

9365 Initialize Conference request not Allowed
Severity: 0 (Advisory)
Explanation: The IVR server was in an invalid state to call InitializeConference.
Action: No action required.

9366 Complete Conference request not Allowed
Severity: 0 (Advisory)
Explanation: The IVR server was in an invalid state to call CompleteConference.
Action: No action required.

9367 Retrieve Conference request not Allowed
Severity: 0 (Advisory)
Explanation: The IVR server was in an invalid state to call RetrieveConference.
Action: No action required.

9368 Conference ReceiveCallInfo not Allowed
Severity: 0 (Advisory)

Explanation: The IVR server was in an invalid state to call ConferenceReceiveCallInfo.
Action: No action required.

9369 GetCallInfo request not Allowed
Severity: 0 (Advisory)
Explanation: The IVR server was in an invalid state to call GetCallInfo.
Action: No action required.

9370 GetCallInfo ReceiveCallInfo request not Allowed
Severity: 0 (Advisory)
Explanation: The IVR server was in an invalid state to call GetCallInfoReceiveCallInfo.
Action: No action required.

9400 Meridian Link server errors

9401 Initialize request disallowed
Severity: 0 (Advisory)
Explanation: The Meridian Link server was in an invalid state to call Initialize.
Action: No action required.

9402 Can't locate ccip.ini file
Severity: 2 (Major)
Explanation: The program is installed incorrectly, or the files are corrupted.
Action: If you have a backup of your ccip.ini file, restore it. If not, reinstall and reconfigure CCIP. If this does not solve the problem, contact your service representative.

9403 Failed to fork a child process
Severity: 2 (Major)
Explanation: Internal Meridian Link server error.
Action: Contact your service representative.

9404 Shutdown request disallowed
Severity: 0 (Advisory)
Explanation: The Meridian Link server was in an invalid state to call Shutdown.

Action: No action required. The server will shut down when it reaches a state from which shutdown can be initiated. If the server does not shut down, you can force a shutdown with the killccip command (refer to "CCIP commands" on page A-9).

9405 CourtesyShutdown request disallowed

Severity: 0 (Advisory)
Explanation: The Meridian Link server was in an invalid state to call CourtesyShutdown.
Action: No action required. The server will shut down when it reaches a state from which shutdown can be initiated. If the server does not shut down, you can force a shutdown with the killccip command (refer to "CCIP commands" on page A-9).

9406 Transfer request disallowed

Severity: 0 (Advisory)
Explanation: The Meridian Link server was in an invalid state to call Transfer.
Action: No action required.

9407 Invalid transfer type

Severity: 0 (Advisory)
Explanation: Possible Callflow error.
Action: No action required.

9408 Conference request disallowed

Severity: 0 (Advisory)
Explanation: The Meridian Link server was in an invalid state to call Conference.
Action: No action required.

9409 Invalid conference type

Severity: 0 (Advisory)
Explanation: Possible Callflow error.
Action: No action required.

9410 Subscribe request disallowed

Severity: 0 (Advisory)
Explanation: The Meridian Link server was in an invalid state to call Subscribe.
Action: No action required.

9411 Unsubscribe request disallowed

Severity: 0 (Advisory)
Explanation: The Meridian Link server was in an invalid state to call Unsubscribe.
Action: No action required.

9415 error in link msg

Severity: 2 (Major)
Explanation: Internal Meridian Link server error.
Action: Reset CCIP by choosing Reset CCIP from the Main menu of the CCIP administration utility. If the error recurs, contact your service representative.

9418 goto_state: unknown state

Severity: 2 (Major)
Explanation: Internal Meridian Link server error.
Action: Contact your service representative.

9420 Socket creation error

Severity: 3 (Critical)
Explanation: Internal Meridian Link server error.
Action: Contact your service representative.

9421 Socket error : unknown hostname

Severity: 3 (Critical)
Explanation: The configuration is incorrect.
Action: If you entered a host name for Link Module IP address (refer to "Configuring Meridian Link parameters" on page 3-13), ensure that it is defined in the hosts file on the AP on which CCIP is installed. Alternatively, enter the IP address of the Meridian Link host. Then, reset CCIP by choosing Reset CCIP from the Main menu of the CCIP administration utility. If the error recurs, contact your service representative.

9422 Socket error: no port number specified on connection request

Severity: 3 (Critical)
Explanation: The configuration is incorrect.

Action: Ensure that the Link Module port number (refer to "Configuring Meridian Link parameters" on page 3-13) is correct. Then, reset CCIP by choosing Reset CCIP from the Main menu of the CCIP administration utility. If the error recurs, contact your service representative.

9423 Socket error: connect failed

Severity: 3 (Critical)
Explanation: Internal Meridian Link server error.
Action: Contact your service representative.

9424 Socket write error: socket handle is zero

Severity: 2 (Major)
Explanation: Internal Meridian Link server error.
Action: Contact your service representative.

9425 Socket write error: write failed

Severity: 2 (Major)
Explanation: Internal Meridian Link server error.
Action: Contact your service representative.

9426 Socket write error: message length didn't match amount sent

Severity: 2 (Major)
Explanation: Internal Meridian Link server error.
Action: Contact your service representative.

9430 Initialize was unsuccessful

Severity: 1 (Minor)
Explanation: Internal Meridian Link server error.
Action: Check the parameters in the LINKS configuration block in ccip.ini (refer to Appendix C, "The CCIP initialization file"). After modifying the parameters, reset CCIP by choosing Reset CCIP from the Main menu of the CCIP administration utility.

9431 Ref0 received an InvalidMessage from Link

Severity: 1 (Minor)
Explanation: Internal Meridian Link server error.
Action: Contact your service representative.

9432 Shutdown was unsuccessful

Severity: 1 (Minor)
Explanation: Internal Meridian Link server error.

Action: Contact your service representative.

9433 CallRelease was unsuccessful
Severity: 1 (Minor)
Explanation: Internal Meridian Link server error.
Action: Contact your service representative.

9434 CourtesyShutdown was unsuccessful
Severity: 1 (Minor)
Explanation: Internal Meridian Link server error.
Action: Contact your service representative.

9440 Received an InvalidMessage from Link
Severity: 1 (Minor)
Explanation: Internal Meridian Link server error.
Action: Contact your service representative.

9441 Invalid transfer/conference type
Severity: 0 (Advisory)
Explanation: Possible Callflow error.
Action: No action required.

9442 Error *cause* from Link during a init xfer/conf
Severity: 0 (Advisory)
Explanation: Use the *cause* code to determine the error generated by Meridian Link.
Action: No action required.

9443 Unexpected event from Link during a init xfer/conf
Severity: 2 (Major)
Explanation: Internal Meridian Link server error.
Action: Contact your service representative.

9444 Unexpected Progress message from Link during an init xfer/conf
Severity: 2 (Major)
Explanation: Internal Meridian Link server error.
Action: Contact your service representative.

9445 Error *cause* from Link during a fast transfer request
Severity: 0 (Advisory)
Explanation: Use the *cause* code to determine the error generated by Meridian Link.
Action: No action required.

9446 Unexpected Progress message from Link during a fast transfer

Severity: 2 (Major)
Explanation: Internal Meridian Link server error.
Action: Contact your service representative.

9447 Invalid complete xfer/conf type

Severity: 0 (Advisory)
Explanation: Possible Callflow error.
Action: No action required.

9448 Error *cause* from Link during a complete xfer/conf

Severity: 0 (Advisory)
Explanation: Use the cause code to determine the error generated by Meridian Link.
Action: No action required.

9449 Unexpected event from Link during a complete xfer/conf

Severity: 2 (Major)
Explanation: Internal Meridian Link server error.
Action: Contact your service representative.

9450 Unexpected Progress message from Link during a complete xfer

Severity: 2 (Major)
Explanation: Internal Meridian Link server error.
Action: Contact your service representative.

9451 FastTransfer: no matching CallOffered msg in call cache

Severity: 2 (Major)
Explanation: Internal Meridian Link server error.
Action: Contact your service representative.

9460 add_timer: add failed

Severity: 2 (Major)
Explanation: Internal Meridian Link server error.
Action: Unload all CCIP applications on the Application Processor (AP), stop CCIP, and reboot. If the problem recurs, ensure that you have sufficient memory on the AP (refer to "Memory requirements" on page 2-2). If the problem persists, contact your service representative.

9461 remove_timer: find failed

Severity: 2 (Major)
Explanation: Internal Meridian Link server error.

Action: Contact your service representative.

9462 remove_timer: remove failed

Severity: 2 (Major)
Explanation: Internal Meridian Link server error.
Action: Contact your service representative.

9500 User Function errors

9500 Server Started Properly

Severity: 0 (Advisory)
Action: No action required.

9501 Server Failed to Start Properly

Severity: 2 (Major)
Explanation: Internal User Function Error
Action: Contact your service representative.

9502 Bind with IVRServer Failed

Severity: 2 (Major)
Explanation: Internal User Function Error
Action: Ensure that the CCIP environment variables are set correctly in the .profile file. CCIP requires the following environment variables, which are normally set up during installation:

BBDIR=*ccip_directory*/bb1.1/production/bin
CCIP_HOME=*ccip_directory*
export BBDIR CCIP_HOME

where *ccip_directory* is the directory in which ccip is located (by default /u/nortel/ccip).

If the environment variables are set up correctly, ensure that the mapping of the executable file for IVRS is correct in ccip.ini (refer to "IVRS" on page C-8).

If you modified .profile, log out and log back in as nortel. Reset CCIP by choosing Reset CCIP from the Main menu of the CCIP administration utility.

9503 Couldn't Find orbkey.key File

Severity: 2 (Major)
Explanation: The configuration is incorrect, or the backbone process has not started.

Action: Unload the CCIP application. Reset CCIP by choosing Reset CCIP from the Main menu of the CCIP administration utility. Then, reload the application.

9504 Too Many Input Buffers
Severity: 0 (Advisory)
Explanation: Possible Callflow error.
Action: No action required.

9505 Not Enough Input Buffers
Severity: 0 (Advisory)
Explanation: Callflow error.
Action: Check your callflow application.

9506 Server Failed to Shutdown Properly
Severity: 2 (Major)
Explanation: Internal User Function Error
Action: Contact your service representative.

9507 Server Shutdown Properly
Severity: 0 (Advisory)
Action: No action required.

9508 CCIP has Restarted ReBinding with IVRS
Severity: 0 (Advisory)
Explanation: This message is issued when the user functions detect that CCIP has restarted. They must rebind (renew communications with) the IVR server.
Action: No action required.

9509 Received an Invalid Status for Request
Severity: 2 (Major)
Explanation: Internal User Function error
Action: Contact your service representative.

9510 Invalid Timeout Unit Received
Severity: 0 (Advisory)
Explanation: Callflow error.
Action: Check your callflow application.

9511 Invalid Timeout Value Received
Severity: 0 (Advisory)
Explanation: Callflow error.
Action: Check your callflow application.

9512 Invalid Lookup Type Received

Severity:	0 (Advisory)
Explanation:	Callflow error.
Action:	Check your callflow application.

Appendix B: Tables and files

This appendix lists the fields in each of the statistics files and tables used by CCIP.

Active Calls Table (ACT)

This table contains the following fields.

Table B-1
Active Call Table fields

Field	Description
Call Arrival Time	date and time of call arrival
DN	the IVR/Agent queue or directory number (DN) where the call is currently residing
Unique Call ID	the Unique Call ID of the call as delivered by Meridian Link
Networked Call ID	the Network Call ID of a call routed through a network
Origination Address	the calling DN (the DN of the caller)
Destination Address	the called DN (DN dialed by the caller)
ANI	the Automatic Number ID (ANI) of the call
DNIS	the Dialed Number Identification Services (DNIS) of the call (if available)
Device Type	the device type of the call

Table B-1
Active Call Table fields

Field	Description
ACD Position ID	the unique ID of an Automatic Call Distribution (ACD) agent set
Call Stop Time	date and time of call termination
Call length	length of call

CCIP ACT History file

For each event, the ACT server writes the following information to this file:

- date/time
- host name of the AP on which CCIP is installed
- ACD Position ID
- current address (ACD queue)
- length of call, in seconds
- call ID
- ANI
- DNIS
- event (call answer, call transfer, call abandon, and so on)

To view this file, choose Call History from the View menu of the CCIP administration utility.

The file is backed up after a configurable period of time (by default, 4 hours) or when it reaches a specified size (by default, 300 kbyte). Then, the file is cleared. For more information, refer to “Customizing CCIP preferences” on page 4-12 and “ACTS” on page C-15.

CCIP ACT Summary file

Every hour the ACT server writes the following information to this file:

- date/time
- host name of the AP on which CCIP is installed

- hour range (for example, 12:00 - 13:00)
- total number of calls
- average length of call
- number of transferred calls
- number of abandoned calls
- number of released calls
- number of different ANIs
- number of different DNISs

To view this file, choose Call Summary from the View menu of the CCIP administration utility.

The file is backed up after a configurable period of time (by default, one day). Then, the file is cleared. For more information, refer to “Customizing CCIP preferences” on page 4-12 and “ACTS” on page C-15.

CCIP Error Log file

This file contains the following fields:

- date/time
- host name of the AP on which CCIP is installed
- CCIP server that generated the error
- error code
- error description

To view this file, choose Error Log from the View menu of the CCIP administration utility.

The file is backed up after a configurable period of time (by default, 24 hours), or when it reaches a specified size (by default, 300 kbyte). Then, the file is cleared. You can configure the error log size in the Database Server (DATAS) configuration block of the config.ini file. For more information, refer to “DATAS” on page C-8.

Appendix C: The CCIP initialization file

Configuration information for the Call Center Integration Package (CCIP) is stored in an ASCII text file, /u/nortel/ccip/bin/ccip.ini. This file is similar in format to a Windows INI file. A separate ccip.ini file is created for each Application Processor (AP).

To modify configuration parameters, you use the CCIP administration utility. Advanced users can modify ccip.ini directly using an ordinary text editor. (Some parameters can only be changed by modifying the ccip.ini file directly.)

> ***Note:*** CCIP must be restarted for any changes to the ccip.ini file to take effect.

Each server retrieves configuration information from a configuration block in this file. During initialization, the Call Centre Controller (CCC) tells each server which configuration block to use.

This appendix describes the format of the ccip.ini file and the configuration parameters it contains.

Example ccip.ini file

Following is a sample ccip.ini file.

```
#ccip.ini -- Config file for CCIP
#version 1.0.0
#Each server will get its config info from a section in this file. For
# flexibility, CCC will pass each server its section name at Initialize time.
#These values are generally read at Initialization time.
#
```

```
#Put comments at the beginning of a section because entries will move
#around
#
#Entries that must be filled in during installation have a value of "xxx"
#For example. LINK_address=xxx

[CCCS]
# -- server start-up parameters --
#NAME: start flag, config block, servicemap
DATAS=1,DATAS,default_map
LINKS=1,LINKS,default_map
ACTS=1,ACTS,default_map
IVRS=1,IVRS,default_map
autostart_CCIP=1
courtesy_length=60
ping_time=60
sleeptime=5
start_time=60
stop_time=20
trace_level=1
trace_location=2
trace_msgfmt=1

[DATAS]
cciplogd_dir=bin
cciplogd_file=cciplogd
errlog_dir=log/
errlog_file=ccip_loglog
errlog_keep=24
errlog_size=3
pid_location=/tmp
pid_filename=cciplogd.pid
sev_filedir=""
sev_filename=severity
lowerror=9000
trace_level=1
trace_location=2
trace_msgfmt=1
```

```
[LINKS]
default_timeout=10
IVR_DN_section=IVR_DNs
agent_DN_section=agent_DNs
dntype_internalDN=8
dntype_ACD_pos_id=30
trace_level=1
trace_location=2
trace_msgfmt=1
LINK_address=50.100.200.10
LINK_portnum=3000
app_id=CCIP1
host_name=Lanlink
M1_name=SL16
M1_num=0
polling_interval=1

[ACTS]
call_history_size=4
call_history_max=3
call_summary_size=30
history_location=2
summary_location=2
hisfiledir=log/
hisfilename=ccip_hislog
sumfiledir=log/
sumfilename=ccip_sumlog
trace_level=1
trace_location=2
trace_msgfmt=1

[IVRS]
#chmap entries map IVR channel numbers to ACD Position IDs.
#sample: chmap0=0-47:8200-8247
dn_key_type=3
trace_level=1
trace_location=2
trace_msgfmt=1
chmap0=0-47:8200-8247
```

```
[IVR_DNs]
#Several possible settings...
#Normal Open IVR trunk param files (which do IVR ACD login):
DNs0=8200-8247:130:0
#CCIP trunk param files (which don't IVR ACD login):
DNs0=8200-8247:130:1:8:*

[agent_DNs]
# -- service maps --
# The default map is used by most servers
DNs0=8300-8323:130:0
DNs1=8101:130:0
DNs2=8104:130:0

[default_map]
ACT_SRV=acts
CCC_SRV=cccs
DATA_SRV=datas
IVR_SRV=ivrs
LINK_SRV=links
#end of file
```

Configuration blocks

Configuration parameters are grouped into configuration blocks. At start-up, the Call Center Controller tells each server which configuration block to use. The block contains all the configuration parameters for the server. The following sections describe the parameters in each configuration block.

CCCS

This configuration block contains the parameters for the Call Centre Controller (CCC) server.

autostart_CCIP

Description: Determines whether the CCC sends initialization requests to all servers after CCIP starts. Specify “1” to initialize CCIP automatically. Specify “0” to initialize CCIP from within the CCIP administration utility. You can set this parameter with the CCIP administration utility (refer to “Customizing CCIP preferences” on page 4-12).

Type: Boolean

Default value: 1 (True)

courtesy_length

Description: The number of seconds that CCIP waits for ongoing requests to finish after a courtesy shutdown is initiated. After this period, all active CCIP processes are shut down. You can set this parameter with the CCIP administration utility (refer to "Customizing CCIP preferences" on page 4-12).

Type: number

Default value: 30

Range: 0-32767

ping_time

Description: The interval at which the CCC pings each CCIP server, to ensure that it is active.

Type: number

Default value: 30

Range: 1-32767

sleep_time

Description: The time that the CCC waits before sending initialization requests to the CCIP servers. The sleep_time gives the servers time to reach IDLE state.

Type: number

Default value: 10

Range: 0-32767

start_time

Description: The time that the CCC waits for each server to start up before logging a timeout error and shutting down.

Type: number

Default value: 60

Range: 0-32767

stop_time

Description: The time that the CCC waits for each server to shutdown before logging an error and advancing to the next stage of shutdown.

Type: number
Default value: 10
Range: 0-32767

trace_level

Description: The trace level used for this server. The trace level is set at the start of CCC's Initialize() function so that initialization can be traced. You can set this parameter with the CCIP administration utility (refer to "CCIP Error and Event Log" on page A-7).

Type: number
Default value: 1
Range:

0	Off
1	Errors (this is the default setting)
2	Events (all incoming requests)
3	DEBUG1
4	DEBUG2
5	DEBUG3
6	DEBUG4

Note: Each level includes all the levels beneath it. For example, level 3 includes errors, events, and debug level 1 messages. For production applications, use only levels 0 to 2. The higher levels impact system response times, and should be used only during application development and debugging.

trace_location

Description: The destination for trace output.
Type: number
Default value: 2

Range:

0	screen
1	a text file
2	the Database server.

trace_msgfmt

Description: The format in which trace messages are logged.
Type: number
Default value: 1
Range:

0	hex
1	normal
2	Meridian Link

The remainder of this configuration block contains start-up information for each of the CCIP servers.

DATAS

Description: The start-up information for the Database server, which the CCC passes to it on start-up. The parameter consists of three parts: the first specifies whether the CCC should start the server (1 = Yes and 0 = No); the second identifies the configuration block the server should use; and the third identifies the configuration block that specifies the name of the server process.
Type: string
Default value: 1,DATAS,default_map

LINKS

Description: The start-up information for the Meridian Link server, which the CCC passes to it on start-up. The parameter consists of three parts: the first specifies whether the CCC should start the server (1 = Yes and

0 = No); the second identifies the configuration block the server should use; and the third identifies the configuration block that specifies the name of the server process.

Type: string

Default value: 1,LINKS,default_map

ACTS

Description: The start-up information for the Active Calls Table (ACT) server, which the CCC passes to it on start-up. The parameter consists of three parts: the first specifies whether the CCC should start the server (1 = Yes and 0 = No); the second identifies the configuration block the server should use; and the third identifies the configuration block that specifies the name of the server process.

Type: string

Default value: 1,ACTS,default_map

IVRS

Description: The start-up information for the IVR server, which the CCC passes to it on start-up. The parameter consists of three parts: the first specifies whether the CCC should start the server (1 = Yes and 0 = No); the second identifies the configuration block the server should use; and the third identifies the configuration block that specifies the name of the server process.

Type: string

Default value: 1,IVRS,default_map

DATAS

This block contains the parameters for the Database server.

cciplogd_dir

Description: The directory in which the cciplogd daemon is located. The value you enter is relative to $CCIP_HOME (by default, /u/nortel/ccip).

Type: string (maximum 80 characters)

Default value: "bin"

cciplogd_file

Description: The name of the cciplogd daemon executable file.

Type: string (maximum 48 characters)

Default value: "cciplogd"

errlog_dir

Description: The directory in which the CCIP Error Log file is located if you set trace_location for a server to 1. The value you enter is relative to $CCIP_HOME (by default, /u/nortel/ccip).

Type: string (maximum 80 characters)

Default value: ""

errlog_file

Description: The name of the file to which the CCIP Error Log file is written if you set trace_location for a server to 1.

Type: string (maximum 48 characters)

Default value: "ccip_loglog"

errlog_keep

Description: The amount of time (in hours) that the CCIP Error Log file is kept. After this period elapses, the Database server backs up the file and clears it.

Type: 24

Default value: 24

Range: 0-32767

errlog_size

Description: The maximum size (in hundreds of kbyte) of the CCIP Error Log file. When the file reaches this size, the Database server backs it up and clears it.

Type: number

Default value: 3 (300 kbyte)

Range: 0-30

pid_location

Description: The directory in which the cciplogd daemon pid text file is stored. This file stores the process id (pid) for the cciplogd process (the CCIP log daemon). This file exists only while the cciplogd process is running.

The Database server uses this file to determine whether the process is currently running.

Type: string (maximum 80 characters)

Default value: "/tmp"

pid_filename

Description: The name of the cciplogd daemon pid text file.

Type: string (maximum 48 characters)

Default value: "cciplodg.pid"

sev_filedir

Description: The directory in which the severity file is stored.

Type: string (maximum 80 characters)

Default value: "$VOICE_HOME/ui_lang/$VOICE_LANG"

sev_filename

Description: The name of the severity file.

Type: string (maximum 48 characters)

Default value: "severity"

lowerror

Description: The lowest number in the range of error numbers to be read from the severity file.

Type: number

Default value: 9000

Range: 0-32767

trace_level

Description: The trace level for this server. You can set this parameter with the CCIP administration utility (refer to “CCIP Error and Event Log” on page A-7).

Type: number

Default value: 1

Range:

0	Off
1	Errors (this is the normal setting)
2	Events (all incoming requests)

3	DEBUG1
4	DEBUG2
5	DEBUG3
6	DEBUG4

Note: Each level includes all the levels beneath it. For example, level 3 includes errors, events, and debug level 1 messages. For production applications, use only levels 0 to 2. The higher levels impact system response times, and should be used only during application development and debugging.

trace_location

Description: Sets the destination for trace output.
Type: number
Default value: 2
Range:

0	screen
1	a text file
2	the Database server

trace_msgfmt

Description: The format in which trace messages are logged.
Type: number
Default value: 1
Range:

0	hex
1	normal
2	Meridian Link

LINKS

This block contains the parameters for the Meridian Link server.

default_timeout

Description: The amount of time that CCIP waits for a response from Meridian Link before logging a timeout error. This parameter corresponds to the Request timeout field (refer to "Configuring Meridian Link parameters" on page 3-13).

Type: number

Default value: 10

Range: 0-32767

IVR_DN_section

Description: The name of the configuration block in which the list of IVR DNs is stored.

Type: string

Default value: IVR_DNs

agent_DN_section

Description: The name of the configuration block in which the list of Agent DNs is stored.

Type: string

Default value: agent_DNs

dntype_internalDN

Description: The default DN type to use for internal DNs, in decimal format. For a list of DN types, refer to Table E-1, " DN types," on page E-1.

Type: number

Default value: 8

dntype_ACD_pos_id

Description: The default agent type to use for ACD position IDs, in decimal format. For a list of agent types, refer to Table E-2, " Agent types," on page E-2.

Type: number

Default value: 30

trace_level

Description: The trace level used by the Meridian Link server.

You can set this parameter with the CCIP administration utility (refer to “CCIP Error and Event Log” on page A-7).

Type: number

Default value: 1

Range:

0	Off
1	Errors (this is the normal setting)
2	Events (all incoming requests)
3	DEBUG1
4	DEBUG2
5	DEBUG3
6	DEBUG4

Note: Each level includes all the levels beneath it. For example, level 3 includes errors, events, and debug level 1 messages. For production applications, use only levels 0 to 2. The higher levels impact system response times, and should be used only during application development and debugging.

trace_location

Description: Sets the destination for trace output.

Type: number

Default value: 2

Range:

0	screen
1	a text file
2	the Database server

trace_msgfmt

Description: The format in which trace messages are logged.

Type: number
Default value: 1
Range:

0	hex
1	normal
2	Meridian Link

LINK_address

Default value: The IP address or host name of the Meridian Link module. This parameter corresponds to the LINK Module IP address field (refer to "Configuring Meridian Link parameters" on page 3-13).

Type: string
Default value: none

LINK_portnum

Description: The port number of the Meridian Link module. This parameter corresponds to the LINK Module port number field (refer to "Configuring Meridian Link parameters" on page 3-13).

Type: number
Default value: 3000

app_id

Description: The Meridian Link application ID. The Meridian Link server uses this ID when it registers with Meridian Link. This parameter corresponds to the Application ID field (refer to "Configuring Meridian Link parameters" on page 3-13).

Type: string
Default value: CCIP1

host_name

Description: The name of the TCP/IP host link with which the Meridian Link server registers. This parameter corresponds to the Host link name field (refer to "Configuring Meridian Link parameters" on page 3-13).

Type: string
Default value: Lanlink

M1_name
Description: The Meridian 1 machine ID. This parameter corresponds to the Meridian 1 name field (refer to "Configuring Meridian Link parameters" on page 3-13).
Type: string
Default value: SL16

M1_num
Description: The Meridian 1 customer number. This parameter corresponds to the Meridian 1 number field (refer to "Configuring Meridian Link parameters" on page 3-13).
Type: number
Default value: 0

polling_interval
Description: Specifies how often Meridian Link sends polling messages to the Meridian Link server. This parameter corresponds to the Polling interval field (refer to "Configuring Meridian Link parameters" on page 3-13).
Type: number
Default value: 1
Range: 1-60

ACTS

call_history_size
Description: The amount of time (in hours) that the CCIP ACT History file is kept. After this period elapses, the Database server backs up the file and clears it. You can set this parameter with the CCIP administration utility (refer to "Customizing CCIP preferences" on page 4-12).
Type: number
Default value: 4
Range: 1-24

call_history_max

Description: The maximum size (in hundreds of kbyte) of the CCIP ACT History file. When the file reaches this size, the Database server backs it up and clears it.

Type: number

Default value: 3 (300 kbyte)

Range: 0-30

call_summary_size

Description: The amount of time (in days) that the CCIP ACT Summary file is kept. After this period elapses, the Database server backs up the file and clears it. You can set this parameter with the CCIP administration utility (refer to “Customizing CCIP preferences” on page 4-12).

Type: number

Default value: 1

Range: 1-30

history_location

Description: Sets the destination for the CCIP ACT History file output.

Type: number

Default value: 2

Range:

0	screen
1	a text file (If you select this option, you can set the file name and location with the hisfiledir and hisfilename parameters.)
2	the Database server

summary_location

Description: Sets the destination for the CCIP ACT Summary file output.

Type: number

Default value: 2

Range:

0	screen
1	a text file (If you select this option, you can set the file name and location with the sumfiledir and sumfilename parameters.)
2	the Database server

hisfiledir

Description: The directory in which the CCIP ACT History file is located if you set history_location to 1. The value you enter is relative to $CCIP_HOME (by default, /u/nortel/ccip).

Type: string (maximum 80 characters)

Default value: "log/"

hisfilename

Description: The name of the file in which the CCIP ACT History statistics are written if you set history_location to 1.

Type: string (maximum 48 characters)

Default value: "ccip_hislog"

sumfiledir

Description: The directory in which the CCIP ACT Summary file is located if you set summary_location to 1. The value you enter is relative to $CCIP_HOME (by default, /u/nortel/ccip).

Type: string (maximum 80 characters)

Default value: "log/"

sumfilename

Description: The name of the file in which the CCIP ACT Summary statistics are written if you set summary_location to 1.

Type: string (maximum 48 characters)

Default value: "ccip_sumlog"

trace_level

Description: The trace level used by the ACT server. You can set this parameter with the CCIP administration utility (refer to “CCIP Error and Event Log” on page A-7).

Type: number

Default value: 1

Range:

0	Off
1	Errors (this is the normal setting)
2	Events (all incoming requests)
3	DEBUG1
4	DEBUG2
5	DEBUG3
6	DEBUG4

Note: Each level includes all the levels beneath it. For example, level 3 includes errors, events, and debug level 1 messages. For production applications, use only levels 0 to 2. The higher levels impact system response times, and should be used only during application development and debugging.

trace_location

Description: Sets the destination for trace output.

Type: number

Default value: 2

Range:

0	screen
1	a text file
2	the Database server

trace_msgfmt

Description: The format in which trace messages are logged.

Type: number

Default value: 1

Range:

0	hex
1	normal
2	Meridian Link

IVRS

dn_key_type

Description: The DN type for the source DN (the IVR) server. Enter 3. The Meridian Link server translates 3 to the decimal value 30 (1Ex), which identifies an ACD position ID (refer to Table E-1, “ DN types,” on page E-1).

Type: number

Default value: 3

trace_level

Description: The trace level used by the IVR server. You can set this parameter with the CCIP administration utility (refer to “CCIP Error and Event Log” on page A-7).

Type: number

Default value: 1

Range:

0	Off
1	Errors (this is the normal setting)
2	Events (all incoming requests)
3	DEBUG1
4	DEBUG2

5	DEBUG3
6	DEBUG4

Note: Each level includes all the levels beneath it. For example, level 3 includes errors, events, and debug level 1 messages. For production applications, use only levels 0 to 2. The higher levels impact system response times, and should be used only during application development and debugging.

trace_location

Description: Sets the destination for trace output.
Type: number
Default value: 2
Range:

0	screen
1	a text file
2	the Database server

trace_msgfmt

Description: The format in which trace messages are logged.
Type: number
Default value: 1
Range:

0	hex
1	normal
2	Meridian Link

chmap0, chmap1 ...

Description: Maps IVR channel numbers to their associated DNs (or ACD position IDs). You can set this parameter with the CCIP administration utility (refer to "Setting up the channel map" on page 3-11).

Type:	channel map
Format:	*aaa-bbb:cccc-dddd*
Example:	0-15:8200-8215
Default value:	none

IVR_DNs

This configuration block specifies the IVR directory numbers (DNs) that CCIP serves.

DNs0, DNS1 ...

Description:	Defines the IVR DNs served by CCIP. Each entry contains the following information: the DN number or DN range; the DN type; whether to log in the DNs (1 = Yes or 0 = No); the Agent type; and the Agent ID. This parameter contains the information you enter in the Add IVR DNs and Add New Channels windows in the CCIP administration utility (refer to "Configuring IVR DNs" on page 3-7 and "Setting up the channel map" on page 3-11).
Type:	string
Format:	*nnnn:dn_type:login_flag:agent_type:agent_ID* *nnnn-mmmm:dn_type:login_flag:agent_type:agent_ID*
Example:	8200-8295:130:1:8:*
Default value:	none

Agent_DNs

This configuration block specifies the Agent directory numbers (DNs) that CCIP serves. You can set the parameters in this block with the CCIP administration utility (refer to "Configuring Agent DNs" on page 3-9).

DNs0, DNS1 ...

Description:	Defines the Agent DNs served by CCIP. Each entry contains the following information: the DN number or DN range; the Agent type; and whether to log in the DNs (1 = Yes or 0 = No).
Type:	string

Format: *nnnn:dn_type:login_flag:agent_type:agent_ID*
nnnn-mmmm:dn_type:login_flag:agent_type:agent_ID

Example: 8300-8323:130:1

default_map

The ccip.ini file contains one or more service maps, which identify the name of the executable file that the Call Center Controller invokes to run the CCIP servers. The default service map is default_map, which is stored in this configuration block.

ACT_SRV

Description: Specifies the name of the executable file that runs the Active Calls Table (ACT) server.

Type: string

Default value: none

CCC_SRV

Description: Specifies the name of the executable file that runs the Call Center Controller (CCC).

Type: string

Default value: none

DATA_SRV

Description: Specifies the name of the executable file that runs the Database server.

Type: string

Default value: none

IVR_SRV

Description: Specifies the name of the executable file that runs the IVR server.

Type: string

Default value: none

LINK_SRV

Description: Specifies the name of the executable file that runs the Meridian Link server.

Type: string

Default value: none

Appendix D: CCIP processes

This appendix lists the CCIP processes and the child processes that they spawn.

Table D-1
CCIP processes

Process	Description
.ccipconf	The conference user functions.
.ccipinfo	The GetInfo user function.
.ccipxfer	The transfer user functions.
acts	The Active Call Table (ACT) server. This server spawns a child process, also called acts, which backs up the history and summary files.
adkill.sh	A script file used to kill the xm_vtcld daemon when the last CCIP Admin window is closed.
cccs	The Call Center Controller (CCC) server.
ccipadmn.tcl	The source code for the CCIP administration utility. This process spawns the following child processes: cnlstat.exe, rcccs.exe, radini.exe, and systime.exe.
ccipadmin.sh	A script file that runs the CCIP administration utility.
cciplogd	The CCIP log daemon, which logs errors, call history, and summary statistics through syslogd.
chnlstat.exe	The process that reports channel status when you choose CHannel status from the View menu of the CCIP administration utility.

Table D-1 (continued)
CCIP processes

Process	Description
datas	The Database server.
dbengine.exe	The process that logs backbone errors and reads and writes information used by the backbone during start-up.
ivrs	The Interactive Voice Response (IVR) server.
killccip.sh	A script file used to kill all of the CCIP processes.
links	The Meridian Link server. This server spawns a child process, also called links, which translates messages received from Meridian Link to a format that can be used by the Meridian Link server.
radini.exe	The process that the CCIP administration utility uses to read information from and write information to the ccip.ini file.
rcccs.exe	The process used by the CCIP administration utility to send requests to the CCC.
systime.exe	The process that monitors how long the servers take to respond to a request for status. Each CCIP administration utility window has a systime.exe process.
totxt	A user function that the test application uses to write call information to a text file. (For more information about the test application, refer to “Using the test application” on page 3-21.”)
wake_up.exe	A process used by the backbone to keep track of timed events.
xm_vtcld	The SCO Visual TCL run-time interpreter. (Visual TCL is the tool used to produce the CCIP administration utility interface.)

Appendix E: DN and agent types

This appendix lists the directory number (DN) and agent types supported by Meridian Link.

Table E-1
DN types

Hex value	Decimal value	Type
00	0	Unknown
01	1	International
02	2	National
03	3	Special number
04	4	Subscriber number
05	5	Location code call
06	6	Coordinated dialing plan
07	7	Reserved
08	8	Internal
09	9	Route/member
0A	10	Route only (Network Automatic Call Distribution—NACD)
0B	11	Attendant/member
0C	12	Automatic Call Distribution (ACD) DN/ACD Position

Table E-1 (continued)
DN types

Hex value	Decimal value	Type
0D	13	ACD Position/Dialed Number Identification Service (DNIS)
0E	14	IANI: ACD DN/ACD position
0F	15	In-Band ANI
10	16	ACD DN
11	17	ACD DN/Position/DNIS
12	18	Transfer
13	19	Conference
14	20	Call waiting
15	21	Group call
16	22	CDN
17	23	CDN/DNIS
18	24	Treatment DN
1E	30	ACD Position ID
25	37	Voice channel

Table E-2
Agent types

80	128	All Types
81	129	Regular DN (Internal, ACD, and so on)
82	130	ACD Position ID
83	131	DNIS number
84	132	Voice class number

Appendix F: Meridian 1 switch configuration

The Call Center Integration Package (CCIP) requires that the Meridian 1 switch be configured to support Meridian Link. For detailed instructions, refer to the *Meridian Link/Customer Controlled Routing Installation and Upgrade Guide.*

This appendix lists the parameters that must be configured for each Interactive Voice Response (IVR) agent, IVR Automatic Call Distribution (ACD) position, and agent ACD position that will be served by CCIP.

Table F-1
IVR agent position ID parameters

Prompt	Response	Description
AST	YES	Associate Set assignment. Specifies that this channel is controlled by Meridian Link.
IAPG	1	Meridian Link Unsolicited Status Message (USM) group. Specifies that all events on this channel are to be sent to Meridian Link.
CLS	LDTA	Line Disconnect Tone Allowed. Specifies that IVR hangs up the channel when the call is completed.
AACD	YES	Associate set (AST) ACD telephone.

Table F-2
Agent set profile parameters

Prompt	Response	Description
AST	03 00	Associate Set assignment. Specifies the keys controlled by Meridian Link.
IAPG	1	Meridian Link Unsolicited Status Message (USM) group. Specifies that Meridian Link is to be notified of changes on the set.

Table F-3
IVR and agent ACD queue parameters

Prompt	Response	Description
ISAP	YES	Specifies that events are to be returned to Meridian Link.
VSID	*nn*	Value Added Server ID of VAS providing VMS. Enter *nn*, where *nn* is the number of the link between Meridian Link and IVR. When you set this parameter, you are prompted to specify values for additional parameters. For more information, refer to your *Meridian 1 Software input/output guide.*

Appendix G: Localization

The Call Center Integration Package (CCIP) administration utility can be easily localized to other languages. This appendix explains how to do so.

If CCIP is localized, it reads all text (messages, buttons, and field labels) from a catalog (.cat) file at start-up. To localize CCIP, you must generate a new, localized catalog file. Then you must install this catalog file.

Creating a localized catalog file

To create a localized catalog file, follow this procedure.

Procedure G-1:
Creating a localized catalog file

1 Change the working directory to $CCIP_HOME/install by entering

cd $CCIP_HOME/install

2 Translate the ccipadmn.msg file, which is located in the this directory.

Each line of this file represents a label, button, or line of text in the CCIP administration utility. Make sure that each line of translated text remains on the same line as the original text. Do not change the line numbers.

3 Generate the catalog file by entering the following command:

gencat ccipadmn.cat *msg_file*

where *msg_file* is the translated file.

Now that you have created the new catalog file, you must install it.

Installing the localized catalog file

Then, install the file following this procedure.

1 Before you install the localized catalog file, make sure that the following commands are included in your .profile file:

VOICE_HOME=*home_directory*
VOICE_LANG=*language_directory*
NLSPATH=$NLSPATH:$VOICE_HOME/ui_lang/$VOICE_LANG
export $VOICE_HOME $VOICE_LANG $NLSPATH

where *home_directory* is the directory in which ccip is located (by default, it is /u/nortel), and *language_directory* is the directory containing the localized catalog file (by default, it is en_US).

2 If you change any of these commands, log out and log back in again, so that the changes take effect.

3 Copy the new ccipadmn.cat to $CCIP_HOME/install.

4 Change the working directory to $CCIP_HOME/install by entering

cd $CCIP_HOME/install

5 Copy the catalog file to the $VOICE_LANG directory by entering

cp ccipadmn.cat $VOICE_HOME/ui_lang/$VOICE_LANG

Next time you start the CCIP administration utility, it will display the localized text.

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CCIP
CCIP User Guide

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