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3B CALL MANAGEMENT SYSTEM

Release 2, Issue 1.4

VECTORING ADMINISTRATION

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Introduction

3B Call Management System Vectoring Administration, Issue 4 (585-215-502) covers the administration of the Call Vectoring feature that is available in the 3B Call Management System (CMS), Release 2. This feature provides an administration interface to the Call Vectoring feature that is available with Automatic Call Distribution (ACD) on the DEFINITY* Communications System Generic 2 and System 85, Release 2, Version 4 (R2V4) switches. This feature also provides reporting capabilities on the Call Vectoring feature when used on a Generic 2, System 85, or Generic 3i switch. Together, the 3B CMS, Release 2, and ACD with Call Vectoring provide a total package for enhanced call processing to a phone center.

Definition of Call Vectoring

Call Vectoring is a flexible and sophisticated way of routing and processing incoming calls to the switch. Call Vectoring consists of user definable, multistep routing tables, or Call Vectors. These programmable call vectors direct calls to specified on-network or off-network destinations, to queues in ACD splits, or to treatment such as forced first announcements, multiple recorded announcements, forced disconnect, forced busy, or delay treatment.

Intended Audience

Most CMS organizational structures consist of a primary administrator, who has access to all parts of the CMS, and secondary administrators (such as split supervisors) with limited access to parts of the CMS. This document is aimed at the CMS or the Generic 2/ System 85/ Generic 3i switch primary administrator, but can be used by anyone with the administrative responsibility for the Call Vectoring feature.

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Organization and Use of This Document

This document covers only the portion of the 3B CMS, Release 2 software related to the Call Vectoring feature. Use this document with the *3B Call Management System Administration* (585-215-504) and the *3B Call Management System Custom Reports* (585-215-503) documents. All areas of CMS not related to Call Vectoring are covered in those documents. Also, many of the concepts and general rules of CMS administration that apply to the material in this document are covered only in those documents.

The chapters of this document are organized as follows:

Chapter 1 "How to Use This Document" is an overview of the CMS Vectoring Administration document and the material contained in the various chapters.

Chapter 2 "Generic 2/ System 85 Call Vectoring Feature Description" is a general overview of call vectoring on the Generic 2 and System 85 switches and the CMS functions and processes involving vectoring. The chapter also describes the vectoring commands.

Chapter 3 "Generic 3i Call Vectoring Feature Description" is a general overview of call vectoring on the Generic 3i switch and the CMS functions and processes involving vectoring. The chapter also describes the vectoring commands.

Chapter 4 "Reports" tells you how to order the standard real-time and historical reports associated with vectoring, and also describes every item contained in each report.

Chapter 5 "Dictionary" tells you how to name and describe your vectors and vector directory numbers (VDNs) to make your reports easier to read.

Chapter 6 "Configuration" tells you how to move trunk groups to VDNs, move VDNs to vectors, create and specify vectors, and review the vectors specified for individual splits. The syntax of each vectoring command is given along with recommended combinations of commands for the most efficient vector design.

Chapter 7 "Exceptions" tells you how to specify exception conditions for vector activity so that CMS notifies you when an unusual call handling event occurs. The chapter also tells you how to order exception reports on vectors.

Chapter 8 "Administration" tells you how to give access permission to CMS users for specific vectors within your call center.

Chapter 9 "Maintenance" tells you how to archive summary historical data for vectors and VDNs and how to check the number of measured VDNs and vectors in your system.

Glossary The Glossary defines important terms used in this document.

Other Publications on Call Management System

3B Call Management System Planning, Configuration, and Implementation (585-215-601)

3B Call Management System Quick Reference (585-215-704)

3B2 Call Management System Installation and Maintenance (585-215-104)

3B Call Management System Administration (585-215-504).

3B Call Management System Graphics Administration (585-215-505).

3B Call Management System Custom Reports (585-215-503).

Other Publications on Call Vectoring

DEFINITY Communications System Generic 2 and System 85 Features Description (555-104-301).

DEFINITY Communications System Generic 1 and Generic 3i Features Description (555-200-201).

DEFINITY Communications System Generic 3i Implementation (555-230-650).

DEFINITY Communications System Generic 3 Call Vectoring Guide (555-230-520).

Notation Conventions Used in This Document

The following list summarizes conventions used in this document:

Terminal keys used in data entry appear in text enclosed in a key shape: for example, ESC and CHANGE. This is true for both hard-labeled keys and screen-labeled keys.

Screens are reproduced throughout the document to help you understand the data entry. Small boxes in these screens are field number references and do not actually appear on CMS's screen displays.

In the procedures sections of the document, instructions for data input are often followed by bullet items. Such items provide background information.

- They look like this.

In the procedures sections of the document, system response to input is shown in brackets, as in the following example:

[The Vector Status report appears.]

Abbreviations and Acronyms Used in This Document

The following abbreviations and acronyms are used in this document.

3B CMS	3B Call Management System
ACD	Automatic Call Distribution
ASA	Average Speed of Answer
MAAP	Maintenance and Administration Panel
SMT	System Management Terminal
CSM	Centralized System Management
ISDN	Integrated Services Digital Network
PRI	Primary Rate Interface
SLK	Screen-Labeled Key
VDN	Vector Directory Number

NOTES

General Information

This chapter gives an overview of the Call Vectoring feature on the DEFINITY Communications System Generic 2 and the System 85 R2V4. This feature is used with the Automatic Call Distribution (ACD) feature to enhance a call center's call-handling capabilities.

The optional Vectoring feature of the 3B Call Management System, Release 2, is used to generate reports about vectors and Vector Directory Numbers (VDNs) on a Generic 2 or System 85 switch that has the ACD and Call Vectoring features. In addition, the Vectoring feature of 3B CMS can be used to administer the Call Vectoring feature of the switch.

NOTE

The 3B CMS can also operate on Generic 2/ System 85 R2V4 switches that do not have the Call Vectoring feature.

See *DEFINITY Communications System Generic 2 and System 85 Features Description* (555-104-301) for detailed information on the Call Vectoring feature.

NOTE

For information on the Generic 3i Call Vectoring feature, see Chapter 3 in this document.

The following terms are used throughout this document to describe CMS vectoring.

Table 2-1 Call Vectoring Terms

vector	A programmed set of call-processing steps through which designated incoming calls are processed.
step	An action an incoming call may receive in a vector.
command	The keyword of a step that describes the action to be executed on an incoming call.
condition	A parameter in a step that determines when a command will be executed on an incoming call.
VDN	Vector Directory Number, the number used to enter vector processing. Can be accessed by automatic-in or dial-repeating trunks.

The Concept of Vectoring

Vectors and VDNs

Call Vectoring is a highly flexible way of processing incoming calls to the Generic 2 and System 85 R2V4 switches. Call Vectoring consists of two basic components — vectors and Vector Directory Numbers (VDNs).

Vectors are user-defined, multistep call-processing tables that direct calls to on-network or off-network destinations and, more specifically, to ACD splits and call treatments such as announcements, forced disconnect, forced busy, and delay. By using a vector, you can custom-design ways of treating specific incoming calls. A vector may have up to 15 steps and can be created using one of the following administration tools:

> On a System 85, the Maintenance and Administration Panel (MAAP), the Visual Maintenance and Administration Panel (VMAAP), the System Management Terminal (SMT), or Centralized System Management (CSM).
>
> On a Generic 2, the DEFINITY Manager II.

A vector may also be created using the Configuration— Vector Specification screen in CMS.

VDNs are 3-, 4-, or 5-digit switch extension numbers that provide a software link between trunk groups and vectors, thereby enabling incoming ACD calls to be processed by vectors. VDNs are **not** assigned to actual telephone lines connected to agents.

For a call on an automatic-in trunk group, the Central Office (CO) seizes a trunk to the switch. The switch then connects the call to the VDN the trunk group is assigned to. The call then connects to the vector the VDN is assigned to. Thus, for automatic-in trunk groups, the number dialed by the caller may not have the same final digits as the VDN.

For a call on a dial-repeating trunk group [also known as a Direct Inward Dial (DID) trunk group], the CO passes the final 3, 4, or 5 digits of the call to the switch, which recognizes the digits as a VDN and connects the trunk to the VDN. The call then connects to the vector the VDN is assigned to. Thus, for dial-repeating trunk groups, the final digits dialed by the caller **are** the VDN.

A VDN may also be dialed from a voice terminal connected to the switch. In this case, only the VDN digits must be dialed. The call will then connect to the vector the VDN is assigned to.

VDNs can be reassigned to different vectors or deactivated while still being retained in memory in the switch.

How Call Vectoring Affects Call Routing and Treatment

The way an ACD determines how to process incoming calls is quite different when Call Vectoring is used. With a non-vectoring ACD, a trunk call enters the ACD and is routed to a split. If the call is not immediately answered by an agent in the split, either the call will be placed in the split's queue and given treatment such as recorded announcements or music, or the call will be intraflowed (forwarded) to another destination. The basis for the treatment of an incoming call, therefore, is the split to which the call's trunk group is assigned and the parameters of the split.

In a vectoring ACD, the call must pass through a vector on its way to a split — *if* a split is its destination. As a result, the vector becomes the focal point for call handling rather than the split. As soon as a VDN connects to a vector, vector processing starts. The call may be queued to a split; but, if no agent connects immediately, the call may be queued to another split. The call may also be given an announcement not associated with a split. Thus, vectors operate independent of splits. In other words, a vector operates as the call's manager going from announcement to delay and from queue to queue, until the call is answered, abandoned, or given some other final treatment such as forced disconnect or busy.

A VDN is associated with trunks or trunk groups, which, in turn, normally handle one type of call — for example, a 1-800 number that handles reservations or a local customer service number. However, more than one VDN may be mapped to a vector, so each vector (and split) can simultaneously service a variety of call types.

In addition, more than one vector can send calls to a particular split, and the calls sent from each vector can have different priorities in that split's queue. This priority assignment is one of several variable conditions available within a vector for the treatment of calls.

This multi-VDN call handling in vectors and splits offers considerably more flexibility than the usual single-purpose split configurations common to non-vectoring systems. Yet, because of the availability of standard reports on VDNs, calls can still be tracked by type or purpose. Also, agents can efficiently handle calls from multiple VDNs if the Names Database in the switch is used to display VDN names on voice terminals.

Vectoring Applications

Though a vector stored in the switch could by-pass the ACD environment entirely, managing the queues of ACD splits is the primary application of vectoring. Keeping a call queued to a split while providing a series of other processing options is one way a vector manages a queue. Other common applications include:

Special treatment for selected callers.

For example, calls from preferred credit card customers may receive priority treatment, yet not require handling by a separate split. Agents in the same split could handle both preferred customers and all other customers. The split could queue calls into a maximum of four priority levels, and calls from different VDNs could go to these different levels, with preferred customers having "top" priority. This means that when all agents are busy in this split, calls from preferred customers would go to the top of the queue ahead of other callers already in queue.

Night treatment.

For example, between 5:00 p.m. and 8:00 a.m., the vector could route calls to some specified destination, such as an announcement and a disconnect. During business hours, the vector could send calls to splits for connections with agents or queue normally.

Off-loading periodic excess calls resulting from promotions, seasonal trends, or regular daytime fluctuations in calls.

For example, a vector could test a split for the number of calls already in queue. If the number were above a certain threshold, the vector would bypass that split and route the call somewhere else— for example, the attendant. If the number of calls queued to the split were below a certain threshold, the vector would queue the call to that split.

Emergency treatment for conditions such as bad weather (when agents cannot get to work) or telecommunications facilities that are not operating correctly.

Removal of selected calls from the system.

Answer Supervision in a Vectoring Environment

Answer supervision is a signal, sent from the switch to the serving CO, that tells the CO to begin recording toll charges for a call. However, while a call waits in queue, AT&T ACD software may delay sending answer supervision so that the ACD owner/ operator or caller can avoid excess toll charges. Thus, a caller waiting in queue may hear CO ringback until answer supervision is sent.

With call vectoring, the desire to delay answer supervision can influence the choice of call treatment in a vector. Generally, answer supervision is sent when either a call is answered or CO ringback stops. So, a recorded announcement or waiting with music will trigger answer supervision. Disconnecting a call will also trigger answer supervision.*

Trunk routing from the CO also influences the triggering of answer supervision. For an auto-in trunk, waiting with silence triggers answer supervision for the call. On the other hand, waiting with silence on a dial-repeating trunk does *not* trigger answer supervision. Therefore, when trunk routing to a vector (via the VDN) is changed, the effect on answer supervision should be considered.

ASAI Gateway

The Adjunct/ Switch Application Interface (ASAI) Gateway is a hardware and software package that provides a two-way gateway between the switch and call-routing software running on a host computer. The ASAI gateway (formerly known as the Integrated Telemarketing Gateway [ITG]) enables the host computer software to monitor and control certain incoming, outgoing, and internal calls. The ASAI Gateway software runs on an AT&T 3B2 computer.

A special ISDN— PRI link is required between the switch and the 3B2. The switch and 3B2 communicate by exchanging messages over the D (signaling) channel of the ISDN— PRI link. The ASAI Gateway software acts as an interpreter between the switch and the host computer. The Gateway translates messages from the switch into a form the host computer can understand and vice versa.

Figure 2-1 shows an example of an ASAI Gateway configuration. The ASAI Gateway is called a two-way gateway because information travels through the gateway in two directions; from the switch to the call-center software and from the call-center software to the switch.

* Except with ISDN trunks.

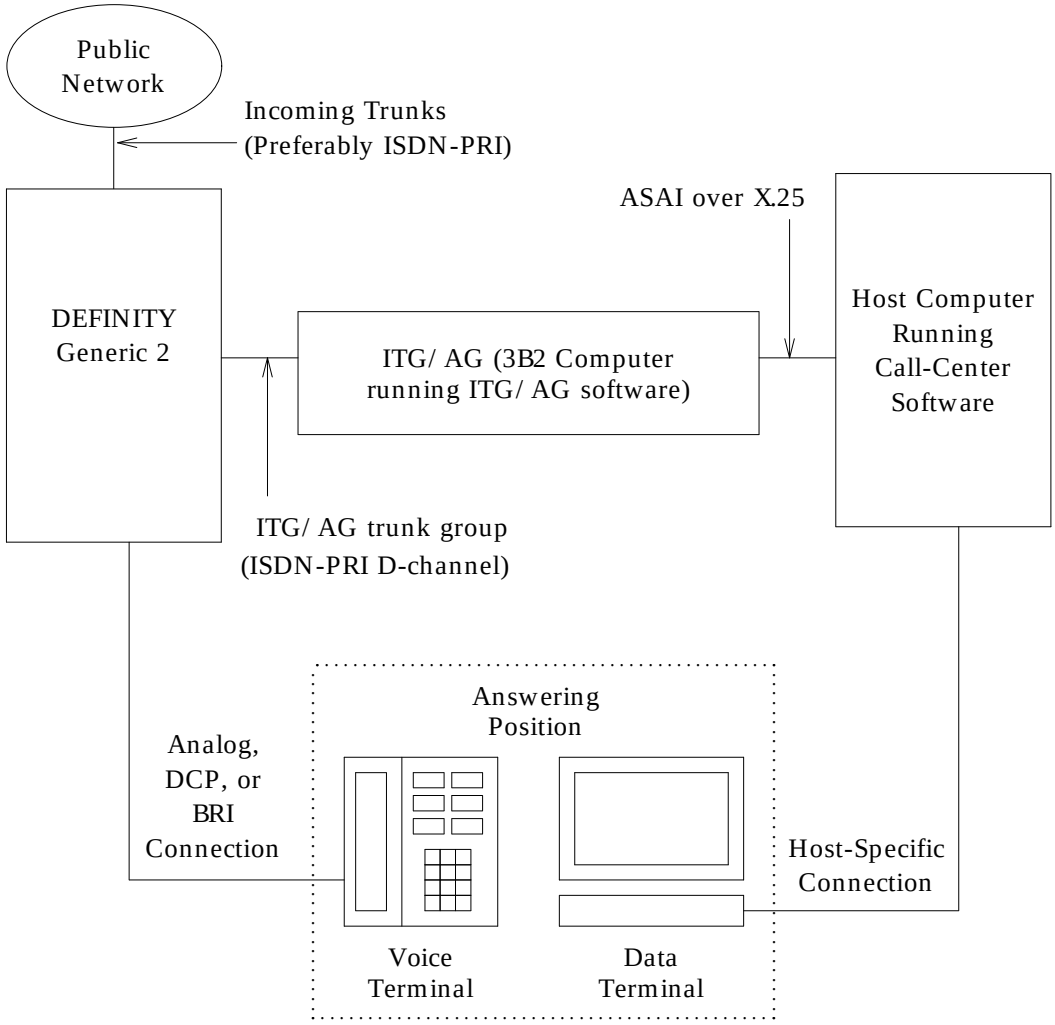


Figure 2-1 Sample ASAI Configuration

Depending on the type of incoming trunks and the available network services, the switch can receive Automatic Number Identification (ANI) and Dialed Number Identification Service (DNIS) from the public network and send it through the ASAI Gateway to the call-center software. ANI is the calling party's 10-digit billing number. DNIS is the dialed number, typically the VDN associated with the call. To receive ANI and DNIS, the incoming trunks (from the AT&T network) must be ISDN— PRI. Furthermore, *Megacom* 800 service and INFO-2 service are required to receive ANI.

The host computer software uses incoming call information to determine how to handle the call and to retrieve information from a customer database. For example, the switch may send DNIS information to the call-center software, which tells the software that the call is directed to the

number used by foreign language speaking customers. The host computer software determines that a multilingual agent or split should handle the call and sends this call-handling information through the gateway back to the switch.

Information from the host computer software can specify one of the following destinations for an incoming call:

A VDN (Vector Directory Number).

An internal extension number.

A private-network number.

A public-network number.

At the same time the host computer software sends routing information to the switch, the software can deliver information from the customer database to the agent's data terminal. The host computer software can coordinate the timing of these events so that the database information arrives at the agent's terminal at the same time (or before) the voice call arrives.

For incoming calls, the switch uses a ''route to'' vector command to send call information through the gateway to the host computer software and, depending on the call-handling information sent back from the host computer, may use another vector to deliver the incoming call to an answering position.

Vectoring With Look-Ahead Interflow

Look-Ahead Interflow* is a feature that is available when two or more ACDs have the Call Vectoring feature **and** use the Integrated Services Digital Network (ISDN)/ Primary Rate Interface (PRI).

In a system without Look-Ahead Interflow, when a call is interflowed (see the ''Route To'' command described later in this chapter) from a vector in one ACD to a vector in another ACD, the receiving vector automatically handles the call. If the split(s) associated with the receiving vector are not immediately available to accept a call, the vector may give the call a forced busy signal, an announcement, a forced disconnect, or some other treatment. If the call had already received some announcement(s) or waited a long time while the original (sending) vector processed the call, the receiving vector may give the call inappropriate treatment.

* Interflow is the redirection of calls received at an ACD to a destination outside of the switch.

Look-Ahead Interflow helps prevent interflowed calls from receiving inappropriate treatment. With Look-Ahead Interflow, the vector receiving an interflowed call may reject the call and send the call back to the sending vector for continued processing. The receiving vector may reject a call based on one of the following conditions:

- The call would receive a forced disconnect (with no announcement) if the receiving vector processed the call.
- The call would receive a forced busy if the receiving vector processed the call.
- The receiving vector tried once to reroute the call to yet another destination and the rerouting failed.

When the call returns, the original vector resumes processing the call with the step that follows the interflow step.

Look-Ahead Interflow permits effective coordination of backup processing by vectors in remote ACDs. However, since the use of Look-Ahead Interflow may require the use of public trunking facilities, additional toll charges may be incurred. Therefore, Look-Ahead Interflow should be used primarily when processing options on the local switch have been exhausted.

See the *DEFINITY Communications System Generic 2 and System 85 Features Description* (555-104-301) for complete information on Look-Ahead Interflow.

NOTE

In recording data, CMS makes no distinction between Look-Ahead Interflow calls and standard interflow calls.

The Vectoring Commands

You use vectoring commands to route and treat incoming calls in ways that exactly meet the needs of your organization and your customers. This section describes and illustrates the various vectoring commands and conditions.

The Queue to Main Split Command

The ‘‘Queue to Main Split’’ command sends a call to a split and assigns a queuing priority level to the call in case all agents are busy. A call sent with this command will either connect to an agent in the split or enter the split’s queue. A call that queues to a split will remain in queue until:

The call reaches an available agent

The caller abandons

Control passes to another queue specified in a later step — either another ‘‘queue to main split’’ command or a ‘‘check backup split’’ command

A ‘‘disconnect’’ command is executed

A ‘‘busy’’ command is executed

A ‘‘route to’’ command redirects the call.

Sample Vectors 1 through 6 illustrate the ‘‘queue to main’’ command. Vector 1 illustrates the simplest ‘‘queue to main split’’ command with no priority established.

```
Vector: 1

STEP              ACTION & CONDITIONS
  1     queue to main split 5 priority low
```

You can change the priority specification to ‘‘med,’’ ‘‘high,’’ or ‘‘top.’’ Priority levels in a queue operate like layers of calls. All calls in one layer are served before any calls in the layer below are served. One way to use this feature is to create two vectors (see Vectors 2 and 3) with the same split specified in the ‘‘queue to main split’’ command, but with different priority specifications.

```
Vector: 2

STEP           ACTION & CONDITIONS
1     queue to main split 1 priority top
```

```
Vector: 3

STEP           ACTION & CONDITIONS
1     queue to main split 1 priority med
```

Two sets of callers can be, in effect, ‘‘layered’’ within one split. One group calling into one VDN (assigned to Vector 2) will be given more priority than another group calling another VDN (assigned to Vector 3).

Use of priority levels other than ‘‘low’’ is optional.

In this queued state, other commands can be used to process the call:

```
Vector: 4

STEP           ACTION & CONDITIONS
1      queue to main split 1 priority top
2      announcement number 23
3      wait time 10 secs hearing ringback
4      announcement number 23
```

At all times during processing by Vector 4, the call is queued until either abandonment or agent connection. Theoretically, you could chain announcements and delays indefinitely to keep the caller on the line using this type of processing logic.

Multiple ‘‘queue to main’’ commands can occur in one vector as well. The effect is to either find an available agent in the first split or, depending on the interim processing, pass on the call to the second split’s queue. Vector 5 is an example of this type of processing:

```
Vector: 5

STEP        ACTION & CONDITIONS

1      queue to main split 1 priority top
2      announcement number 23
3      wait time 10 secs hearing silence
4      announcement number 23
5      queue to main split 2  priority top
```

A variant of the multiple ‘‘queue to main’’ type vector is requeuing to the same split at *different* priorities:

```
Vector: 6

STEP        ACTION & CONDITIONS

1      queue to main split 1 priority med
2      announcement number 23
3      wait time 10 secs hearing 1
4      announcement number 23
5      queue to main split 1  priority top
```

Step 5 causes calls to requeue to split 1, but at a higher priority.

NOTE Calls will queue to a split even if it is unstaffed. You should use ‘‘Go to’’ commands (that take effect when the number of staffed agents is less than one) to prevent calls from queuing to unstaffed splits.

The Check Backup Command

While a call is still queued to the main split, the ‘‘check backup split’’ command checks the status of a second split every 2 seconds for possible forwarding of the call to that split. The command will forward a call to the split if the split meets certain conditions specified as part of the command.

The conditions for forwarding can be based on:

The number of staffed agents in the backup split

The number of available (idle) agents in the backup split

The length of the backup split’s queue at the specified priority level and any higher levels.

The ‘‘age’’ of the backup split’s oldest queued call at the specified priority level and any higher levels.

The switch will check the backup splits in a vector up to 1000 times and, if the call does not queue to the backup split or go to a different vector step, CMS will then disconnect the call.

You may want to follow a ‘‘check backup split’’ command or series of commands with a ‘‘wait’’ or ‘‘announcement’’ step to allow the switch time to actually check the backup split(s). If a ‘‘check backup split’’ command is immediately followed by a ‘‘route to’’ command, the switch will send calls to the ‘‘route to’’ destination without first completing its check of the backup split.

Vector 7 shows an example of conditions for forwarding calls to a backup split:

```
Vector: 7

STEP          ACTION & CONDITIONS
1       queue to main split 1 priority med
2       announcement number 20
3       check backup split 2 priority med if available agents   1
 . . . or
3       check backup split 2 priority med if queued calls   1
```

In Vector 7, after the call queues to split 1, the software decides if an agent is available in split 1. If not, it proceeds with the announcement and checks split 2 for the threshold condition. If neither an agent is available in split 1 nor Step 3’s threshold condition is met, the call remains queued to split 1 and CMS continues to check split 2 every 2 seconds for its threshold condition. The call can be queued only to one split at a time. But by setting low queue-length thresholds— for example, the second alternative in Vector 7’s third step— you can *simulate* multiple split queuing. In the second version of Step 3, calls would remain queued to split 1 unless 0 calls were queued to split 2. In other words, the call would not leave split 1’s queue except to become call number 1 in split 2’s queue.

You can actually write a vector to check several backup splits while queued to main. Or you can check the same backup split at several priorities. For example, see Vector 8.

```
Vector: 8

STEPS          ACTION & CONDITIONS
1       queue to main split 1 priority med
2       check backup split 2 priority med if calls queued    10
3       check backup split 2 priority high if calls queued    100
        [same split, different priority level] or . . .
3       check backup split 3 priority low if calls queued    20
        [different split]
```

In Vector 8, the threshold conditions of three splits are repeatedly checked for possible call forwarding. With two ‘‘queue to main’’ commands, the call is queued either to one or to the other split, depending on which command CMS read last. But with the ‘‘check backup’’ command, the call will check the backup split, *while it is still queued to the main split.* That means the call could connect to an agent in the backup split if the conditions are met or the main split at any time if an agent becomes available.

NOTE If a call actually *queues to* a backup, it is no longer queued to the primary. Be sure you understand the difference between *queuing to* a backup and *checking* a backup.

NOTE Calls will queue to a split even if it is unstaffed. Therefore, if your condition for forwarding is number of calls in queue or age of oldest call, be sure the backup split will be staffed.

The Route To Command

A ‘‘route to’’ command removes a call from the vector and sends the call to another destination. The destination is specified as a number, 1 through 95, where the number comes from an Abbreviated Dial (AD) group list assigned to Call Vectoring. Via the AD group list, the ‘‘route to’’ step can send a call to one of the following destinations:

A local extension

The attendant (or the attendant queue)

Another VDN on the local switch.

A Host Computer Access trunk group — This destination requires the use of ASAI Gateway.

A remote extension or VDN — This routing constitutes interflow, and may constitute Look-Ahead Interflow, if the sending switch and the receiving switch have the Look-Ahead Interflow feature.

NOTE

You may access these remote destinations using the ARS feature with the public network or the AAR feature with a private network — a Main/ Satellite/ Tributary network.

If a call is queued to a split when it reaches a ‘‘route to’’ step, the ‘‘route to’’ step removes the call from the split queue when the routing succeeds.

Contingencies are:

If the local extension is busy, the next step in the vector will take effect. If the local extension has a multiple-appearance voice terminal, the call will ring on an idle appearance. If the local extension has a single-appearance voice terminal, the call will try to connect to a forwarding destination. A call cannot be put on hold or in Call-Wait from a single-appearance voice terminal.

If a trunk is not available to the remote switch, the next step in the vector will take effect.

If the attendant is not available, the call will enter the attendant queue.

If Look-Ahead Interflow is active for both the local and remote ACD, and a vector on the remote ACD rejects the routed call, the next step in the original vector will take effect. (See the ‘‘Vectoring With Look-Ahead Interflow’’ section earlier in this chapter.)

If the ‘‘route to’’ is the last step in the vector or is the last step before a ‘‘stop’’ step, the software will retry the route-to destination every 2 seconds until it succeeds or 40 minutes passes. After 40 minutes, the switch disconnects the call.

If a ‘‘route to’’ destination does not exist in the AD list, the next step in the vector will take effect.

Also, if a call is routed to any number other than another VDN, CMS stops tracking that call when it connects to the number.

The 95 potential ‘‘route to’’ targets can be changed at a voice terminal if, when the group list is administered at the switch, that voice terminal’s extension is assigned as the ‘‘controlling extension.’’

Vector 9 is an example of a ‘‘route to’’ command:

```
Vector: 9

STEP        ACTION & CONDITIONS

1    queue to main split 1 priority med
2    check backup split 2 priority med available agents   1
3    wait time 30 secs hearing silence
4    route to 34
5    announcement 22
6    wait time 4 secs hearing silence
```

In this example, if calls reach Step 4, they dequeue from split 1. If AD number 34 is busy (or otherwise unavailable), the announcement and wait will process.

The Stop Command

The ‘‘Stop’’ command removes the call from vector processing and continues whatever call processing is currently in effect. Indefinitely continued call processes are:

queue to main split

check backup split

route to checking (if the destination or trunk group is busy)

wait (delay), with silence, ringing, or music.

NOTE

The caller hears default silent feedback if a ‘‘queue to main split,’’ ‘‘check backup split,’’ or ‘‘route to’’ step remains in effect and no ‘‘wait’’ step with ringing or music is also in effect.

The real-time and historical vector data bases stop receiving data on a call when a stop step is reached, though the call continues to be tracked in the split and VDN data bases. Thus, the ‘‘Total Time in Vector’’ in the vector reports can differ from the ‘‘Total Time in VDN’’ in the VDN reports. Number of answered and abandoned calls can also differ in the vector and VDN reports.

NOTE

You normally use a ‘‘Stop’’ command to prevent execution of later steps in the vector that should execute only when branched to by earlier ‘‘Go to’’ steps. See the following section, ‘‘The Go To Command.’’

Vector 10 is an example of the ‘‘Stop’’ command:

```
Vector: 10

STEPS        ACTION & CONDITIONS

1   go to step 8 if calls queued in split 1-20   priority med
2   queue to main split 1 priority med
3   check backup split 2 priority med if available agents is   0
4   wait time 10 secs hearing ringback
5   announcement number 30 [" All agents are busy.  Your call will be
    answered in its order of arrival." ]
6   wait time 10 secs hearing music
7   stop
8   queue to main split 3 priority med
```

In Vector 10, the stop command separates the two basic call processes linked in the vector: the queuing to split 1 and checking split 2; and the queuing to split 3, which only happens if the threshold condition in Step 1 is met (greater than 20 calls queued to split 1). The stop keeps the call queued to split 1 indefinitely, with the caller hearing music.

The Go to Command

The ‘‘Go to’’ command is a branching step allowing conditional or unconditional movement to later or earlier steps.

Conditional branching is used to compensate for heavy traffic or for night-weekend service. Calls in queue before a ‘‘go to’’ will stay in queue after the branch until a new queue or terminating step is encountered.

The conditions of branching are:

Time of Day (and Day of Week)

Number of agents staffed in any split

Number of agents available in any split

Number of calls queued (at a given priority) to any split

Age of the oldest call waiting (at a given priority) in any split’s queue.

NOTE

A ‘‘Go to’’ statement with a ‘‘number of calls queued’’ or ‘‘age of oldest call waiting’’ condition takes effect if the condition is true for the priority level specified and all priority levels **above** it. For example, specifying a ‘‘med’’ priority level means that the ‘‘go to’’ will take effect if the number of calls queued or the age of oldest call waiting condition is met for all calls at the medium, high, and top priority levels.

Unconditional branching will generally be backward to an earlier step, typically applying to loop-type vector patterns. Common loops would be constantly repeated announcements used for emergencies, for snow days in a school district or corporation, and for phone numbers that have recently changed. Loops of this type continue until the caller abandons or the ‘‘go to’’ step executes 1000 times for the call.

Examples of vectors using ‘‘go to’’ commands are shown in Vectors 11 and 12.

Vector 11 uses the ‘‘go to’’ command to select one of two announcements callers should hear, depending on how busy the main split is. The ‘‘stop’’ command is used to keep callers not processed by the ‘‘go to’’ step from hearing two contradictory announcements.

```
Vector: 11

STEPS        ACTION  &  CONDITIONS

1     go to step 5 if calls queued in split 1 is    10 priority med
2     queue to main split 1 priority med
3     announcement 30   [" Please hold. Your call will be
      answered in its order of arrival." ]
4     stop
5     announcement 40 [" All agents are busy.  Please try again
      in a few minutes." ]
```

The ‘‘time of day’’ condition of the ‘‘go to’’ command can be used to process calls differently, depending on when they arrive. For example, see Vector 12:

```
Vector: 12

STEP       ACTION & CONDITIONS

1      go to step 7 if time of day is all 17:00 to all 07:00
2      go to step 7 if time of day is sat 00:00 to sun 23:59
3      queue to main split 1 priority med
4      announcement number 30 [" Please hold. Your call will be processed
       in its order of arrival." ]
5      wait 45 secs hearing music
6      stop
7      announcement number 31 [" Our office is closed.  Please call back
        between 7:00 a.m. and 5:00 p.m." ]
```

Vector 12 sends calls made outside of business hours to announcement 31, which states that the office is closed. Calls made during business hours will begin processing at Step 3.

NOTE You must enter a character in the first blank of the ‘‘time’’ field. If the hour is a single digit number, enter zero *0* in the first blank. For example, 7 a.m. should be entered as *07:00*.

The Disconnect Command

The ‘‘Disconnect’’ command ends treatment of a call and removes the call from the switch. A caller that has been disconnected hears a click and then silence. This command also allows the optional assignment of an announcement that will play immediately before the disconnect. Usually, if the switch has not yet sent answer supervision, it does so immediately before disconnecting a call, regardless of whether it plays an announcement. For ISDN calls, however, the switch sends answer supervision only if an announcement plays with the disconnect.

NOTE CMS does not record calls receiving a forced disconnect as abandoned calls. Instead, they are recorded under a separate database item, FDISCCALLS.

The ‘‘disconnect’’ command is useful in overload and after-hours situations, as illustrated by Vectors 13 and 14.

```
Vector: 13

STEP         ACTION & CONDITIONS

1    go to step 5  if calls queued in split 1 is    20 priority low
2    queue to main split 1 priority med
3    announcement number 30  [" Please hold, etc." ]
4    stop
5    disconnect after announcement number 34 [" All agents are busy.
     Please try again in a half hour." ]
```

```
Vector: 14

STEP       ACTION & CONDITIONS

1   go to step 6 if time of day is all 17:00 to all 07:00
2   go to step 6 if time of day is sat 00:00 to sun 23:59
3   queue to main split 1 priority med
4   announcement number 2  [" Please hold, etc." ]
5   stop
6   disconnect after announcement number 4  [" Our office is closed.
    Please call back Monday through Friday 7:00 a.m. to 5:00 p.m." ]
```

The Busy Command

The ‘‘Busy’’ command removes a call from vector processing and gives the caller a busy signal. Dial-repeating trunk calls that reach a ‘‘busy’’ command always receive a busy signal. However, auto-in trunk calls receive a busy signal only if answer supervision had previously been sent (via an announcement or wait with music step). If answer supervision had not been sent prior to an auto-in trunk call reaching a ‘‘busy’’ command (that is, the call has not received an announcement or a wait step with music), the switch skips the busy command and processes the call with the next step and the caller continues to hear CO ringback.

If a busy signal continues for 20 seconds, the switch disconnects the call and, for non-ISDN

calls, sends answer supervision.

NOTE CMS does not record calls receiving a forced busy as abandons. Instead, they are recorded under a separate database item, FBUSYCALLS.

Vector 15 shows an example of the ''Busy'' command.

```
Vector: 15

STEPS    ACTIONS  &  CONDITIONS

1    go to step 5 if calls queued in split 1 is   20 priority low
2    queue to main split 1 priority med
3    wait time 20 secs hearing ringback
4    stop
5    busy
```

In Vector 15, the busy signal is used to get callers off the line if more than 20 calls are already queued to the main split.

The Announcement Command

At any point in a vector table, an announcement may be introduced. Up to 84 announcement channels (numbered 16 through 99) can be implemented in the switch and specified by number. Announcements can have maximum lengths from 16 to 128 seconds, depending on the recording hardware used along with the PBX. When reaching an announcement step, a caller may wait up to the length of the announcement before actually hearing it. This wait occurs because each announcement plays only for calls currently queued to it, and once an announcement starts playing, new calls that queue to the announcement must wait until it ends and begins again. The caller will hear the previous treatment until the announcement starts. Announcements can be chained in sequential vectoring steps to extend the message beyond the maximum length, but a pause will occur between each announcement.

Answer supervision is sent at the beginning of an announcement. When an announcement finishes, the caller hears silence unless the announcement step is followed by additional treatment like other announcements or waiting with music.

The Wait Command

The ‘‘Wait’’ command is generally used to set a length of time for a call to wait in the main split’s queue and to specify one of the following treatments while the call advances in queue:

Silence

Ringing

Music.

You can set the wait time for 2 to 998 seconds.

NOTE

The name of this step is ‘‘delay’’ in switch administration and ‘‘wait’’ in CMS administration. The operation of the step is identical in both cases.

Table 2-2 summarizes the treatment of the wait step:

Table 2-2 Operation of the Wait Step

DELAY TYPE	CALL TYPE	DISPOSITION IF ANS SUPV NOT SENT PREVIOUSLY	DISPOSITION IF ANS SUPV SENT PREVIOUSLY
	dial-repeating	Answer supervision is not sent; caller hears ringback from the switch.	Caller hears silence.
Silence	auto-in	Answer supervision is not sent; caller hears ringback from Central Office (CO).	Caller hears silence.
	dial-repeating	Answer supervision is not sent; caller hears CO ringback.	Caller hears ringback.
Ringback	auto-in	Answer supervision is not sent; caller hears CO ringback.	Caller hears ringback.
	dial-repeating	Answer supervision is sent; caller hears music.	Caller hears music.
Music	auto-in	Answer supervision is sent; caller hears music.	Caller hears music.

A caller on a dial-repeating trunk will hear silence, not ringback, until a ‘‘Wait’’ step takes effect; the caller may, as a result, think the call did not get through. Therefore, early in a vector handling dial-repeating trunks (perhaps after a ‘‘Queue to Main Split’’ command), you should enter a ‘‘Wait’’ step with ringback, music, or an announcement.

NOTE

If a wait step is used as the final step in a vector, the length of the wait specified can affect how CMS data is collected on the vector. If the wait is specified to be short (i.e., 2 seconds for instance), the CMS will stop tracking calls in that vector after a 2-second wait. The caller will not know the difference as the treatment specified for the wait will continue until the call is answered or abandoned, regardless of the time specified. You can overcome this loss of vector data, if desired, by specifying the wait to be 998 seconds. The VDN and split data would not be affected by either version of the wait step and would continue to be collected in either case.

Vectors 16 and 17 are examples of the ‘‘wait’’ command.

```
Vector: 16

STEPS      ACTION & CONDITIONS

1    queue to main split 1 priority low
2    wait time 2 secs hearing ringback
```

```
Vector: 17

STEPS      ACTION & CONDITIONS

1    queue to main split 1 priority low
2    wait time 998 secs hearing ringback
```

The CMS will stop accumulating vector-related data after 2 seconds on calls under Vector 16’s control. Not so for Vector 17: vector data will continue to be accumulated on 17’s calls for 998 seconds (over 16 minutes). For both vectors, however, the VDN and split statistics will be accumulated for as long as the *call* lasts.

Thus, the ‘‘Total Time in Vector’’ statistic in the historical vector reports would show different results for Vectors 16 and 17. The ‘‘Total Time in VDN’’ statistic in the historical VDN reports would not be affected by this difference. Also, the number of abandoned and answered calls could differ in VDN and vector reports if Vector 16 were used.

Agent Call Handling in a Vectoring ACD

The way agents handle calls in a vectoring ACD is almost the same as the way they handle calls in a non-vectoring ACD. Most vectors send calls to splits, and the calls are then distributed to agents according to the specified ACD method. In most cases, a call is connected to an agent or the caller abandons, and vector processing ends for that call. As calls complete and terminate, agents change their **states** accordingly. (See Appendix C, ''ACD Basics,'' in the *Call Management System Administration* [585-215-504] for a description of agent states.) As agents change states, change of status messages are sent to the 3B computer for collection in the CMS data base.

In a non-vectoring ACD, agents in a split tend to receive calls from a fixed series of published numbers and trunk groups. In a vectoring ACD, since a split may be mapped quite freely across many vectors, an agent in a split may have to handle calls from a wide variety of sources. As a result, the capability of agents in a split to handle a vector's calls should be considered before specifying the split as a main or backup split in the vector.

Voice Terminal Displays for Agents

Agents with display voice terminals may see a display identifying the source of a call (if Dialed Number Identification Service is available). With vectoring, the call identification displayed on an agent's voice terminal consists of at least two fields (more, if queue status display is active):

```
[Source of call]  to [VDN name or number]
```

This format is especially useful when each VDN is set up to receive calls for a certain product or service, and several VDNs terminate to one vector and split. With this format, a split's agents can easily deal with calls for multiple products because their voice terminals will notify them of the product or service associated with the call.

For example, an agent might be trained to answer: ''Hello. . . Product A sales'' when he or she sees this display with a VDN name:

```
trunk group  to  Product A Sales
```

The same agent could then answer: ''Hello . . .Product B Sales,'' when this display appeared:

```
trunk group  to  Product B Sales
```

''Product A Sales'' and ''Product B Sales'' would be the Names Database entries at the switch for two VDNs assigned to the same vector. These messages would appear for calls routed through these two VDNs, independent of the assigned vector or splits within the vector.

With VDNs as call identifiers, a variety of trunk groups can also be mapped to one VDN (including DID, CO, Tie, and FX trunk groups), and calls carried on those trunk groups will show the same terminal message for the same product.

NOTE

If splits handle more than one product, split reports will not distinguish call traffic for specific products. So, CMS provides VDN reports to collect and display call traffic data on VDNs used as call-identifiers.

Required Switch Administration for Vectoring

The MAAP, VMAAP, SMT, or another system management tool is used by the switch administrator to administer the Call Vectoring feature at the switch. The switch administrator must perform the following tasks and procedures with the system management control before the CMS vectoring feature can operate:

Creation of VDNs

VDNs are administered as ''dummy'' or ''soft'' extensions. Procedure 000, Word 1 is administered with ''Vectoring Directory Number'' as the port type, and no equipment location.

Assignment of VDNs to Vectors

VDNs are initially assigned to vectors in Procedure 031, Word 1.

Assignment of Trunk Groups to VDNs

Trunk groups are initially assigned to VDNs in Procedure 031, Word 2.

Assignment of Names

Names are assigned to both trunk groups and VDNs in the switch Names Database using Procedure 012. These names appear on the voice terminal displays of agents as the source and destination of calls.

NOTE

You should use the names assigned in the switch Names Database as the names (synonyms) you assign in the CMS Dictionary. This will ensure that the names appearing in CMS reports and screens match those appearing on agent voice terminals.

CMS Measurement of VDNs

Procedure 031, Word 1 initially assigns CMS measurement to a VDN; Procedure 11-5 initially assigns CMS measurement to a trunk group used for vectoring. These procedures must be performed for each VDN and trunk group. Limits of 128 vectors (the PBX's limit) and 255 VDNs (a CMS limit) exist for the number that can be measured. The CMS administrator can check the number of measured vectors and VDNs using the Maintenance— Session Status screen. (See Chapter 11, ''Maintenance,'' in the *Call Management System Administration* [585-215-504] for more information about the Session Status screen.)

Vector Specifications

Vectors can be created and defined at the switch or within CMS. Vector specifications are administered at the switch using Procedure 030, Word 3.

"Route to" Destinations

An Abbreviated Dial (AD) group list for the Call Vectoring feature must be assigned at the switch using Procedure 030, Word 1. The numbers in the AD group list, which represent the destinations calls may be routed to, must be defined at the switch using Procedure 059, Words 1, 2, and 3. For external destinations, Automatic Route Selection (ARS) or Automatic Alternate Routing (AAR) tables must also be created at the switch. These tables define alternate trunk routes that calls can use to reach destinations outside of the local switch (through a private network or the public network). Refer to the *DEFINITY Communications System Generic 2 and System 85 Features Description* (555-103-301) for ARS/ AAR and DCS procedures.

Also, a controlling extension for the AD group list may be assigned at the switch (Proc 059, Word 1). This assignment gives the voice terminal at that extension control of the numbers on the AD group list.

Using CMS With Vectoring

Configuring Vectors

The Vectoring feature gives the CMS an expanded role in the configuration of ACD call handling because CMS is easier and more convenient to use for vector administration than the switch system management tools. To control the configuration of your vectors, you can perform the following tasks:

Move trunk groups to other VDNs (**Configuration-Trunk Group Assignments** screen).

Move VDNs to other vectors (**Configuration-Vector Directory Number Assignment** screen).

Create and specify vectors (**Configuration-Vector Specifications** screen).

View, for a specific split, the list of vectors that try to queue calls to that split (**Configuration-Vector Split References** screen).

The Vectoring feature in the ACD/ CMS environment makes certain features of a standard CMS unnecessary. The direct assignment of trunk groups to splits is no longer necessary since trunk groups are indirectly assigned to splits through trunk group to VDN assignments, VDN to vector assignments, and vector queuing to splits. Also, the intraflow function has been replaced by the ‘‘check backup split’’ and ‘‘route to’’ vectoring steps. Therefore, the CMS will report that a call has been flowed in or flowed out when a ‘‘check backup split’’ routes a call to another split or a ‘‘route to’’ command routes a call to another internal destination. The ‘‘route to’’ command, when routing calls to external destinations, also replaces the interflow function.

Naturally, the split supervisor’s ability to administer intraflow from his or her voice terminal has been eliminated with the intraflow feature.

Split-by-split administration of announcement and announcement delay has been replaced by the call-oriented announcement and delay feature administered using the ‘‘wait,’’ ‘‘disconnect,’’ and ‘‘announcement’’ vectoring commands.

The split’s Queue Directory Number (QDN) has been eliminated in a vectoring environment. All calls are routed either directly (internal calls or external dial-repeating) or indirectly (auto-in) to VDNs.

The ability to specify a split as the final point in a coverage path is replaced by the use of VDNs as the final point in a coverage path. Call Forwarding— Busy and Don’t Answer and Call Forwarding— Don’t Answer cannot be used to forward calls to a VDN; Call Forwarding— Follow Me can. However, none of the Call Forwarding features can forward calls **from** a VDN. *DEFINITY Communications System Generic 2 and System 85 Features Description* (555-104-301) covers the interactions of Call Vectoring with other switch features.

NOTE The Configuration— Split Parameters screen and the Configuration— Split Trunk Group Assignments screen are not available in CMS with vectoring because the functions of those screens are no longer necessary.

Generating Reports

CMS collects VDN and vector data and stores it in VDN and Vector files in each of the CMS data bases. You can view this data by accessing the following reports that cover vectoring:

Standard Real-time Reports, specifically the Vector Status and VDN Status Reports. You administer and order these reports in the **Reports** subsystem.

Standard Historical Reports, specifically the Daily, Weekly, and Monthly Vector Reports, and the Daily, Weekly, and Monthly VDN Reports. You administer and order these reports in the **Reports** subsystem.

The Daily Vector Exceptions Report, which you administer and order in the **Exceptions** subsystem.

NOTE For more information on how CMS data bases are organized, see Chapter 5 in the *Call Management System Custom Reports* (585-215-503).

You can also create custom reports on vectors and VDNs using the **Custom Reports Creation** subsystem and the Calculations and Constants portions of the **Dictionary** subsystem.

Vectoring data can be stored for up to 31 days for half-hour data and 387 days for daily data. These periods represent the maximum ages of vectoring data that can appear in a report. These parameters are administered by the CMS administrator from the **Maintenance— Archive Parameters** screen.

Vector and VDN synonyms can also be assigned to vectors and VDNs to replace the switch identifiers in reports for more meaningful displays. You assign these synonyms in the **Dictionary** subsystem.

NOTE Do not confuse these synonyms with Names Database names for VDNs and trunk groups. Names Database names are switch-resident. An effort should be made to coordinate names in the CMS Dictionary and those in the switch Names Database.

Administering Vector Access

You must administer read and write access permissions to CMS users for specific vectors created in CMS (**Administration-Vector Access** screen). Read permission allows a CMS user to view vector reports and parameters established for vectors. Write permission allows a CMS user to create or change parameters for a specific vector.

NOTES

General Information

This chapter gives an overview of the Call Vectoring feature on the DEFINITY Communications System Generic 3i. This feature is used with the Automatic Call Distribution feature to greatly enhance the call-handling capabilities of a call center. This chapter also gives an overview of other switch features that may be used in conjunction with Call Vectoring. These features are:

Call Prompting

Adjunct Routing (not actually a feature, but a capability of Call Vectoring available with the Adjunct/ Switch Application Interface [ASAI] feature)

Look Ahead Interflow

The Vectoring feature of the 3B Call Management System, Release 2, is used to generate CMS reports about vectors and Vector Directory Numbers (VDNs) on a Generic 3i switch that has Call Vectoring.

NOTE

In general, you cannot use 3B CMS to administer the Call Vectoring feature of the switch. See ''Vector Directory Number Assignments'' in Chapter 6 for information on vectoring administration you can do with 3B CMS.

NOTE

The 3B CMS can also operate on Generic 3i switches that do not have the Call Vectoring feature.

See *DEFINITY Communications System Generic 1 and Generic 3i Feature Description* (555-200-201) or *DEFINITY Communications System Generic 3i Implementation* (555-230-650) for more information about the Call Vectoring, Call Prompting, ASAI, and Look Ahead Interflow features.

The following terms are used throughout this document to describe Call Vectoring and related features.

Table 3-1 Call Vectoring Terms

vector	A programmed set of call-processing steps.
step	One action or treatment that a call may receive.
command	The keyword of a step that describes the action or call treatment.
condition	Part of a command that specifies under what circumstances the command is executed.
VDN	Vector Directory Number, the number dialed to enter vector processing. Can be accessed by automatic-in or dial-repeating trunks, or by local station users.

The Concept of Vectoring

Vectors and VDNs

Call Vectoring is a highly flexible way of processing incoming calls to the Generic 3i switch. Call Vectoring consists of two basic components — vectors and Vector Directory Numbers (VDNs).

A **vector** is a set of commands that specifies the treatment for specific incoming calls. Call treatment includes: queuing calls to one or more ACD splits, giving caller feedback (such as music or ringing), checking the status of backup splits, playing announcements, routing calls to internal or external destinations, and more. Call treatment can change automatically based on time of day and day of week, the amount of time the oldest call in queue has waited, or changing traffic or staffing conditions. A vector may have up to 15 steps and can be created using the DEFINITY Manager I.

VDNs are 1- to 5-digit switch extension numbers that provide access to vectors, thereby enabling local and incoming calls to be processed by vectors. VDNs are **not** assigned to actual telephone lines connected to agents.

For a call on an automatic-in trunk group, the Central Office (CO) seizes a trunk to the switch. The switch connects the call to the VDN the trunk group is assigned to and then to the vector the VDN is assigned to. Thus, for automatic-in trunk groups, the number dialed by the caller may not have the same digits as the VDN.

For a call on a dial-repeating trunk group [also known as a Direct Inward Dial (DID) trunk group], the CO passes the final digits of the call to the switch, which recognizes the digits as a VDN and connects the trunk to the VDN. Then the switch connects the call to the vector the VDN is assigned to. Thus, for dial-repeating trunk groups, the final digits dialed by the caller **are** the VDN.

For 1-800 and 1-900 service using AT&T Megacom trunk groups, the AT&T network determines a call's origin and assigns Dialed Number Identification Service (DNIS) digits to the call. The CO passes the DNIS digits to the switch over a DID trunk group. These same digits are assigned in the switch as a VDN. When the switch receives the DNIS digits, it recognizes them as a VDN and connects the call to the assigned vector. Therefore, with Megacom, the DNIS assigned to a call by the AT&T network must match the VDN administered in the switch.

A VDN may also be dialed from a voice terminal connected to the switch. In this case, only the VDN digits must be dialed. The call will then connect to the vector the VDN is assigned to.

VDNs can be reassigned to different vectors or deactivated while still being retained in memory in the switch.

How Call Vectoring Affects Call Routing and Treatment

The way an ACD determines how to process incoming calls is quite different when Call Vectoring is used. With a non-vectoring ACD, a trunk call enters the ACD and is routed to a split. If the call is not immediately answered by an agent in the split, either the call will be placed in the split's queue and given treatment such as recorded announcements or music, or the call will be intraflowed (forwarded) to another destination. The basis for the treatment of an incoming call, therefore, is the split to which the call's trunk group is assigned and the parameters of the split.

In a vectoring ACD, the call must pass through a vector on its way to a split — *if* a split is its destination. As a result, the vector becomes the focal point for call handling rather than the split. As soon as a VDN connects to a vector, vector processing starts. The first step in the vector may queue the call to the split that typically answers this type of call. If an agent is not immediately available to answer the call, an announcement could be played or the status of other splits could be checked to see if they could answer the call more quickly. Thus, vectors operate independent of splits. The steps that make up a vector specify a call's treatment, the order in which treatments are given, and the conditions under which treatment are given.

NOTE

As a result of vector processing, a call may be queued to as many as three splits simultaneously. This capability, called **multiple split queuing**, is available only on a switch that has the Call Vectoring feature.

A VDN can be assigned to one or more trunk groups, which normally handle one type of call — for example, a 1-800 number that handles reservations or a local customer service number. However, more than one VDN can be assigned to a vector, so a single vector can process a variety of call types. Furthermore, more than one vector can send calls to a particular split, and calls sent from different vectors can be assigned different priority levels.

This multi-VDN call handling in vectors and splits offers considerably more flexibility than the usual single-purpose split configurations common to non-vectoring systems. Yet, because of the availability of standard reports on VDNs, calls can still be tracked by type or purpose.

Vectoring Applications

Vectors can be used to process ACD and non-ACD calls. However, managing the queues of ACD splits is the primary application of vectoring. Queuing calls to ACD splits while providing a series of other call treatments is one way a vector manages a queue. Other vectoring applications include:

Multiple split queuing

A vector can simultaneously queue calls to as many as 3 splits. Multiple split queuing can greatly reduce the risk of calls waiting too long when any one split has many calls in queue.

Special treatment for selected callers.

Calls from preferred credit card customers can receive priority treatment, yet not require handling by a separate split. Agents in the same split could handle both preferred customers and all other customers. As many as four priority levels can be used to queue calls to a split. Calls to different VDNs can be queued at different priority levels, with preferred customers having ‘‘top’’ priority. This means that when all agents are busy, calls from preferred customers go to the top of the queue ahead of calls already in queue.

Night treatment.

When the office is closed, a vector could route calls to an alternate destination, or play an information announcement and disconnect calls. During business hours, the same vector could send calls to one or more ACD splits.

Off-loading excess calls resulting from promotions, seasonal trends, or regular daytime fluctuations in call volume.

A vector could test a split for the number of calls in queue. If the number of calls queued to the split were below the specified threshold, the vector would queue the call to that split. If the number were above the specified threshold, the vector would bypass that split and check the status of another split, or route the call to another destination.

Emergency treatment for conditions such as bad weather (when agents cannot get to work) or telecommunications facilities that are not operating correctly.

Removal of selected calls from the system.

Answer Supervision in a Vectoring Environment

Answer supervision is a signal, sent from the switch to the serving CO, that tells the CO to begin recording toll charges for a call. However, while a call waits in queue, AT&T ACD software may delay sending answer supervision so that the ACD owner/ operator or caller can avoid excess toll charges. The caller hears CO ringback until answer supervision is sent.

With call vectoring, the desire to delay answer supervision can influence the choice and order of call treatments specified in a vector. Answer supervision is sent when either a call is answered or before the caller hears a recorded announcement or music. Answer supervision is also sent when a call is disconnected.*

Trunk routing from the CO also influences the triggering of answer supervision. For an auto-in trunk, waiting with silence triggers answer supervision for the call. On the other hand, waiting with silence on a dial-repeating trunk does *not* trigger answer supervision. Therefore, when trunk routing to a vector (via the VDN) is changed, the effect on answer supervision should be considered.

Vector Control of ACD Calls

On a Generic 3i, you must specify whether a split is vector controlled or not. For vector-controlled splits, call-treatment parameters are assigned on a VDN or vector basis. For non-vector-controlled splits, call-treatment parameters are assigned on a split basis.

Vector-Controlled Splits, automatic-in trunk groups are assigned to VDNs and each VDN is assigned to a vector. ACD calls (and other incoming calls) are directed to vectors that specify both the order in which and the conditions under which treatments are given. Call treatment is based on the vector and treatments specified in the vector.

Non-Vector-Controlled Splits, automatic-in trunk groups and call-treatment parameters are assigned to a particular ACD split. ACD calls go directly to a split queue and are given the treatment assigned to that split. Call treatment is based on the split and parameters assigned to the split.

As Figure 3-1 shows, a system can have both vector-controlled and non-vector-controlled splits.

* Except with ISDN trunks.

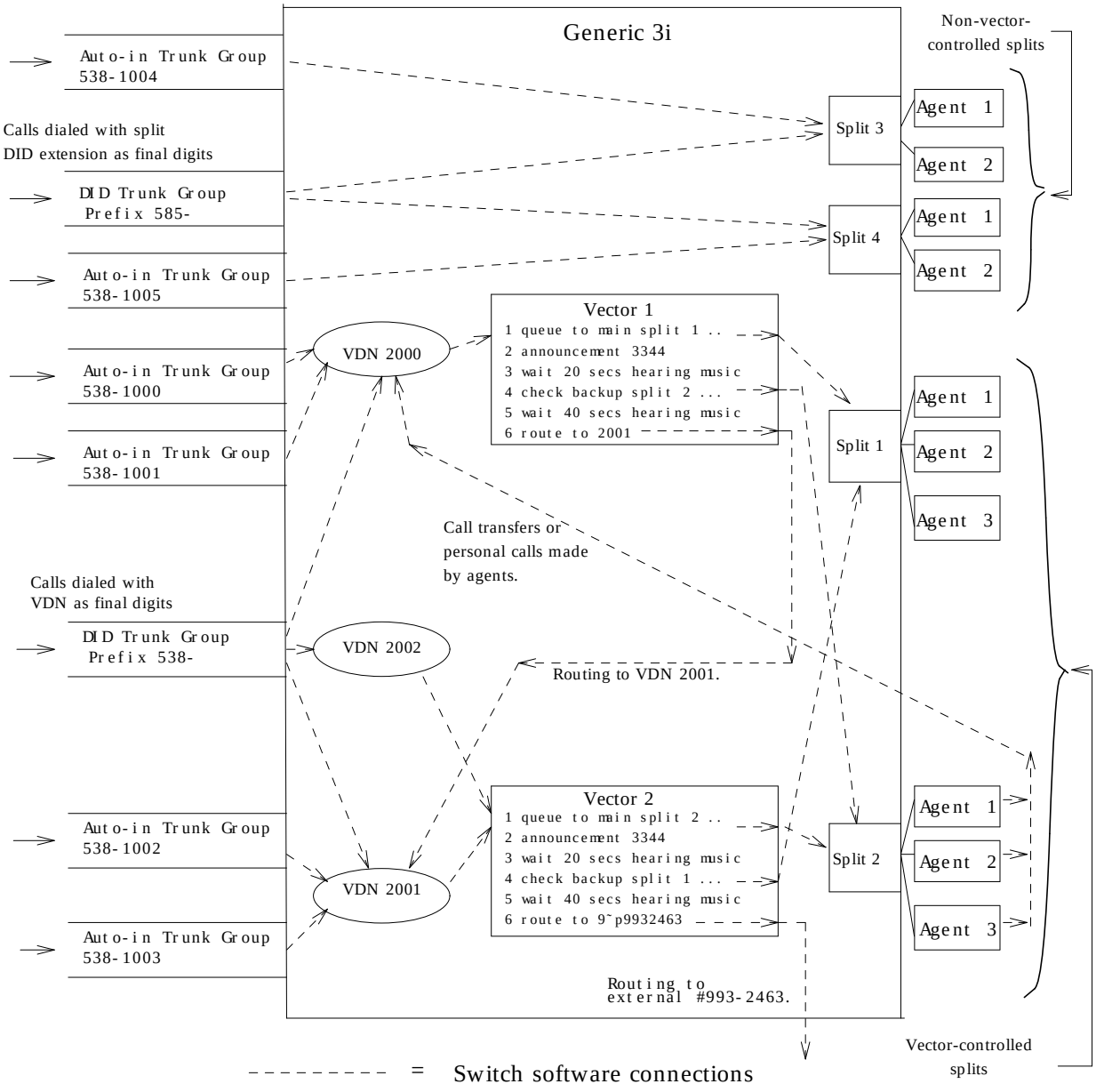


Figure 3-1 Generic 3i Configuration With Vector-Controlled and Non-Vector-Controlled Splits

Vectoring-Related Features

Call Prompting

The Call Prompting feature of the Generic 3i switch provides flexible call handling based on dialed digits collected from a caller. Call Prompting uses special vector commands to both collect caller-entered touch-tone digits and use those collected digits to determine call treatment.

To use the Call Prompting feature, the switch must also have the Call Vectoring feature. See the Call Vectoring description in this chapter for information about VDNs, vectors, and other vector commands.

The Vectoring feature of 3B CMS is used (and required) to generate CMS reports about vectors and Vector Directory Numbers (VDNs) on a Generic 3i switch that has Call Prompting.

NOTE

You must administer vectors that contain Call Prompting commands using the DEFINITY Manager I. You cannot administer Call Prompting using CMS.

See ‘‘The Prompting Commands’’ later in this chapter for more information on the Call Prompting feature.

Adjunct Routing (with ASAI)

The ASAI feature available with the Generic 3i switch provides an Integrated Services Digital Network (ISDN) interface between the DEFINITY Generic 3i and one or more host computers. This interface enables the switch to talk to the host computer(s). A host computer typically runs business software to which the switch’s incoming calls are associated. The host computer, therefore, may process call data received from the switch as an aid to running its business software. As a result of this processing, the host computer may also send messages back to the switch to tell the switch where to send calls. In this capacity as a call distributor, the host computer also serves as an adjunct processor to the switch.

The ASAI feature, therefore, enables a switch with Call Vectoring to pass control of call routing to the adjunct/ host. This control of call routing by the adjunct, called **adjunct routing**, further enhances the flexibility of the Vectoring feature for handling incoming calls to the ACD.

Adjunct routing works basically as follows:

1. When a call enters vector processing, the switch sends the adjunct information about the call.
2. During vector processing, the switch requests routing information from the adjunct via an ‘‘adjunct routing’’ command in the vector.
3. The adjunct processes the call information it received from the switch to determine where the call should go.
4. The adjunct sends routing information to the switch.

   NOTE Until the switch receives routing information from the adjunct, the switch continues processing the call with any additional vector commands.

5. The switch routes the call to the appropriate destination.

To determine where to route calls, the adjunct can use any of the following call information:

The calling party number

The billing number

The Dialed Number Identification Service (DNIS) identification

Touch-tone digits entered by the caller (if the switch also has the Call Prompting feature).

See ‘‘The Adjunct Routing Command’’ later in this chapter for more information about adjunct routing.

Other ASAI Capabilities

ASAI offers a variety of other capabilities that may or may not be used in conjunction with adjunct routing. Some of these capabilities are:

Data Screen Delivery

The adjunct uses call information to display the proper data screen at the data terminal of the agent receiving the call.

Data Screen Transfer

The switch can notify an adjunct when a voice call is transferred. This enables the adjunct to transfer the corresponding data screen.

ViewFirst Dialing

An adjunct can initiate a call on behalf of an agent. The agent may have previewed a data screen and used the data keyboard to tell the adjunct to begin the call.

AutoPace Dialing

An adjunct can initiate calls on behalf of a group of agents. The switch classifies calls, notifies the adjunct of each classification, and sends only answered calls to the agents.

Look Ahead Interflow

The Look Ahead Interflow feature enables ACD calls to be intelligently interflowed (redirected) from one switch to another. The key word here is intelligently. Two switches that have the Call Vectoring and ISDN— PRI features (in addition to Look Ahead Interflow) can ‘‘talk’’ to each other and determine if conditions are appropriate for interflowing a call. If conditions at the switch that would receive the call are not acceptable, the interflow request can be rejected.

Without Look Ahead Interflow, the decision to interflow a call can only be based on conditions at the sending switch (the switch the call is currently at). This can result in a call interflowing from a busy split to an even busier split.

With Look Ahead Interflow, the decision to interflow a call (at the sending switch) and to accept or reject the call (at the receiving switch) can be based on any combination of the following conditions:

Time of day

Day of week

Number of calls in queue

Time the oldest call in queue has waited

Number of staffed agents

Number of available agents.

See ‘‘The Route To Command’’ later in this chapter for examples of Look Ahead vectors.

The Vectoring Commands

NOTE You **cannot** use 3B CMS to administer call vectors. Instead, you must use the DEFINITY Manager I switch administration tool.

You use vectoring commands to route and treat incoming calls in ways that meet the needs of your organization and your customers. This section describes and illustrates the various vectoring commands and conditions.

NOTE For information about Prompting commands, see ‘‘The Prompting Commands’’ section in this chapter.

The Queue to Main Split Command

The ‘‘Queue to Main Split’’ command sends a call to a split and assigns a queuing priority level. If one or more agents are available, the call is sent to an agent. If no agents are available, the call is queued at the specified priority level until:

Calls ahead of it in queue are answered and an agent becomes available

The caller hangs up (abandons the call)

A subsequent vector command (for example, a ‘‘route to,’’ ‘‘busy,’’ or ‘‘disconnect’’ command) causes the call to be removed from queue.

The following vectors illustrate the ‘‘queue to main split’’ command.

Vector 1 illustrates the simplest ‘‘queue to main split’’ command.

```
                                CALL VECTOR

 Number: 1                    Name tg18 to vdn5501
ASAI Routing? n                   Basic? y        Prompting? y

01. queue        to main split 5  priority l
02.
03.
```

The priority level shown in Vector 1, `l` for low, is the lowest priority. You can change the priority specification to `m` (medium), `h` (high), or `t` (top). Priority levels in a queue operate like layers of calls. All calls in one layer are served before any calls in the layer below are served. One way to use this feature is to create two vectors (see Vectors 2 and 3) with the same split specified in the ‘‘queue to main split’’ command, but with different priority specifications.

```
                                CALL VECTOR

 Number: 2                    Name tg19 to vdn5502
ASAI Routing? n                   Basic? y        Prompting? y

01. queue        to main split 1  priority t
02.
03.
```

```
                                CALL VECTOR

 Number: 3                    Name tg20 to vdn5503
ASAI Routing? n                   Basic? y        Prompting? y

01. queue        to main split 1  priority m
02.
03.
```

Two sets of callers can be, in effect, ‘‘layered’’ within one split. One group calling into one VDN (assigned to Vector 2) will be given more priority than another group calling another VDN (assigned to Vector 3).

Use of priority levels other than ‘‘low’’ is optional.

Once a call is queued to a main split, other commands can be used to process the call, as shown in Vector 4.

```
                                CALL VECTOR

 Number: 4                    Name tg21 to vdn5504
ASAI Routing? n                   Basic? y        Prompting? y

01. queue        to main split 1  priority t
02. announcement extension 3021
03. wait         time 10 secs hearing ringback
04. announcement extension 3022
05.
```

At all times during processing by Vector 4, the call is queued until either the caller abandons or an agent answers the call. Theoretically, you could chain announcements and delays indefinitely to attempt to keep the caller on the line.

A call can queue to as many as three splits simultaneously. One way to queue a call to more than one split is to use multiple ‘‘queue to main’’ commands. Another way is to use ‘‘check backup split’’ commands — see ‘‘The Check Backup Split Command’’ later in this chapter.

Vector 5 is an example of multiple split queuing using more than one ‘‘queue to main split’’ command.

```
                                CALL VECTOR

 Number: 5                    Name tg22 to vdn5505
ASAI Routing? n                   Basic? y        Prompting? y

01. queue        to main split 1  priority t
02. announcement extension 3021
03. wait         time 10 secs hearing silence
04. announcement extension 3022
05. queue        to main split 2  priority t
06.
```

A call remains queued (to as many as three splits) until:

The call is answered

Another vector command removes the call from queue (not shown in Vector 5)

The caller hangs up (abandons the call).

The switch skips a ‘‘queue to main split’’ command if:

The split’s queue is full. That is, the administered queue length (1-199) has already been reached.

The call is already queued to three different splits.

A queue is not assigned to the split and no agents are available.

The split is unstaffed.

If a ‘‘queue to main split’’ command specifies a split to which the call is already queued but specifies a different priority level, the call is requeued to the split at the new priority level. Vector 6 is an example of this type of requeuing.

```
                                CALL VECTOR

 Number: 6                    Name tg23 to vdn5506
ASAI Routing? n                   Basic? y        Prompting? y

01. queue        to main split 1  priority m
02. announcement extension 3021
03. wait         time 10 secs hearing silence
04. announcement extension 3022
05. queue        to main split 1  priority t
06.
```

Step 5 in Vector 6 causes calls to requeue to split 1, but at a higher priority.

The Check Backup Command

The ‘‘check backup split’’ command checks the status of a backup split for possible queuing of the call to that split at the specified priority level. The backup split can be the first, second, or third split to which a call is queued. You can set the command to queue a call to the split either unconditionally (that is, the call always queues to the backup split) or to queue a call if the split meets certain conditions. The conditions you can specify are as follows:

The number of staffed agents in the backup split.

The number of available (idle) agents in the backup split.

The number of calls in the backup split’s queue at the specified priority level or higher levels.

The ‘‘age’’ of the backup split’s oldest queued call at all priority levels.

NOTE

All calls in queue are checked for the oldest call waiting condition, but the call is queued at the specified priority if the condition is met.

If the condition specified in the ‘‘check backup split’’ command is met, the call queues to the backup split. Vector processing skips the command and continues with the next vector command if:

The specified condition is not met.

The split’s queue is full. That is, the administered queue length (1-200) has already been reached.

The call is already queued to three different splits.

A queue is not assigned to the split and no agents are available.

If a ‘‘check backup split’’ command specifies a split to which the call is already queued but specifies a different priority level, the call is requeued to the split at the new priority level.

Vector 7 shows one of the conditions for queuing calls to a backup split.

```
                                CALL VECTOR

 Number: 7                    Name tg24 to vdn5507
ASAI Routing? n                   Basic? y        Prompting? y

01. queue        to main split 1  priority m
02. announcement extension 3201
03. check        backup split 2  priority m if queued-calls < 2
04.
```

In Vector 7, the call first queues to split 1. Then an announcement plays (Step 2) and vector processing checks split 2 for the threshold condition (Step 3). If Step 3’s condition is not met, the call remains queued to Split 1 and no other checking is done for Split 2. If the condition for the ‘‘check backup split’’ command is met, the call queues to Split 2 **and** remains queued to Split 1.

You can write a vector that checks several backup splits while a call is queued to a main split. Or you can check the same backup split at different priorities or for different conditions. For example, see Vector 8.

```
                                CALL VECTOR

 Number: 8                    Name tg25 to vdn5508
ASAI Routing? n                   Basic? y        Prompting? y

01. queue        to main split 1  priority m
02. announcement extension 3201
03. check        backup split 2  priority m if calls-queued < 10
04. check        backup split 3  priority t if calls-queued < 20
06.
```

In Vector 8, the threshold conditions of two backup splits are checked for possible call queuing. In Step 3, if the ‘‘check backup’’ condition is not met at one priority level, the switch will use Step 4 to check another split at a higher priority level and with a condition more likely to be met. Of course, if both ‘‘check backup split’’ commands are successful, a call could be queued to Splits 1, 2, and 3 simultaneously.

The Route To Number Command

A ‘‘route to number’’ command removes a call from the vector and sends the call to another destination. The destination is specified as an extension or phone number of up to 16 digits. If a call is queued to one or more splits when it reaches a ‘‘route to’’ step, the ‘‘route to’’ step removes the call from the split queue(s) when the routing succeeds. The ‘‘route to’’ step can send a call to one of the following destinations:

A local extension or VDN

The attendant (or the attendant queue)

A remote extension or VDN

An external phone number

An extension for a non-vector-controlled split.

The destination number can also include any of the following special codes:

~ p (pause)

The ~ p code tells the switch to wait 1.5 seconds before sending the digits that follow. The pause is used to wait for dial tone on outgoing-trunk calls.

~ w (wait)

The ~ w code tells the switch to wait 4 to 10 seconds before sending the digits that follow. The wait is used when a longer wait for dial tone is needed on outgoing-trunk calls.

~ m (mark)

The ~ m code allows a # or * digit to be sent as part of the destination number when, for example, a dial access code is being sent to a remote switch. Without the ~ m code, the Generic 3i will not send the # and * digits.

~ s (suppress)

The ~ s code should precede any security code, such as a password or authorization code, that is sent as part of the destination number. ~ s prevents the security code from appearing on a display voice terminal by replacing each digit of the security code with an **s**.

Contingencies are:

If the local extension is busy, the next step in the vector will take effect. If the local extension has a multiple-appearance voice terminal, the call will ring on an idle appearance. If the local extension has a single-appearance voice terminal, the call will try to connect to a forwarding destination, if one exists.

If a trunk is not available to the remote switch, the next step in the vector will take effect.

If the attendant is not available, the call will enter the attendant queue.

If Look Ahead Interflow is active for both the local and remote ACD, and a vector on the remote ACD rejects the routed call, the next step in the original vector will take effect. (See the ''Look Ahead Interflow'' section earlier in this chapter.)

If a ''route to number'' command fails, the switch processes the next step in the vector and the call continues to receive the treatment established before the ''route to number'' command was tried.

If a call is routed, CMS stops collecting VDN, vector, and split data on that call when the routing succeeds. If the ‘‘route to number’’ fails and is the last step in the vector, CMS will continue to collect vector and VDN data (and split data if the call is queued) on the call until the caller hangs up or the call is answered.

NOTE

If a call routes to another destination on the local switch (intraflow), CMS pegs the VDN, vector, and split(s) with a call in the OUTFLOW database item. If a call routes to a remote destination (interflow), CMS pegs VDN and split(s) with a call in the OUTFLOW database item. However, CMS pegs the vector with a call in the ROUTEDCALLS database item.

Vector 9 is an example of a ‘‘route to number’’ command.

```
                                CALL VECTOR

 Number: 9                    Name tg26 to vdn5509
ASAI Routing? n                   Basic? y        Prompting? y

01. queue        to main split 1  priority m
02. check        backup split 2  priority m if available-agents > 1
03. wait         time 30 secs hearing silence
04. route        to number 9~p9085559999     if unconditionally
05. announcement extension 3022
06. wait         time 4   secs hearing music
07.
```

In this example, if a call reaches Step 4 and the switch seizes an outgoing trunk, the call is dequeued from main split 1 and, if queued, from backup split 2. If no outgoing trunks are available, the announcement and wait commands are processed and calls remain queued to splits 1 and 2.

Route To With Look Ahead Interflow

The ‘‘route to number’’ command can be used to interflow calls to a remote switch on a look-ahead basis (if both switches have the Call Vectoring and the Look Ahead Interflow features and the switches are connected by one or more ISDN— PRI trunk groups).

One or more conditional ‘‘go to step’’ commands in the sending vector determine if conditions are appropriate for interflowing a call. If conditions are appropriate, the sending switch queries the receiving switch to determine if it can accept the call.

As with the sending vector, the receiving vector contains one or more conditional ‘‘go to step’’ commands that determine if conditions are appropriate for accepting a call. If conditions are appropriate, the receiving vector accepts the interflow request and the sending vector routes the call to the receiving switch. If conditions are not appropriate, the receiving vector rejects the interflow request and processing continues at the sending vector.

To accommodate the rejection of an interflow request, the sending vector should contain more than one ‘‘route to number’’ command or provide alternate call treatment such as an information announcement or a message-taking service.

NOTE

When recording data, CMS makes no distinction between Look Ahead Interflow calls and standard interflow calls.

Vectors 10 and 11 show how a company might use the Look Ahead Interflow feature to balance the call load between two offices. Vector 10 is an example of a sending vector.

```
                                CALL VECTOR

 Number: 10                   Name tg27 to vdn5510
ASAI Routing? n                   Basic? y        Prompting? y

01. wait         time 0  secs hearing ringback
02. queue        to main split 4  priority l
03. go to        step 5  if oldest call-waiting in split 4  < 30
04. route        to number 9~p2135550001
05. wait         time 10 secs hearing ringback
06. announcement extension 3301
07. wait         time 0  secs hearing music
08.
```

Steps 1 and 2 provide caller feedback (ringing) and queue calls to split 4 at low priority. Step 3 tests split 4 and branches to Step 5 if the oldest call in queue has waited less than 30 seconds. Steps 5 through 7 provide a 10-second delay, an announcement and music, the normal processing for calls waiting in split 4's queue.

If the oldest call in split 4's queue has waited 30 seconds or more (the condition specified in Step 3 is not met), Step 4 queries the receiving vector to determine if it can accept the call and, if accepted, interflows the call.

Vector 11 is an example of a receiving vector.

```
                                CALL VECTOR

 Number: 11                   Name tg28 to vdn5511
ASAI Routing? n                   Basic? y       Prompting? y

01. go to        step 9  if staffed agents in split 2  < 1
02. go to        step 9  if oldest call-waiting in split 2  > 5
03. go to        step 9  if calls queued in split 2  > 19 priority l
04. queue        to main split 2  priority m
05. wait         time 12 secs hearing ringback
06. announcement extension 2301
07. wait         time 20  secs hearing music
08. go to        step 6  if unconditionally
09. busy
10.
```

Steps 1, 2, and 3 test split 2 and branch to Step 9 if the specified conditions are met. That is, interflow requests are rejected (Step 9) if split 2 is unstaffed, if the oldest call in queue has waited more than 5 seconds, or if more than 19 calls are in queue.

If the conditions specified in Steps 1 through 3 are not met, Step 4 accepts the call and queues it to split 2 at medium priority. Step 5 delays vector processing for 12 seconds while callers hear ringing. Steps 6 through 8 provide music and a repeating delay announcement.

The Stop Command

The ‘‘Stop’’ command stops processing of subsequent vector steps. However, any previously established call treatment continues. That is, calls queued to a split remain in queue and caller feedback established by a ‘‘wait’’ or ‘‘announcement’’ command continues.

NOTE The caller hears default silent feedback if no ‘‘wait’’ command with ringing or music or ‘‘announcement’’ command is in effect.

The real-time and historical vector databases stop receiving data on a call when a stop step is reached, though the call continues to be tracked in the split and VDN data bases. Thus, the ‘‘Total Time in Vector’’ in the vector reports can differ from the ‘‘Total Time in VDN’’ in the

VDN reports. Number of answered and abandoned calls can also differ in the vector and VDN reports.

NOTE You normally use a ‘‘Stop’’ command to prevent execution of later steps in the vector that should execute only when branched to by earlier ‘‘Go to’’ steps. See the following section, ‘‘The Go To Step Command.’’

Vector 12 is an example of the ‘‘Stop’’ command.

```
                                CALL VECTOR

 Number: 12                   Name tg29 to vdn5512
ASAI Routing? n                   Basic? y        Prompting? y

01. go to        step 8  if calls-queued in split 1  > 20 priority m
02. queue        to main split 1  priority m
03. check        backup split 2  priority m if available-agents > 0
04. wait         time 10 secs hearing ringback
05. announcement extension 3300
06. wait         time 10  secs hearing music
07. stop
08. queue        to main split 3 priority m
09.
```

In Vector 12, the stop command separates the two basic call processes linked in the vector: the queuing to split 1 and checking split 2; and the queuing to split 3, which only happens if the threshold condition in Step 1 is met (greater than 20 calls queued to split 1). The stop command keeps the call queued to split 1 (and possibly split 2) indefinitely, with the caller hearing music.

The Go To Step Command

The ‘‘Go to’’ command is a branching step allowing conditional or unconditional movement to later or earlier steps.

Conditional branching is used to compensate for heavy traffic or for night-weekend service. Calls in queue before a ‘‘go to’’ will stay in queue after the branch until a new queue or terminating step is encountered.

The conditions of branching are:

Time of Day (and Day of Week)

Number of agents staffed in a split

Number of agents available in a split

Number of calls queued (at a given priority and all higher priorities) to a split

Age of the oldest call waiting in a split's queue.

NOTE A ''Go to step'' command with a ''number of calls queued'' condition takes effect if the condition is true for the priority level specified and all priority levels above it. For example, specifying a ''med'' priority level means that the ''go to'' will take effect if the ''number of calls queued'' condition is met for all calls at the medium, high, and top priority levels.

Unconditional branching will generally be backward to an earlier step, typically applying to loop-type vector patterns. Common loops would be constantly repeated announcements used for emergencies, for snow days in a school district or corporation, and for phone numbers that have recently changed. Loops of this type continue until the caller abandons or the ''go to'' step executes 1000 times for the call. Vectors 13 and 14 are examples of vectors that contain ''go to'' commands.

Vector 13 uses the ''go to'' command to select one of two announcements callers should hear, depending on how busy the main split is. The ''stop'' command is used to keep callers not processed by the ''go to'' step from hearing two contradictory announcements.

```
                                CALL VECTOR

 Number: 13                   Name tg30 to vdn5513
ASAI Routing? n                   Basic? y        Prompting? y

01. go to        step 5 if calls-queued-in split 1  is > 10   priority m
02. queue        to main split 1  priority m
03. announcement extension 3001
04. stop
05. announcement extension 3002
06.
```

The ‘‘time of day’’ condition of the ‘‘go to’’ command can be used to process calls differently, depending on when they arrive. For example, see Vector 14.

```
                                CALL VECTOR

 Number: 14                   Name tg31 to vdn5514
ASAI Routing? n                   Basic? y        Prompting? y

01. go to        step 7 if time-of-day is all 17:00 to all 07:00
02. go to        step 7 if time-of-day is sat 00:00 to sun 23:59
03. queue        to main split 1  priority m
04. announcement extension 3001
05. wait         time 45  secs hearing music
06. stop
07. announcement extension 3002
08.
```

Vector 14 sends calls made outside of business hours to announcement extension 3002, which states that the office is closed. Calls made during business hours will begin processing at Step 3.

The Go To Vector Command

The ‘‘Go to vector’’ command is a branching step allowing conditional or unconditional movement to another vector. Unconditional branching to another vector allows you to create virtual vectors of more than 15 steps. Conditional branching is used to compensate for heavy traffic or for night-weekend service.

Calls that branch to another vector because of a ‘‘go to vector’’ command are processed by the new vector starting at Step 1. Calls that are in a split’s queue before reaching a ‘‘go to vector’’ command will stay in that queue after branching to the new vector until a terminating step is encountered. And because calls can be simultaneously queued to multiple splits, a ‘‘go to vector’’ step could enable a call to be simultaneously queued to two or three splits, with each split referenced by a different vector. For example, a call could be simultaneously queued to Split 1 referenced in Vector 1, Split 2 referenced in Vector 2, and Split 3, referenced in Vector 3.

The conditions of branching for a ‘‘go to vector’’ command are identical to those of a ‘‘go to step’’ command. They are as follows:

Time of Day (and Day of Week)

Number of agents staffed in a split

Number of agents available in a split

Number of calls queued (at a given priority and all higher priorities) to a split

Age of the oldest call waiting in a split’s queue.

NOTE

A ‘‘go to vector’’ command with a ‘‘number of calls queued’’ condition takes effect if the condition is true for the priority level specified and all priority levels above it. For example, specifying a ‘‘med’’ priority level means that the ‘‘go to’’ will take effect if the number of calls queued condition is met for all calls at the medium, high, and top priority levels.

If a call branches to another vector, CMS stops collecting vector data on that call for the old vector and starts collecting data for the new vector. However, since the call is still carried by the original VDN, CMS continues to collect data on the call for that VDN. Also, since the call remains queued to any splits it queued to prior to branching to another vector, CMS continues to collect data on the call for those splits.

The Disconnect Command

The ‘‘Disconnect’’ command ends treatment of a call and removes the call from the switch. A caller that has been disconnected hears a click and then silence. This command also allows the optional assignment of an announcement that will play immediately before the disconnect. Usually, if the switch has not yet sent answer supervision, it does so immediately before disconnecting a call, regardless of whether it plays an announcement. For ISDN calls, however, the switch sends answer supervision only if an announcement plays with the disconnect.

NOTE

CMS does not record calls receiving a forced disconnect as abandoned calls. Instead, they are recorded under a separate database item, FDISCCALLS.

The ‘‘disconnect’’ command is useful in overload and after-hours situations, as illustrated by Vectors 15 and 16.

```
                                CALL VECTOR

 Number: 15                   Name tg32 to vdn5515
ASAI Routing? n                   Basic? y        Prompting? y

01. go to        step 5  if calls-queued in split 1  is > 20 priority l
02. queue        to main split 30 priority m
03. announcement extension 3322
04. stop
05. disconnect   after announcement extension 3322
06.
```

```
                                CALL VECTOR

 Number: 16                   Name tg33 to vdn5516
ASAI Routing? n                   Basic? y        Prompting? y

01. go to        step 6  if time of day is all 17:00 to all 08:00
02. go to        step 6  if time of day is sat 17:00 to sun 08:00
03. queue        to main split 1  priority m
04. announcement extension 3344
05. stop
06. disconnect   after announcement extension 3333
07.
```

The Busy Command

The ‘‘Busy’’ command removes a call from vector processing and gives the caller a busy signal. Dial-repeating trunk calls that reach a ‘‘busy’’ command always receive a busy signal. However, automatic-in trunk calls receive a busy signal only if answer supervision had previously been sent (via an announcement or wait with music step). If answer supervision had not been sent prior to an automatic-in trunk call reaching a ‘‘busy’’ command (that is, the call has not received an announcement or a wait with music step), the switch skips the busy command and processes the call with the next step and the caller continues to hear CO ringback.

If a busy signal continues for 45 seconds, the switch disconnects the call and, for non-ISDN calls, sends answer supervision.

NOTE CMS does not record calls receiving a forced busy as abandons. Instead, they are recorded under a separate database item, FBUSYCALLS.

Vector 17 is an example of the ‘‘Busy’’ command.

```
                                CALL VECTOR

 Number: 17                   Name tg34 to vdn5517
ASAI Routing? n                   Basic? y        Prompting? y

01. go to        step 5 if calls-queued in split 1  is > 20  priority l
02. queue        to main split 1  priority m
03. wait         time 12 secs hearing ringback
04. stop
05. busy
06.
```

In Vector 17, the busy signal is used to get callers off the line if more than 20 calls are already queued to the main split.

The Announcement Command

The ‘‘announcement’’ command plays the announcement assigned to the specified extension. If the call is in a split queue, the call remains in queue while the announcement plays. After the announcement completes, if the call is still in queue, the caller hears silence until another ‘‘announcement’’ command, a ‘‘wait with ringback’’ command, or a ‘‘wait with music’’ command is processed. If the call connects to an agent’s terminal while the announcement is playing, the announcement stops and the caller hears ringback.

If the specified announcement is not in service, the switch skips the command and processes the call with the next vector command. Answer supervision, if not previously sent, is sent at the beginning of an announcement.

The Wait Command

The ‘‘Wait’’ command delays vector processing for the specified amount of time while callers hear silence, ringing (also called ringback), or music.

You can set the wait time for 0 to 998 seconds. If a wait time of 0 seconds is specified, caller feedback and processing of the next vector command begin immediately. Table 3-2 summarizes the treatment of the wait step.

Table 3-2 Operation of the Wait Step

WAIT TYPE	TRUNK TYPE	DISPOSITION IF ANS SUPV NOT SENT PREVIOUSLY	DISPOSITION IF ANS SUPV SENT PREVIOUSLY
	dial-repeating	Answer supervision is not sent; caller hears ringback from the switch.	Caller hears silence.
Silence	automatic-in	Answer supervision is not sent; caller hears ringback from Central Office (CO).	Caller hears silence.
	dial-repeating	Answer supervision is not sent; caller hears CO ringback.	Caller hears ringback.
Ringback	automatic-in	Answer supervision is not sent; caller hears CO ringback.	Caller hears ringback.
	dial-repeating	Answer supervision is sent; caller hears music.	Caller hears music.
Music	automatic-in	Answer supervision is sent; caller hears music.	Caller hears music.

A caller on a dial-repeating trunk will hear silence, not ringback, until a ‘‘Wait’’ step takes effect; the caller may, as a result, think the call did not get through. Therefore, early in a vector handling dial-repeating trunks (perhaps after a ‘‘Queue to Main Split’’ command), you should enter a ‘‘Wait’’ step with ringback, music, or an announcement.

NOTE

If a ‘‘wait’’ command is the last step in a vector (or is followed by a ‘‘stop’’ command), the specified wait interval can affect the data CMS collects for a vector. When the specified wait interval expires, the PBX sends a message to CMS indicating that processing of vector steps has finished. If the specified wait interval is short (for example, 2 seconds), the PBX could send CMS the message indicating that processing finished before the call is answered.

Vectors 18 and 19 are examples of the ‘‘wait’’ command.

```
                                CALL VECTOR

 Number: 18                   Name tg34 to vdn5518
ASAI Routing? n                   Basic? y        Prompting? y

01. queue        to main split 1  priority l
02. wait         time 2  secs hearing ringback
03.
```

```
                                CALL VECTOR

 Number: 19                   Name tg35 to vdn5519
ASAI Routing? n                   Basic? y        Prompting? y

01. queue        to main split 1  priority l
02. wait         time 998 secs hearing ringback
03.
```

CMS will stop accumulating vector-related data after 2 seconds on calls under Vector 18's control. Not so for Vector 19: vector data will continue to be accumulated on 19's calls for 998 seconds (over 16 minutes). For both vectors, however, the VDN and split statistics will be accumulated for as long as the *call* lasts.

Thus, the ''Total Time in Vector'' statistic in the historical vector reports would show different results for Vectors 18 and 19. The ''Total Time in VDN'' statistic in the historical VDN reports would not be affected by this difference. Also, the number of abandoned and answered calls could differ in VDN and vector reports if Vector 18 were used.

The Messaging Split Command

The ‘‘messaging split’’ command sends a call to the specified messaging split so that the caller can leave a message for the extension specified in the command. The messaging split can be an AUDIX split or a Message Center split. The extension can be a personal extension or a split extension. If an extension is not specified or ‘‘none’’ is entered in the field, the caller will be able to leave a message for the VDN associated with the call. Messages are delivered either via an AUDIX mail box or via the Message Center agent who takes the message.

Vector processing skips a ‘‘messaging split’’ command and processes the next vector command if:

The specified split is not administered (on the switch) as an AUDIX split or a Message Center split.

The specified extension (or default VDN) is not administered on the switch or is not an AUDIX or Message Center subscriber.

The queue assigned to the specified messaging split is full.

The link to the AUDIX is down or all AUDIX ports are out of service.

If a call is queued to a split when a ‘‘messaging split’’ command is processed, the call is removed from queue when the messaging split is successfully accessed. Vector 20 is an example of a ‘‘messaging split’’ command.

```
                                CALL VECTOR

 Number: 20                   Name tg36 to vdn5520
ASAI Routing? n                   Basic? y        Prompting? y

01. go to        step 8 if time of day is all 17:00 to all 08:00
02. queue        to main split 3  priority l
03. wait         time 12 secs hearing ringback
04. announcement extension 54
05. wait         time 10  secs hearing music
06. check        backup split 5  priority l if available-agents > 0
07. stop
08. messaging    split 20 for extension 2000
09.
```

The Adjunct Routing Command

The ‘‘adjunct routing’’ command is only available if the ASAI feature is administered on the switch. The ‘‘adjunct routing’’ command is used to give call-routing control to an adjunct processor and to send information (collected by the switch) to the adjunct so the adjunct can determine how to route the call.

Depending on the call center software developed for the adjunct, the adjunct can then route calls to any of the following destinations:

A local extension or VDN

The attendant (or the attendant queue)

A remote extension or VDN

An external phone number

An extension for a non-vector-controlled split

An announcement extension

A ‘‘wait’’ or ‘‘announcement’’ command should always follow an ‘‘adjunct routing’’ command in a vector to give the adjunct time to accept the call for routing. If any other command immediately follows an ‘‘adjunct routing’’ command, the switch processes the command that follows and the ‘‘adjunct routing’’ command fails.

Vector 21 is an example of the ‘‘adjunct routing’’ command.

```
                                CALL VECTOR

 Number: 21                   Name tg37 to vdn5521
ASAI Routing? n                   Basic? y        Prompting? y

01. announcement extension 3000
02. adjunct      routing link extension 2111
03. wait         time 20 secs hearing music
04. go to        vector 18 unconditionally
05.
```

In Vector 21, a call first receives an announcement. Then the switch immediately requests call routing instructions from the adjunct via extension 2111. A ‘‘wait’’ command follows the ‘‘adjunct routing’’ command to give the adjunct time to accept the call routing request. The ‘‘go to vector’’ command in Step 4 provides an alternative for call processing in case the adjunct does not accept the routing request.

The Prompting Commands

The following vector commands can only be administered on the switch using the DEFINITY Manager I. Furthermore, these commands can be administered only if the switch has the Call Vectoring and Call Prompting features. To receive VDN and vector reports, the CMS must have the Vectoring feature. For information about VDNs, vectors, and other vectoring commands, see the description of Call Vectoring in this chapter.

Call Prompting adds the following vector commands:

collect digits

route to digits

Call Prompting adds the the ‘‘if digits equal’’ condition to the following vector commands:

go to step

go to vector

route to number

The Collect Digits Command

The ‘‘collect digits’’ command collects and stores up to 16 touch-tone digits entered from the caller’s telephone. The switch uses these digits to determine how to process the call. The ‘‘collect digits’’ command can specify an extension number associated with an announcement. The announcement should explain the caller’s digit-entry options and the purpose of each option.

The caller may start entering digits while the announcement is playing or up to 10 seconds after the announcement stops. Once digit-entry starts, the caller has up to 10 seconds to enter each additional digit. If the caller does not enter a digit within 10 seconds, digit collection stops (whether digit entry is complete or not) and the next step in the vector is processed. If the caller begins entering digits while the announcement is playing, the announcement stops.

If the caller makes a mistake while entering digits, entering an asterisk (*) restarts the digit collection process. The announcement does not play again if the digit collection process is restarted.

Variable-Length Digit Strings

To accommodate variable-length digit strings, the caller can enter a pound sign (#) after entering one or more digits. For example, the announcement could tell the caller to enter a five-digit extension number or, for operator assistance, press the zero followed by the pound sign. When the number of digits the caller could enter varies, the ‘‘collect digits’’ command should specify the largest possible number of digits. The ‘‘collect digits’’ command for the previous example should specify 5 digits.

The pound sign tells the switch that the caller has finished entering digits. If the caller enters digits and a pound sign (or enters the number of digits specified in the command), the next step in the vector is processed immediately. If the caller does not enter the number of digits specified in the command and does not enter a pound sign, vector processing waits 10 seconds and then processes the next step in the vector.

Dialing Ahead

If the caller enters more than the number of digits specified for a ‘‘collect digits’’ command, the switch saves the additional digits for a later ‘‘collect digits’’ command. This allows frequent callers to dial ahead and avoid listening to the announcement(s). If the vector does not have another ‘‘collect digits’’ command, the extra digits are discarded.

The Announcement

The ‘‘collect digits’’ command can specify an extension number associated with an announcement. In addition to explaining the callers digit-entry options and the purpose of each option, depending on how the vector is designed, the announcement may also include information:

For rotary telephone users.

About entering the pound (#) sign to stop digit collection.

About entering the asterisk (*) to restart digit collection.

About dialing ahead.

Delays Associated with the ‘‘Collect Digits’’ Command

During periods of heavy call traffic, callers may have to wait for a touch-tone receiver (used to collect digits). The caller will not hear the ‘‘collect digits’’ announcement until a touch-tone receiver is available. Callers may also have to wait if an announcement port is not immediately available. While waiting, the caller continues to hear the treatment (silence, music, or ringback) that was in effect before the ‘‘collect digits’’ command was processed.

Sample Vector

Vector 22 is an example of a vector that contains a ‘‘collect digits’’ command.

```
                                CALL VECTOR

 Number: 22                   Name tg38 to vdn5522
ASAI Routing? n                   Basic? y        Prompting? y

01. collect      1  digits after announcement extension 3323
02. go to        step 5  if digits equal 1
03. go to        step 9  if digits equal 2
04. go to        vector 30 if digits equal 3
05. queue        to main split 11 priority l
06. announcement extension 3400
07. wait         time 998 secs hearing music
08. stop
09. queue        to main split 12 priority l
10. announcement extension 3400
11. wait         time 998 secs hearing music
12.
```

In Step 1 of Vector 22, the announcement part of the ‘‘collect digits’’ command instructs the caller to enter a ‘‘1,’’ ‘‘2,’’ or ‘‘3,’’ depending on what option the caller wants. Then, later steps in the vector use the caller-entered digit to process the call.

The Go To Step Command

Call Prompting adds the ‘‘if digits equal’’ condition to the ‘‘go to step’’ command described in the ‘‘The Vectoring Commands’’ section of this chapter. Vector processing branches to the specified step in the vector if the digits collected by the last ‘‘collect digits’’ command match the digits specified in the ‘‘go to step’’ command. The ‘‘if digits equal’’ condition can specify as many as 16 digits.

Calls remain in queue or continue to receive the treatment that was established before the ‘‘go to step’’ command. If the digits specified in the ‘‘go to step’’ command do not match the digits collected by the last ‘‘collect digits’’ command, vector processing continues with the next step in the vector (branching does not occur).

Vector 23 shows examples of the ‘‘go to step’’ command with the ‘‘if digits’’ condition.

```
                                CALL VECTOR

 Number: 23                   Name tg41 to vdn5523
ASAI Routing? n                   Basic? y        Prompting? y

01. collect      1  digits after announcement extension 3323
02. go to        step 4  if digits equal 1
03. go to        step 8  if digits equal 2
04. queue        to main split 11 priority l
05. announcement extension 3400
06. wait         time 998 secs hearing music
07. stop
08. queue        to main split 12 priority l
09. announcement extension 3400
10. wait         time 998 secs hearing music
11.
```

Step 1 collects one digit from the caller. Steps 2 through 4 test the caller-entered digit and branch to Step 5 if the caller entered a 1, branch to Step 9 if the caller entered a 2, or continue vector processing with vector 30 if the caller entered a 3. Step 5 queues the call to split 11 at low priority. Step 9 queues the call to split 12 at low priority.

See ‘‘The Vectoring Commands’’ section in this chapter for information about other ‘‘go to step’’ command conditions.

The Go To Vector Command

Call Prompting adds the ‘‘if digits equal’’ condition to the ‘‘go to vector’’ command described in the Call Vectoring section of this chapter. The switch branches to Step 1 of the specified vector if the digits collected by the last ‘‘collect digits’’ command match the digits specified in the ‘‘go to vector’’ command. The ‘‘if digits equal’’ condition can specify as many as 16 digits.

Calls remain in queue or continue to receive the treatment that was established before the ‘‘go to vector’’ command. If the digits specified in the ‘‘go to vector’’ command do not match the digits collected by the last ‘‘collect digits’’ command, vector processing continues with the next step in the vector (branching does not occur).

Vector 24 is an example of the ‘‘go to vector’’ command with the ‘‘if digits equal’’ condition.

```
                                CALL VECTOR

 Number: 24                    Name tg42 to vdn5524
ASAI Routing? n                    Basic? y        Prompting? y

01. collect      1  digits after announcement extension 3323
02. go to        step 5  if digits equal 1
03. go to        step 9  if digits equal 2
04. go to        vector 30 if digits equal 3
05. queue        to main split 11 priority l
06. announcement extension 3400
07. wait         time 998 secs hearing music
08. stop
09. queue        to main split 12 priority l
10. announcement extension 3400
11. wait         time 998 secs hearing music
12.
```

In Step 4 of Vector 24, vector processing continues with Vector 30 if the caller enters a ‘‘3’’ for the ‘‘collect digits’’ command.

See ‘‘The Vectoring Commands’’ section in this chapter for information about other ‘‘go to vector’’ command conditions.

The Route To Number Command

Call Prompting adds the ‘‘if digit equals’’ condition to the ‘‘route to number’’ command described in the Call Vectoring section of this chapter. This command routes the call to the specified destination if the digit specified in the ‘‘if digit equals’’ condition matches the digit collected by the last ‘‘collect digits’’ command.

Vector processing stops if the call routes successfully. Vector processing skips the ‘‘route to number’’ command and continues with the next step in the vector if the call does not route successfully or if the last ‘‘collect digits’’ command collected more than one digit, no digits, or a digit that does not match the digit specified in the ‘‘route to number’’ command.

The ‘‘if digit equals’’ condition can only be used to route calls based on a single-digit comparison.

Vector 25 shows examples of the ‘‘route to number’’ command with the ‘‘if digit equals’’ condition.

```
                                CALL VECTOR

 Number: 25                   Name tg43 to vdn5525
ASAI Routing? n                   Basic? y        Prompting? y

01. collect      1  digits after announcement extension 3323
02. route        to number 5577             if digit equals 1
03. route        to number 5580             if digit equals 2
04. route        to number 5587             if digit equals 3
05. go to        vector 30 unconditionally
06.
```

In Vector 25, if the caller enters a ‘‘1’’ for the ‘‘collect digits’’ command in Step 1, the call routes to extension 5577. If the caller enters a ‘‘2,’’ the call routes the to extension 5580. If the caller enters a ‘‘3,’’ the call routes to extension 5587. Finally, if the caller enters any other digit or fails to enter a digit, vector processing continues at Vector 30.

The Route To Digits Command

This command routes the call to the destination specified by the digits collected by the last ‘‘collect digits’’ command.

The ‘‘route to digits’’ command enables the switch to route a call based on caller-entered digits. The ‘‘with coverage’’ parameter specifies whether feature that redirect calls such as Call Coverage and Call Forwarding apply to the routed call or not. For an internal extension, the call redirects if the ‘‘with coverage’’ parameter is set to y (yes) and coverage/ forwarding is assigned and applies to the call. Coverage is ignored if the ‘‘with coverage’’ parameter is set to n (no).

If the ‘‘with coverage’’ parameter is set to y **and** the destination is an internal extension, vector processing stops as soon as the command is processed. If the destination is outside the switch or the ‘‘with coverage’’ parameter is set to n, vector processing stops if the call routes successfully. Vector processing skips the ‘‘route to digits’’ command and continues with the next step in the vector if the call does not route successfully or the last ‘‘collect digits’’ command collected no digits.

Vector 26 is an example of the ‘‘route to digits’’ command.

```
                                CALL VECTOR

 Number: 26                   Name tg44 to vdn5526
ASAI Routing? n                   Basic? y        Prompting? y

01. collect      4  digits after announcement extension 3323
02. route        to digits with coverage n
03. go to        vector 30 if unconditionally
04.
```

In Vector 26, the announcement specified in Step 1 tells the caller to enter a 4-digit extension number. Step 2 routes the call to the 4-digit extension number entered by the caller. If the extension is not available, Step 3 sends the call to Vector 30.

Agent Call Handling in a Vectoring ACD

The way agents handle calls in a vector-controlled split is almost the same as the way they handle calls in a non-vector-controlled split. Most vectors send calls to splits, and the calls are then distributed to agents according to specified ACD algorithms. In most cases, a call is connected to an agent or the caller abandons, and vector processing ends for that call. As calls complete and terminate, agents change their **states** accordingly. (See Appendix C, ''ACD Basics,'' in the *Call Management System Administration* [585-215-504] for a description of agent states.) As agents change states, change of status messages are sent to the 3B computer for pegging in the CMS data base.

In a non-vector-controlled split, agents tend to receive calls of a similar nature from one or a few sources. In a vector-controlled split, agents may receive a wide variety of calls from many different sources. Voice terminals with display capabilities help agents distinguish the source and purpose of each call.

Voice Terminal Displays for Agents

With Call Vectoring, the following call information (more, if queue status display is active) is displayed on an agent's voice terminal:

```
[Source of call]  to [VDN name or number]
```

This information is especially useful when several VDNs terminate to one vector and split. The display identifies the source of and the product or service associated with each call.

For example, an agent might be trained to answer: ''Hello. . . Product A sales'' when the following information is displayed:

```
trunk group  to  Product A Sales
```

The same agent could then answer: ''Hello . . .Product B Sales,'' when the following information is displayed:

```
trunk group  to  Product B Sales
```

''Product A Sales'' and ''Product B Sales'' are names assigned to the VDNs that receive calls for these products.

NOTE If splits handle more than one product, split reports will not distinguish call traffic for specific products. So, CMS provides VDN reports to collect and display call traffic data on VDNs used as call-identifiers.

Using CMS With Vectoring

Configuring Vectors

You can use the CMS **Configuration-Vector Directory Number Assignment** screen to reassign VDNs to vectors. To administer any other aspect of a vectoring ACD, you must use the DEFINITY Manager I.

Generating Reports

CMS collects VDN and vector data and stores it in VDN and Vector files in each of the CMS data bases. You can view this data by accessing the following reports that cover vectoring:

Standard Real-time Reports, specifically the Vector Status and VDN Status Reports. You administer and order these reports in the **Reports** subsystem.

Standard Historical Reports, specifically the Daily, Weekly, and Monthly Vector Reports, and the Daily, Weekly, and Monthly VDN Reports. You administer and order these reports in the **Reports** subsystem.

The Daily Vector Exceptions Report, which you administer and order in the **Exceptions** subsystem.

NOTE

For more information on how CMS data bases are organized, see Chapter 5 in the *Call Management System Custom Reports* (585-215-503).

You can also create custom reports on vectors and VDNs using the **Custom Reports Creation** subsystem and the Calculations and Constants portions of the **Dictionary** subsystem.

Vectoring data can be stored for up to 31 days for half-hour data and 387 days for daily data. These periods represent the maximum ages of vectoring data that can appear in a report. These parameters are administered by the CMS administrator from the **Maintenance— Archive Parameters** screen.

Vector and VDN synonyms can also be assigned to vectors and VDNs to replace the switch identifiers in reports for more meaningful displays. You assign these synonyms in the **Dictionary** subsystem.

NOTE An effort should be made to coordinate names in the CMS Dictionary and those entered in the Vector Directory Number and Call Vector Forms on the switch.

Administering Vector Access

Read permission allows a CMS user to view vector reports. Write permission allows a CMS user to create or change exception report parameters for a specific vector and to reassign VDNs to the vector.

General Information

You can use the CMS Reports Subsystem to request real-time (current), historical, and special management reports on your vectors and VDNs. These reports display data on various activities (average speed of answer, abandoned calls, calls carried, and so on) involving vectors and VDNs. Reports can be displayed directly on the screen or directed to a printer or file.

The Reports Menu for CMS With Call Vectoring

You select the vector or VDN reports you want by first accessing the Reports Menu (Figure 4-1). On this menu, you select real-time reports, historical reports, or the special VDN/ Trunk-Activity-Matrix report.

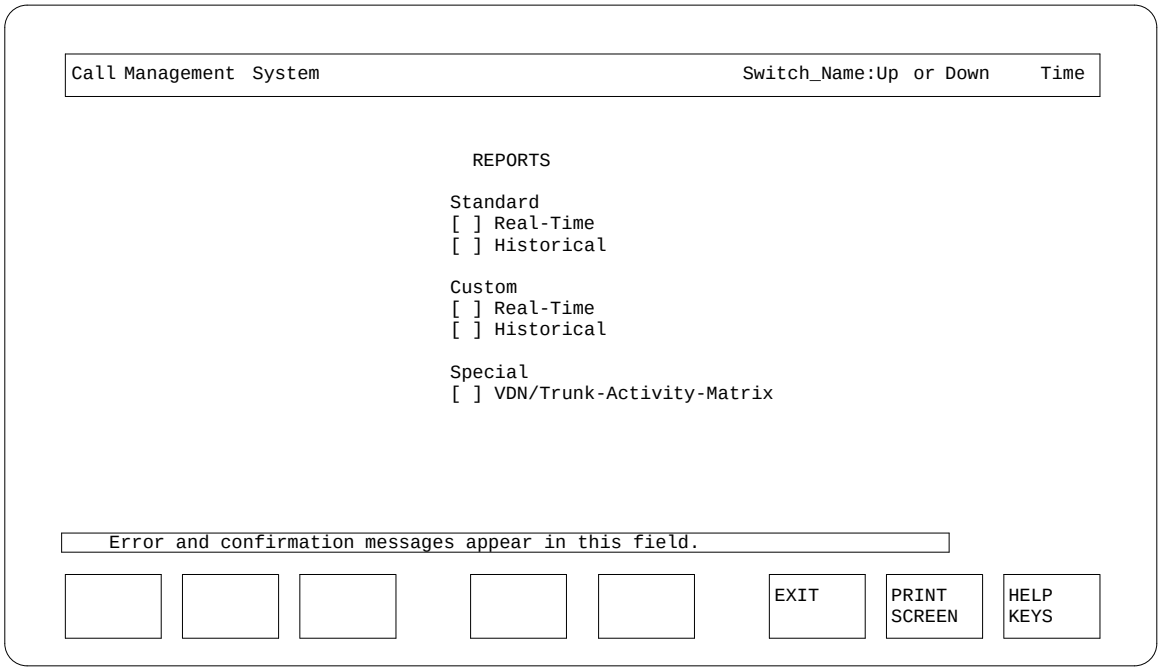


Figure 4-1 The Reports Menu

Ordering Standard Real-Time Reports

Purpose To print standard real-time reports
Access VDN Status requires read access for VDN's assigned vector.
Vector Status requires read access for vector and split.

You use the Real-Time Reports Menu (Figure 4-2) to select either the VDN or Vector Status Report. You follow the same procedures for selecting any CMS Standard Real-Time Report. If necessary, refer to the *3B Call Management System Administration (585-215-504)* document for instructions.

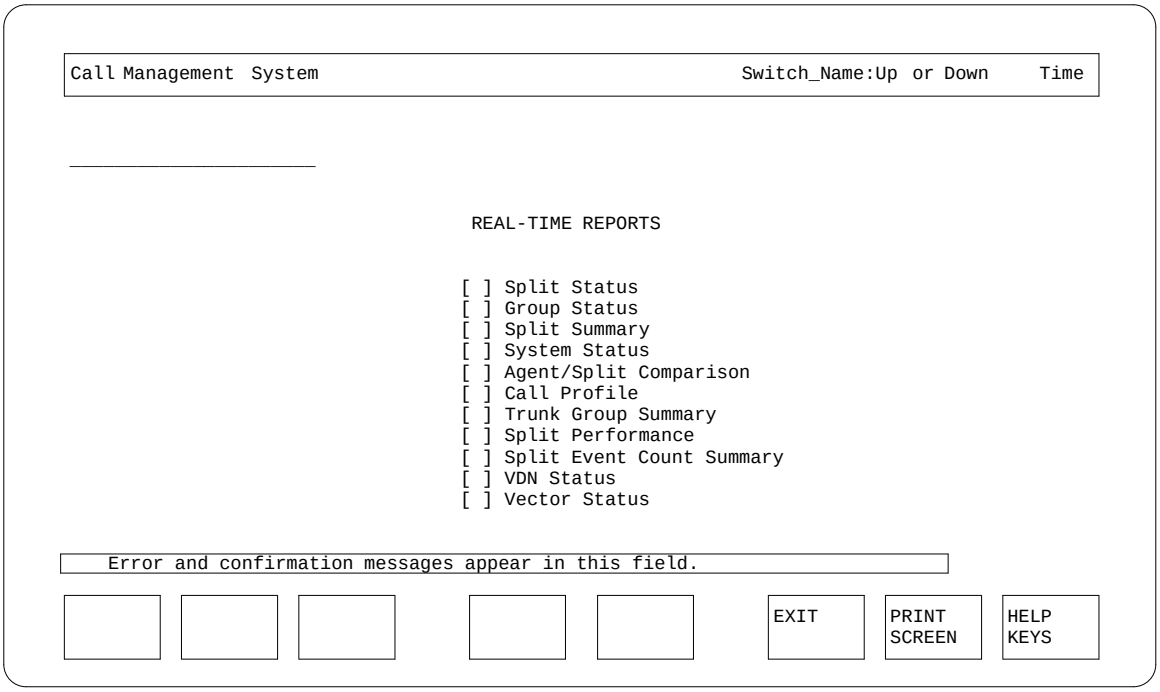


Figure 4-2 The Real-Time Reports Screen

NOTE

When the Vectoring feature is active in CMS, the standard Split Status Report (see Chapter 3 in the 3B CMS Administration document) does **not** display trunk data. However, you can create a custom report that merges trunk data back into the Split Status report.

The Report Parameters Screens

A Report Parameters screen for VDN Status Reports (Figure 4-3) or Vector Status Reports (Figure 4-4) will appear after you select the report you want and before the report is actually displayed. You use the Report Parameters screen to select the specific VDNs or vectors you want the report to cover. For the Vector Status report, you also specify the split to which the vectors queue. In addition, you specify on the Report Parameters screen how often you want CMS to update the data in the report.

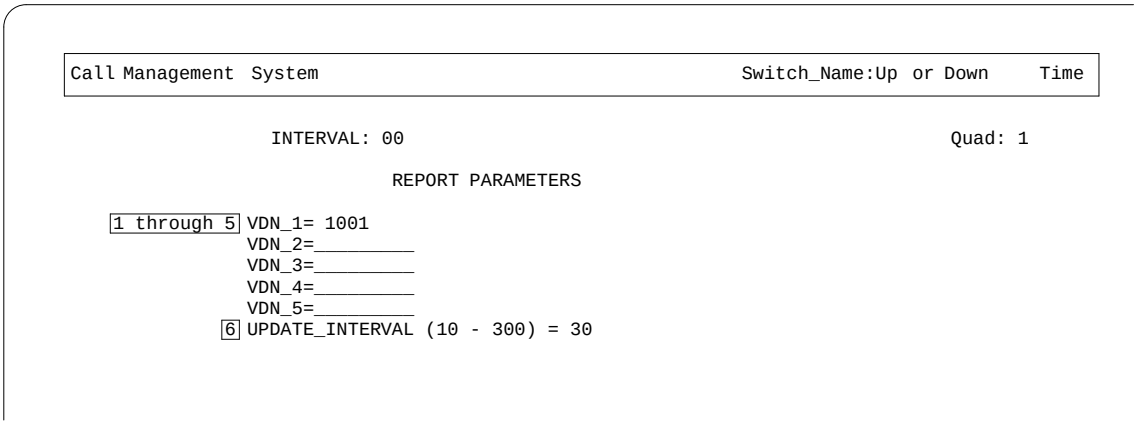


Figure 4-3 Real-Time Report Parameters Screen for VDN Status Reports

Definition of Fields

Fields 1 through 5 VDN

The VDN numbers or synonyms for the VDNs you want the report to cover.

Field 6 Update Interval

The length of time, in seconds, between on-line updates of the report data.

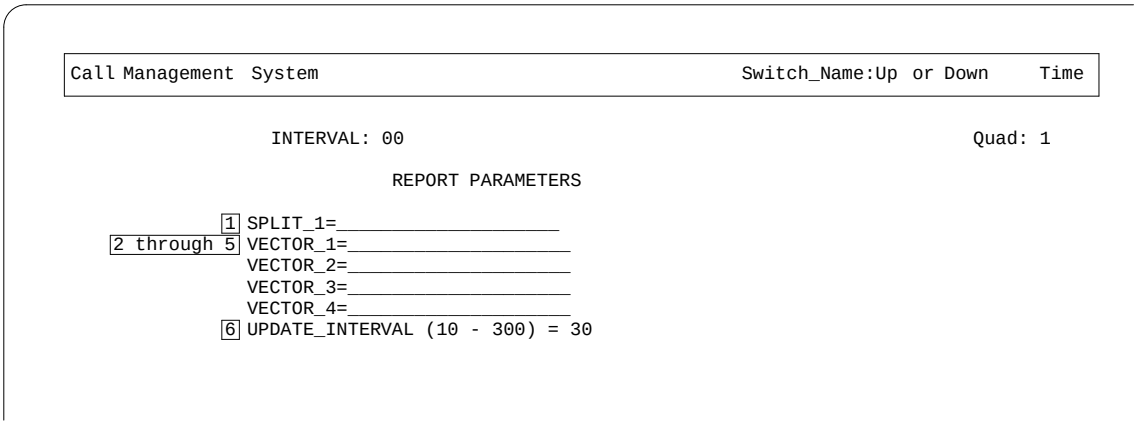


Figure 4-4 Real-Time Report Parameters Screen for Vector Status

Definition of Fields

Field 1 Split

The number or synonym of the split you want the report to cover.

Fields 2 through 5 Vector

The vector numbers or synonyms you want the report to cover.

Field 6 Update Interval

The length of time, in seconds, between on-line updates of the report data.

Ordering Standard Historical Reports

Purpose	To print standard historical reports
Access	Requires read access for vector or the VDN's assigned vector.
Dependencies	Daily Data Archive information must exist for reporting date
Limitations	Run historical reports during off-peak hours to reduce occupancy of the system during periods of high call traffic activity. This helps to reduce system response time for users.

You use the Standard Historical Reports Menu (Figure 4-5) to select either the VDN or Vector Report. You follow the same procedures you use to select any Standard Historical Report. Also, the VDN and Vector Reports use the same daily, weekly, and monthly report parameters as the other standard historical reports and the same restrictions apply. If necessary, refer to the *3B Call Management System Administration (585-215-504)* document for instructions.

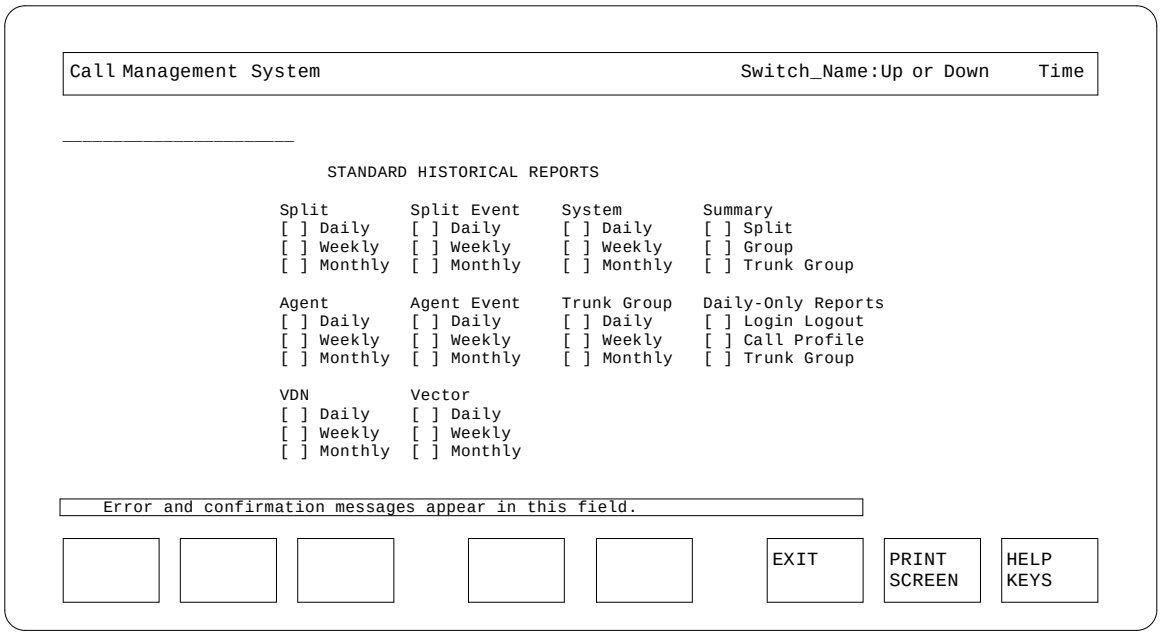


Figure 4-5 The Standard Historical Reports Menu

The Report Parameters Screens

A Report Parameters screen (Figure 4-6 or 4-7) will appear after you select the report you want and before the report is actually generated. You use the Report Parameters screen to select the specific VDN or vector you want the report to cover. You also specify the day(s) and/ or half-hour intervals you want the report to cover.

Daily Report Parameters Screen

The Report Parameters screen for **daily** reports contains the fields as shown in Figure 4-6.

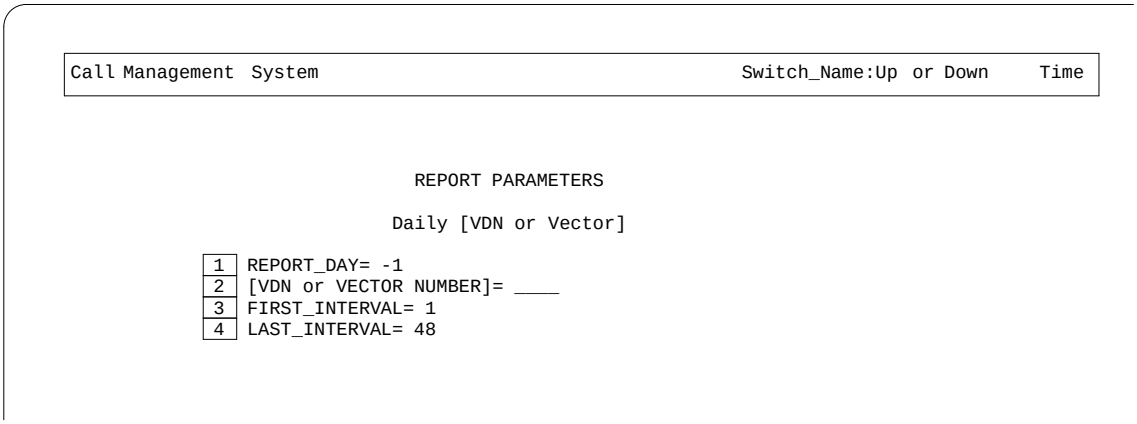


Figure 4-6 The Daily Report Parameters Screen

Definition of Fields

Field 1 Report Day

The day you want the report to cover in relative day or MM/ DD/ YY format. Daily data is available for up to 31 days in the past. An entry of -0 will generate a report for the current day starting at midnight and continuing up to the most recent half-hour interval that is archived.

Field 2 VDN or Vector Number

The number or synonym of the VDN or vector you want the report to cover.

Field 3 First Interval

The number of the first half-hour interval you want the report to cover. (See the Time Interval Table.)

Field 4 Last Interval

The number of the last half-hour interval you want the report to cover. (See the Time Interval Table.)

Use Table 4-1 to determine the interval numbers for the half-hour intervals you want to order in your reports.

Table 4-1 Time Interval Table

Interval		Clocktime		Interval
1	AM	12:00-12:30	PM	25
2	AM	12:30-01:00	PM	26
3	AM	01:00-01:30	PM	27
4	AM	01:30-02:00	PM	28
5	AM	02:00-02:30	PM	29
6	AM	02:30-03:00	PM	30
7	AM	03:00-03:30	PM	31
8	AM	03:30-04:00	PM	32
9	AM	04:00-04:30	PM	33
10	AM	04:30-05:00	PM	34
11	AM	05:00-05:30	PM	35
12	AM	05:30-06:00	PM	36
13	AM	06:00-06:30	PM	37
14	AM	06:30-07:00	PM	38
15	AM	07:00-07:30	PM	39
16	AM	07:30-08:00	PM	40
17	AM	08:00-08:30	PM	41
18	AM	08:30-09:00	PM	42
19	AM	09:00-09:30	PM	43
20	AM	09:30-10:00	PM	44
21	AM	10:00-10:30	PM	45
22	AM	10:30-11:00	PM	46
23	AM	11:00-11:30	PM	47
24	AM	11:30-12:00	PM	48

Weekly/Monthly Report Parameters Screen

The Report Parameters screen for **weekly** and **monthly** reports contains fields as shown in Figure 4-7.

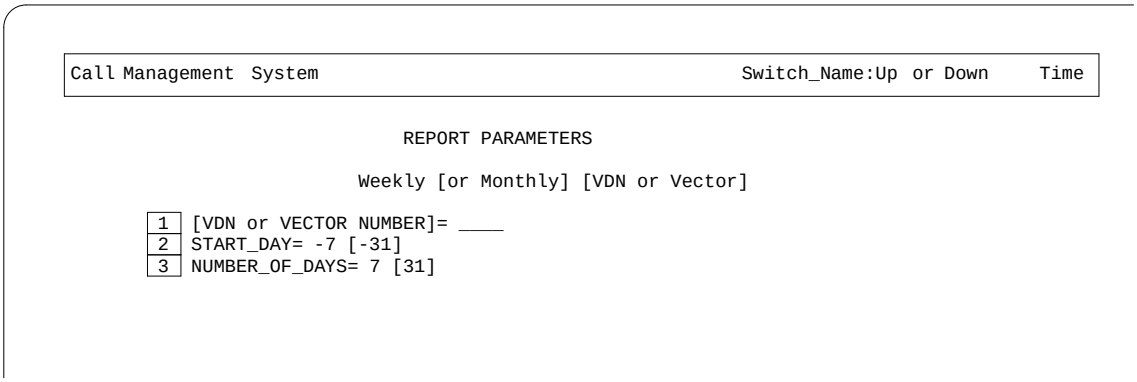


Figure 4-7 The Weekly/Monthly Report Parameters Screen

Definition of Fields

Field 1 VDN or Vector Number

The number or synonym of the VDN or vector you want the report to cover.

Field 2 Start Day

The day you want the report to cover using either the relative day or MM/DD/YY format. The earliest day you can specify is -387. The default values (-7 and -31) generate reports beginning a week and a month ago, respectively.

Field 3 Number Of Days

The number of days you want the report to include. Seven and 31 are the default values for a weekly and monthly reports, respectively. A single report should cover no more than 120 days.

Ordering VDN/Trunk-Activity-Matrix Reports

Purpose	To print a Special Report
Access	Requires read access for specified VDN, vector, and trunk group.
Dependencies	None

Since only one special report, the VDN/ Trunk-Activity-Matrix Report, is available at this time, a separate menu for Special Reports does not exist. You use the main Reports Menu to select the special VDN/ Trunk-Activity-Matrix Report. You follow the same procedures as those used to select any CMS Standard Report. If necessary, refer to the *3B Call Management System Administration (585-215-504)* document for instructions.

The Report Parameters Screen

A Report Parameters screen (Figure 4-8) will appear after you select the VDN/ Trunk-Activity-Matrix report and before the report is actually generated. You use the Report Parameters screen to select the specific VDNs and trunk groups you want the report to cover. You also specify the day(s) and/ or half-hour intervals you want the report to cover.

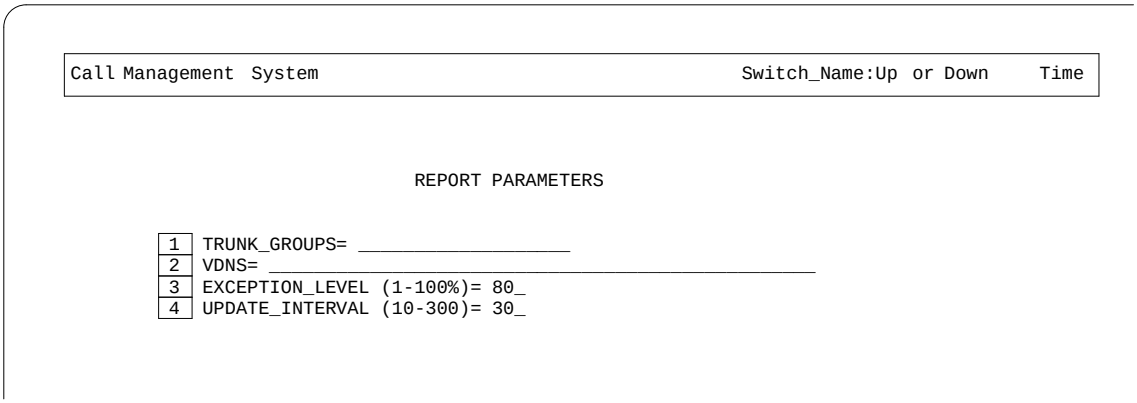


Figure 4-8 The VDN/ Trunk-Activity-Matrix Report Parameters Screen

Definition of Fields

Field 1 Trunk Groups

The number(s) of the the trunk group(s) you want the report to cover. You may enter up to four trunk group numbers.

Field 2 VDNS

The number(s) of the VDN(s) you want the report to cover. You may enter single VDN numbers, a range of VDNs, or ‘‘all.’’

Field 3 Exception Level

The percentage of trunks in a trunk group that can be busy before an exception is triggered for the VDN.

Default: 8-0

Field 4 Update Interval

The length of time, in seconds, between on-line updates of the report data.

Default: 3-0

Introduction to Reports Descriptions

This chapter provides a reference to the call vectoring reports contained in the Reports Subsystem of the 3B CMS. The section on each report contains:

A sample copy of the report

A table containing each report item with:

- A definition of each item
- The units the output values represent (e.g., calls, seconds, percent)
- The database item or calculation for the report item
- The formula for each calculation as defined in the Dictionary.

NOTE For a complete list of database items, including vectoring database items, refer to Appendix A in the *3B Call Management System Administration* (585-215-504) document.

Database items, formulas, and calculations are presented in the report descriptions for quick reference should you decide to create custom reports.

Database items Database items are the basic units for storage and retrieval of data that appear in the records of agents, groups, splits, and trunk groups. Examples are: ACWINTIME (total time on After-Call-Work incoming calls), ACDCALLS (total number of ACD calls), and ACDTIME (total time on ACD calls). You cannot change database items, but you can use them in the creation of custom reports.

Formulas Formulas consist of database items plus arithmetic operators such as *, ( ), and / . These create more meaningful information about agents, splits, trunk groups, and trunks. An example of a formula is (ACWTIME-ACWOUTTIME-ACWINTIME)/ ACDCALLS, which is the formula for average length of after-call work sessions.

Calculations Calculations are shorthand notations for formulas and are defined in the Dictionary. For custom reports, you can create custom calculations based on standard formulas listed in this section. Then, if you use these custom calculations instead of formulas, you can use the Dictionary to make quick global changes (in more than one report) to report-output.

NOTE You cannot change a standard report, nor can you delete a standard calculation. It is also recommended that you not change a standard calculation. Rather, so that you do not risk corrupting data in standard reports that use calculations you want to change, create a custom calculation from a standard calculation and then use the custom calculation in custom reports.

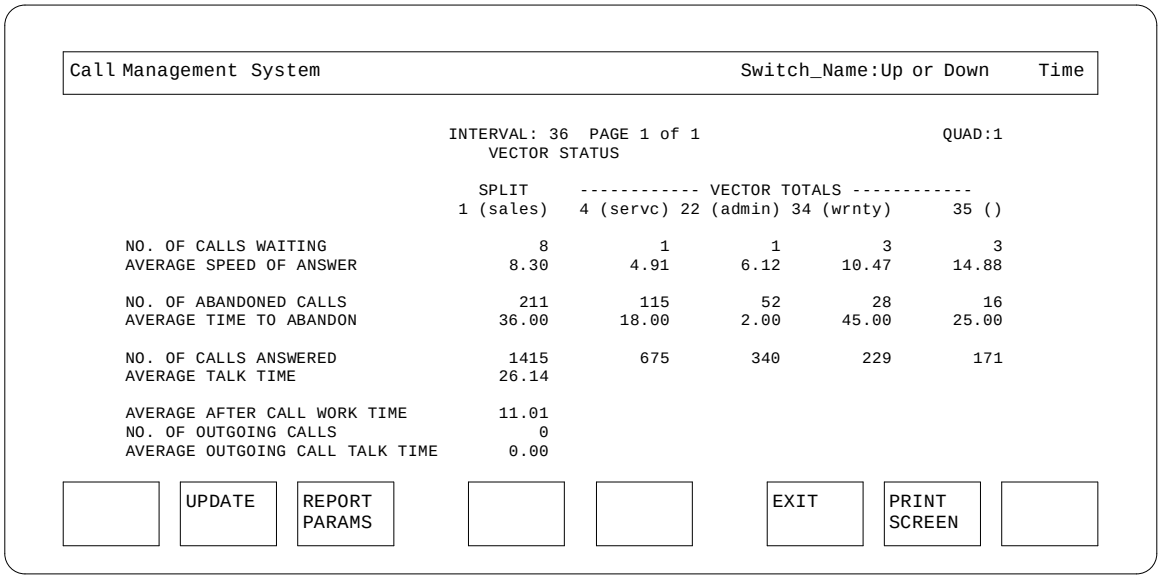
NOTE If the link between the 3B and the switch goes down, or if other internal system problems occur, the summary line data in daily reports and the daily data in weekly/ monthly reports may vary slightly. Variations may occur because items used in the daily reports are **call-based**, whereas items used in weekly/ monthly reports are **interval-based**. (See Chapter 5 in *3B CMS Custom Reports* (585-215-503) for a complete explanation of these two items.) Thus, an event that starts while the link is down, but ends when the link is up, may be recorded in call-based items (and daily reports) but not in interval-based items (or weekly/ monthly reports). Conversely, an event that starts before the link goes down, but ends while the link is down, may be recorded in interval-based items (and weekly/ monthly reports) but not in call-based items (or daily reports).

NOTE For all **formulas** (averages and percentages) that contain division operators, the formula for the summary line item is SUM(numerator) / SUM (denominator). Other summary line items consist of the data function SUM(item).

Vector Status

Purpose	Monitor current status of calls for selected vectors within the same main split.
Data File Used	CURRENT/SPLIT, CURRENT/VECTOR
Dependencies	Read permission for split and vectors.

The Vector Status real-time report shows the relationship between the calls handled by one split and the vectors that queue to that split. The report displays a maximum of four vectors. The user of this report must know which vectors specify a given split in their ‘‘queue to main split’’ and ‘‘check backup split’’ commands; the Report Parameters screen (where split and vector selections are made) cannot check for this relationship. The information is available in the Split References screen that you can select from the Configuration menu.



```
Call Management System                                  Switch_Name:Up or Down    Time

                              INTERVAL: 36  PAGE 1 of 1                        QUAD:1
                                  VECTOR STATUS

                                SPLIT     ------------ VECTOR TOTALS ------------
                               1 (sales)   4 (servc) 22 (admin) 34 (wrnty)      35 ()

     NO. OF CALLS WAITING             8          1         1         3          3
     AVERAGE SPEED OF ANSWER       8.30       4.91      6.12     10.47      14.88

     NO. OF ABANDONED CALLS         211        115        52        28         16
     AVERAGE TIME TO ABANDON      36.00      18.00      2.00     45.00      25.00

     NO. OF CALLS ANSWERED         1415        675       340       229        171
     AVERAGE TALK TIME            26.14

     AVERAGE AFTER CALL WORK TIME 11.01
     NO. OF OUTGOING CALLS            0
     AVERAGE OUTGOING CALL TALK TIME 0.00

[        ] [UPDATE] [REPORT PARAMS] [        ] [        ] [EXIT] [PRINT SCREEN] [        ]
```

Figure 4-9 Vector Status Report

Table 4-2 Item Reference for the Vector Status Report

Report Item	What It Measures	Units	Database Item Or Calculation Formula
SPLIT	Split number or synonym for selected split.	Split Number or Synonym	SYN(SPLIT)
VECTOR TOTALS	At the head of each column is the number and (if available) the synonym of one vector selected in the Reports Parameters screen.	Vector Number or Synonym	SYN(VECTOR)
NO. OF CALLS WAITING	Number of unanswered calls in the split's queue (split column), and the number of unanswered calls in each vector.	Calls	QUECALLS
AVERAGE SPEED OF ANSWER	Average of queue times for all ACD calls that connect to agents in the split in the current half hour, and the breakout of the averages for each vector.	Seconds	AVG ANSWER SPEED (splits) ANSDELAY/ANSWERED ANSDELAY/(ANSMAIN + ANSBACK) * (vectors)
NO. OF ABANDONED CALLS	For current half hour, total of queued calls for the split in which the caller hangs up before being answered (split column), and the breakout for each vector.	Calls	ABANDONS
AVERAGE TIME TO ABANDON	Average time a caller waited before hanging up in the split (split column), and the breakout for each vector.	Seconds	AVG ABANDON TIME ABANTIME/ABANDONS

* No calculation for this formula.

Table 4-2 Item Reference for the Vector Status Report (Contd)

Report Item	What It Measures	Units	Database Item Or Calculation Formula
NO. OF CALLS ANSWERED	Queued calls that connected to an agent during this half hour in the selected split and the queued calls that connected while being processed by each vector.	Calls	ANSWERED (splits) ANSMAIN + ANSBACK (vectors)
AVERAGE TALK TIME	Length of the average call during this half hour in the split.	Seconds	AVG COM TALK TIME CUMTALK/NUMTALK
AVERAGE AFTER CALL WORK TIME	Average session for agents in this split in after-call work.	Seconds	AVG COMP ACW TIME CUMACW/NUMACW
NO. OF OUTGOING CALLS	Agents currently engaged in extension-out calls in the split.	Agents	AGENT CALL OUT ACWOUTCOUNT+AUXOUTCOUNT
AVERAGE OUTGOING CALL TALK TIME	Length of average outgoing call from this split's agents.	Seconds	AVG TALK TIME OUT (ACWOUTTIME + AUXOUTTIME) / (ACWOUTCALLS + AUXOUTCALLS)

Vector Directory Number Status

Purpose	Monitor current status of incoming calls to selected VDNs.
Data File Used	CURRENT/DN
Dependencies	Read permission for vectors to which VDNs are assigned.

This real-time report (Figure 4-10) displays the status of calls coming to selected Vector Directory Numbers (VDNs). Though VDNs may have a one-to-one mapping to splits in an AT&T vectoring system, a single split may also receive calls from more than one VDN (for example, when each VDN represents a particular type of call, but a single split handles several types of calls). Therefore, in a *VDN* report, the number of calls for two or more columns may be referring to calls that are queued to the same split.

Whether the calls are directed to the same split or different splits, this report *separates* them according to their VDN entry-point into the local system. The same is true of ‘‘waiting’’ (queued) calls. The calls may be waiting for (queued to) one split. But if they accessed the split via *different VDNs*, they will be in different columns in this report.

Because each VDN is usually associated with a specific type of call, the VDN Status report can be quite useful in determining volume of calls and call-handling efficiency for specific types of calls.

One VDN may also reference several splits. This would be the case when, for example, a ‘‘route to VDN’’ type command was included in a vector associated with the VDN. Also, two or more ‘‘queue to main split’’ commands or one or more ‘‘check backup split’’ commands in one vector would have a similar effect. At any given moment, however, the call is under the control of only one VDN, vector, and split. In this report, whichever VDN currently has (or most recently had) control of the call will be the one reporting abandonment, speed of answer, and queue length for that call.

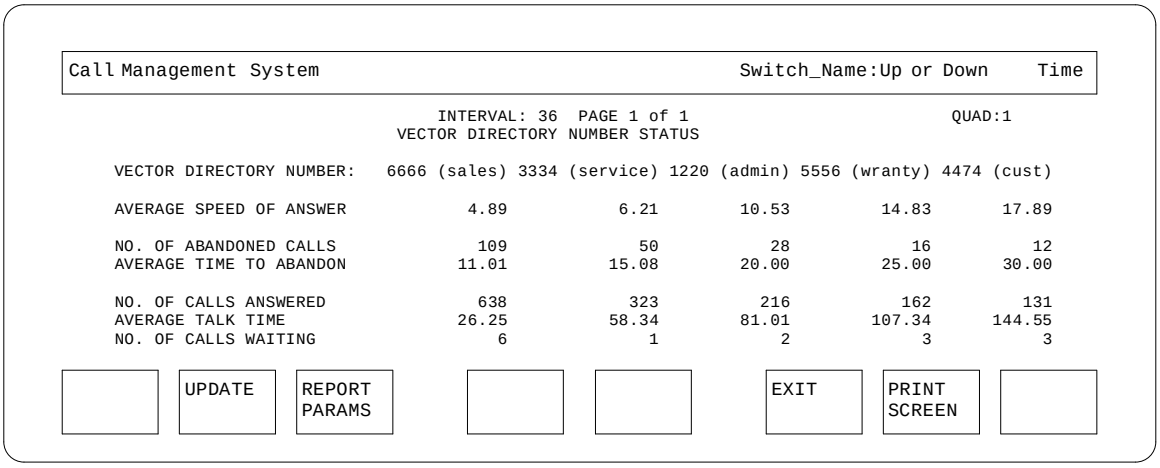


Figure 4-10 Vector Directory Number Status

Table 4-3 Item Reference for the VDN Status Report

Report Item	What It Measures	Units	Database Item Or Calculation Formula
VECTOR DIRECTORY DNUMBER	Vector Directory Numbers or synonyms selected for this report.	VDN Numbers or synonyms	SYN(DNEXT)
AVERAGE SPEED OF ANSWER	Average of queue times for all ACD calls that connect to agents via this VDN.	Seconds	AVG ANSWER SPEED ANSDELAY/ANSWERED
NO. OF ABANDONED CALLS	Total of queued calls for the splits of each VDN in which the caller hangs up before being answered, and the breakout for each VDN.	Calls	ABANDONS
AVERAGE TIME TO ABANDON	Average time the caller waited before hanging up in the split or splits associated with the vectors using each VDN.	Seconds	AVG ABANDON TIME ABANTIME/ABANDONS
NO. OF CALLS ANSWERED	Queued calls that connected to an agent during this half hour in the splits associated with the vectors using each VDN.	Calls	ANSWERED
AVERAGE TALK TIME	Length of the average call during this half hour in the VDN's split or splits.	Seconds	AGTIME/ANSWERED *
NO. OF CALLS WAITING	Number of calls currently queued to the split or splits specified in the vectors using a given VDN.	Calls	QUECALLS

* No calculation for this formula.

Vector Reports

Purpose	Provide historical data of incoming calls for a selected vector.
Data File Used	HHOUR/ VECTOR for daily report
	DAILY/ VECTOR for weekly and monthly reports

This report shows the results of calls handled by one vector (Figure 4-11). The mapping of vectors to splits in CMS follows these rules:

1. More than one vector may send calls to a single split.
2. A single vector may queue calls to two splits (main and backup).
3. Vectors, through the ''route to'' command, may be ''chained'' together. ''Chained'' vectors are reported separately. That is, calls handled by the splits in the first vector go in its report; calls handled by splits in the additionally ''chained'' vectors are reported in their reports. There is no consolidated report that combines the splits in chained vectors.

The ''Calls Answered in Main'' and ''Calls Answered in Backup'' items refer to calls that queue to different splits that are specified in the ''queue to main'' and ''check backup'' steps (if present) in the vector.

NOTE The Daily, Weekly, and Monthly Vector Reports are identical except the Daily report lists data by half-hour intervals instead of by dates.

DAILY VECTOR REPORT (MENU:DVECTOR)

VECTOR: 1 (sales) DATE: 9/18/88

TIME	NO. CALLS ANSWERED	AVG SPEED ANS	NO. ABAN CALLS	AVG ABAN TIME	NO. CALLS ANS IN MAIN	NO. CALLS ANS IN BACKUP	TOTAL TIME IN VECTOR
08:00-08:30AM	28	5.61	8	25.38	27	1	4432
08:30-09:00AM	43	3.03	2	26.00	38	5	5643
09:00-09:30AM	38	3.33	1	14.00	32	6	4939
09:30-10:00AM	36	0.72	0	0.00	31	5	4629
SUMMARY	145	4.00	15	23.93	128	17	19643

WEEKLY VECTOR REPORT (MENU:WVECTOR)

VECTOR: 1 (sales) DATE: 9/21/88

DATE	NO. CALLS ANSWERED	AVG SPEED ANS	NO. ABAN CALLS	AVG ABAN TIME	NO. CALLS ANS IN MAIN	NO. CALLS ANS IN BACKUP	TOTAL TIME IN VECTOR
09/14/87	408	5.61	8	25.38	397	11	79432
09/15/87	243	3.03	2	26.00	228	15	49494
09/16/87	238	3.33	1	14.00	218	20	47739
09/17/87	189	0.72	0	0.00	179	10	36129
09/18/87	174	4.94	0	0.00	161	13	34796
09/19/87	45	7.78	2	36.50	37	8	8381
09/20/87	66	4.39	2	8.50	57	9	11380
SUMMARY	1363	4.00	15	23.93	1277	86	267333

MONTHLY VECTOR REPORT (MENU:MVECTOR)

VECTOR: 1 (sales) DATE: 9/21/88

DATE	NO. CALLS ANSWERED	AVG SPEED ANS	NO. ABAN CALLS	AVG ABAN TIME	NO. CALLS ANS IN MAIN	NO. CALLS ANS IN BACKUP	TOTAL TIME IN VECTOR
08/19/87	408	5.61	8	25.38	397	11	79432
08/20/87	243	3.03	2	26.00	228	15	49494
08/21/87	238	3.33	1	14.00	218	20	47739
.							
.							
09/20/87	66	4.39	2	8.50	57	9	13380
SUMMARY	5348	4.00	75	23.93	5033	315	919778

Figure 4-11 Vector Reports

Table 4-4 Item Reference for the Vector Reports

Report Item	What It Measures	Units	Database Item Or Calculation Formula
VECTOR	Vector specified in the Reports Parameters screen.	Vector Number or synonym.	SYN(VECTOR)
DAY	Date covered in a daily report.	MM/ DD/ YY	DATE(D)
DATE (header)	Date of the output.	MM/ DD/ YY	DATE(J)
TIME	Intervals selected for a daily report.	Time	INTERVAL
DATE	Date covered in a weekly or monthly report.	MM/ DD/ YY	DATE(DAY)
NO. CALLS ANSWERED	Number of calls receiving an answer in the split or splits specified in this vector.	Calls	ANSMAIN + ANSBACK *
AVG SPEED ANS	Average speed of answer for calls that receive an answer in the split or splits specified in this vector.	Seconds	ANSDELAY/(ANSMAIN + ANSBACK) *
NO. ABAN CALLS	Number of calls that abandoned from the split or splits while being processed in this vector.	Calls	ABANDONS
AVG ABAN TIME	Average length of wait before calls abandon.	Seconds	AVG ABANDON TIME ABANTIME/ABANDONS
NO. CALLS ANS IN MAIN	Calls answered in the split specified in this vector's " queue to main split" command.	Calls	ANSMAIN
NO. CALLS ANS IN BACKUP	Calls answered in the split specified in this vector's " check backup split" command.	Calls	ANSBACK
TOTAL TIME IN VECTOR	Time call was under vector's control—that is, after entering the vector and before connecting to an agent, abandoning, or vector reaches a " stop" command.	Seconds	VECTIME

* No calculation for this formula.

Vector Directory Number Reports

Purpose	Provide historical data on incoming calls to a selected VDN.
Data File Used	HHOUR/ DN for daily report; DAILY/ DN for weekly and monthly reports.
Dependencies	Read permission for vector to which VDN is assigned.

NOTE The Daily, Weekly, and Monthly Vector Directory Number Reports are identical except the Daily report lists data by half-hour intervals instead of by dates.

This report covers calls that came to a single Vector Directory Number (Figure 4-12). Mapping of VDNs to splits in CMS follows these rules:

1. Each VDN must be associated with only one vector.
2. A vector can specify more that one split for queuing.
3. More than one VDN can terminate at a single vector.

Keep these rules in mind as you view VDN reports. The interpretation of each VDN report depends on the VDN-to-vector mapping and the vector-to-split mapping in your system.

```
                                  DAILY VECTOR DIRECTORY NUMBER REPORT        (MENU:DDNUM)
                                                                            DATE:  09/20/87
VECTOR DIRECTORY NUMBER: 6727 (Tech Supp)
DAY: 09/19/87

                          NO.      AVG       NO.      AVG              NO.           TOTAL
                        CALLS    SPEED      ABAN     ABAN           CALLS            TIME
TIME                 CARRIED      ANS     CALLS     TIME        ANSWERED          IN VDN
-------------------------------------------------------------------------------------------
08:00-08:30AM             54     3.89         2    23.41              52           11024
08:30-09:00AM             46     1.96         8    15.75              38            8584
09:00-09:30AM             66     2.39         8    18.75              58           17520
09:30-10:00AM             62     0.57         4    14.25              58           17879
-------------------------------------------------------------------------------------------
SUMMARY                  228     3.00        22    21.08            3600           55007


                                  WEEKLY VECTOR DIRECTORY NUMBER REPORT       (MENU:WDNUM)
                                                                            DATE:  09/20/87
VECTOR DIRECTORY NUMBER: 6727 (Tech Supp)

                          NO.      AVG       NO.      AVG              NO.           TOTAL
                        CALLS    SPEED      ABAN     ABAN           CALLS            TIME
DATE                 CARRIED      ANS     CALLS     TIME        ANSWERED          IN VDN
-------------------------------------------------------------------------------------------
09/14/87                 894     3.89        22    23.41             858          171024
09/15/87                 696     1.96         8    15.75             679          126584
09/16/87                 766     2.39         8    18.75             755          157520
09/17/87                 622     0.57         4    14.25             611          125879
09/18/87                 539     4.68        10    18.60             526          113168
09/19/87                 120    12.10        11    15.45             101           19189
09/20/87                 145     4.03        17    28.35              70           11314
-------------------------------------------------------------------------------------------
SUMMARY                 3782     3.00        80    21.08            3600          724678


                                  MONTHLY VECTOR DIRECTORY NUMBER REPORT      (MENU:MDNUM)
                                                                            DATE:  09/20/87
VECTOR DIRECTORY NUMBER: 6727 (Tech Supp)

                          NO.      AVG       NO.      AVG              NO.           TOTAL
                        CALLS    SPEED      ABAN     ABAN           CALLS            TIME
DATE                 CARRIED      ANS     CALLS     TIME        ANSWERED          IN VDN
-------------------------------------------------------------------------------------------
08/21/87                 894     3.89        22    23.41             858          171024
08/22/87                 696     1.96         8    15.75             679          126584
08/23/87                 766     2.39         8    18.75             755          157520
08/24/87                 622     0.57         4    14.25             611          125879
 .
 .
09/20/87                 145     4.03        17    28.35              70           11314
-------------------------------------------------------------------------------------------
SUMMARY                13777     3.00       333    21.08           12646         2674876
```

Figure 4-12 Vector Directory Number (VDN) Report

Table 4-5 Item Reference for the VDN Reports

Report Item	What It Measures	Units	Database Item Or Calculation Formula
VDN	Vector Director Number specified in the Reports Parameters screen.	VDN or synonym	SYN(DNEXT)
DATE(header)	Date of the output.	MM/DD/YY format	DATE(D)
TIME	Intervals selected for a daily report.	Time	INTERVAL
DAY	Day covered in a daily report.	MM/DD/YY format	DATE(J)
DATE	Days covered in monthly or weekly reports.	MM/DD/YY format	DATE(DAY)
NO. CALLS CARRIED	Number of calls carried for the VDN.	Calls	CARRIED
AVG SPEED ANS	Average speed of answer for calls that receive an answer in any split referenced in this VDN's vector.	Seconds	AVG ANSWER SPEED ANSDELAY / ANSWERED
NO. ABAN CALLS	Number of calls that abandoned while being processed in this VDN's vector.	Calls	ABANDONS
AVG ABAN TIME	Average length of wait before calls abandon.	Seconds	AVG ABANDON TIME ABANTIME / ABANDONS
NO. CALLS ANSWERED	Calls answered in the split specified in this VDN's vector.	Calls	ANSWERED
TOTAL TIME IN VDN	Total time of all calls in the VDN, including wait time, agent talk time, and wait time of abandoned calls.	Seconds	DNTIME DNWAITTIME + AGTIME

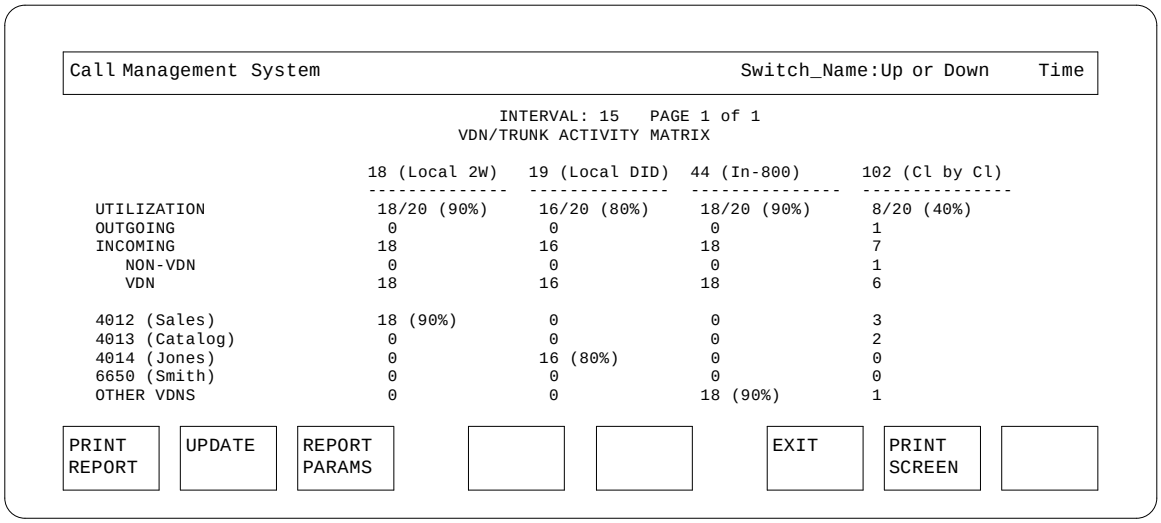
VDN/Trunk Activity Matrix Reports

Purpose	Monitor current trunk group utilization for selected trunk groups and VDNs.
Data File Used	None

This report displays real-time trunk group utilization on a VDN basis. The user can report up to four trunk groups and any number of VDNs. If a trunk group equals or exceeds a specified exception level, the figures are highlighted on the screen. Use this report to help you establish exception levels.

NOTE

This report does NOT create a permanent file with report items. Therefore, you cannot reference any items from the report to create custom reports.



```
Call Management System                                  Switch_Name:Up or Down    Time

                                   INTERVAL: 15   PAGE 1 of 1
                                VDN/TRUNK ACTIVITY MATRIX

                          18 (Local 2W)   19 (Local DID)  44 (In-800)      102 (Cl by Cl)
                          -------------   --------------  ---------------  ---------------
   UTILIZATION             18/20 (90%)     16/20 (80%)     18/20 (90%)      8/20 (40%)
   OUTGOING                 0               0               0               1
   INCOMING                18              16              18               7
      NON-VDN               0               0               0               1
      VDN                   18              16              18               6

   4012 (Sales)             18 (90%)        0               0               3
   4013 (Catalog)           0               0               0               2
   4014 (Jones)             0               16 (80%)        0               0
   6650 (Smith)             0               0               0               0
   OTHER VDNS               0               0               18 (90%)        1

PRINT REPORT | UPDATE | REPORT PARAMS |  |  | EXIT | PRINT SCREEN |
```

Figure 4-13 VDN/Trunk-Activity-Matrix Report

NOTE

The PRINT REPORT screen-labeled key prints a copy of the entire report, whereas the PRINT SCREEN key prints the portion of the report currently displayed on the terminal.

Table 4-6 VDN/ Trunk Activity Matrix Report Explanation

FIELD	EXPLANATION
DATE (header)	Date of the output.
TIME (header)	Time of the report.
TRUNK GROUP	Trunk group(s) specified in the Reports Parameters screen.
UTILIZATION	Number of trunks in use, the number of trunks available, and the percentage in use within the trunk group.
OUTGOING	Number of trunks in trunk group currently on outgoing calls.
INCOMING	Number of trunks in trunk group currently on incoming calls.
NON-VDN	The number of non-VDN incoming calls within the trunk group.
VDN	Number of VDN incoming calls within the trunk group.
INDIVIDUAL VDNS	The number of incoming calls for the VDN. If the percentage of trunks busy on incoming VDN calls equals or exceeds exception levels, the actual percentage also displays and is highlighted along with the call count.
OTHER VDNS	The number of incoming calls for the trunk group on VDNs other than those specified in the Reports Parameters screen.

Additional Vectoring Database Items

The following database items are available for use in Custom Reports, even though they do not appear as report items in standard vector and VDN reports. The items listed first collect data referred to as **intraflow** and **interflow** data in a non-vectoring environment.

Table 4-7 Other Vectoring Database Items

ITEM	EXPLANATION
INFLOW (Vectors)	This item captures, for a vector, only the number of calls routed to that vector from another vector via the **"Route to"** command. This number includes calls routed to unmeasured portions of the ACD and then routed again, via a VDN, to the vector.
INFLOW (VDNs)	This item captures, for a VDN, the number of calls routed to that VDN from a vector via the **"Route to"** command.
OUTFLOW (Vectors)	This item captures, for a vector, the number of calls that the vector routes via the **"Route to"** command to other destinations within the switch. In non-vectoring terms, this item represents the intraflow of calls out of a vector.
OUTFLOW (VDNs)	This item captures, for a VDN, the number of calls routed from that VDN via the **"Route to"** command in its assigned vector. Unlike OUTFLOW for vectors, this item includes calls routed to destinations outside the switch.
ROUTEDCALLS (Vectors)	This item captures, for a vector, the number of calls that the vector routes out of the switch via the **"Route to"** command. This number includes calls routed through Automatic Alternate Routing (AAR) and Automatic Route Selection (ARS).
FLOWTIME (Vectors)	This item captures, for a vector, the total time that a vector processes calls before it routes them via the **"Route to"** command to other destinations within the switch.
FLOWTIME (VDNs)	This item captures, for a VDN, the total time calls remain connected to that VDN before they are routed via the **"Route to"** command to other destinations.
ROUTETIME (Vectors)	This item captures, for a vector, the total time that the vector processes calls before it routes them out of the switch via the **"Route to"** command.

Table 4-7 Other Vectoring Database Items (Contd)

ITEM	EXPLANATION
CARRIED (Vectors)	This item captures, for a vector, the total number of calls that are either answered or abandoned while being processed by the vector. This item does not include calls answered or abandoned after a ''stop'' step.
FBUSYCALLS (VDNs)	This item captures, for a VDN, the total number of calls that receive a forced busy signal.
FBUSYCALLS (Vectors)	This item captures, for a vector, the total number of calls that receive a forced busy signal.
FBUSYTIME (VDNs)	This item captures, for a VDN, the total time that calls waited before receiving a forced busy.
FBUSYTIME (Vectors)	This item captures, for a vector, the total time that calls waited before receiving a forced busy.
FDISCCALLS (VDNs)	This item captures, for a VDN, the total number of calls that receive a forced disconnect.
FDISCCALLS (Vectors)	This item captures, for a vector, the total number of calls that receive a forced disconnect.
FDISCTIME (VDNs)	This item captures, for a VDN, the total time that calls waited before receiving a forced disconnect.
FDISCTIME (Vectors)	This item captures, for a vector, the total time that calls waited before receiving a forced disconnect.

Split Data Affected by Vectoring

Vectoring affects the way INFLOW and OUTFLOW capture data for splits. As a result, the Inflow and Outflow report items in standard Split Reports and System Reports (see Chapter 4, *3B Call Management System Administration* [585-215-504]) are affected. For a split in a vectoring ACD, INFLOW captures the number of calls routed to the split via a **"Check backup split"** command or **"Route to"** command in another vector. OUTFLOW captures the number of calls routed from the split's queue via a **"Check Backup Split"** or **"Route to"** command in its own vector. A call that fails to queue to the split before the vector routes the call will not be captured in OUTFLOW for the split.

NOTE INFLOW for a split will capture a call routed to that split only if the call had queued to another split before it was routed.

Data captured by INFLOW and OUTFLOW for splits will not always match data captured by INFLOW and OUTFLOW for vectors and VDNs. For example, if a call in a vector bypasses the ''Queue to Main Split'' command because of a ''Go to'' command, and is then routed via a ''Route to'' command, the call will be captured in OUTFLOW for the vector and VDN, but will not be captured by OUTFLOW for the main split in that vector. Also, if a call interflows (via the ''route to'' command), the split and VDN carrying the call will be pegged for an OUTFLOW call, but the vector will be pegged for a ROUTEDCALLS call.

Split Data Affected by Multiple Split Queuing

On G3i with Call Vectoring, a call can be queued to up to three splits simultaneously. As a result, CMS tracks a call queued to three splits as three separate calls until the call is answered, abandoned, or rerouted. This multiple split queuing also significantly affects the way CMS collects split data when the call is answered, abandoned, or rerouted. CMS collects data as described for the following conditions.

When a call has queued to three splits and:

The call is answered in one of the splits, CMS pegs that split with an answered call and pegs each of the other two splits with an OUTFLOW call.

The call abandons, CMS pegs an ABANDONS call for the first split the call queued to and pegs each of the other two splits with an OUTFLOW call.

The call is routed (via a "route to" command) to another destination, CMS pegs all three splits with an OUTFLOW call.

The call is routed (via a "route to" command) to a new split, the CMS pegs the new split with an INFLOW call.

The call is routed (via a "route to" command) to a new split and then becomes simultaneously queued to one or two additional splits, CMS pegs the first new split with an INFLOW call. Then, if the call is answered by one of the new splits, CMS pegs that split with an answered call and pegs the other splits with an OUTFLOW call.

Table 4-8 shows how a call would be pegged if the call queued to three splits (Splits 1, 2, and 3) in one vector, was sent to another vector via a ‘‘route to’’ another VDN, queued to three more splits (Splits 4, 5, and 6, with Split 4 queued first), and was finally answered in Split 5. The plus sign (+) indicates a peg.

Table 4-8 OUTFLOW/ INFLOW Pegging for Multiple Split Queuing Before and After a Route To Step

SPLITS QUEUED (BEFORE ROUTE)	OUTFLOW	INFLOW	ANSWER
1	+		
2	+		
3	+		
SPLITS QUEUED (AFTER ROUTE)	**OUTFLOW**	**INFLOW**	**ANSWER**
4	+	+	
5			+
6	+		

Notice that the first three splits are all pegged with OUTFLOW calls. Also, notice that Split 4, since it was the first split the call queued to after the ‘‘route to’’ step, is pegged with an INFLOW call. And since the call is finally answered in Split 5, Splits 4 and 6 are also pegged with OUTFLOW calls.

NOTE

The intraflow described in the preceding example would only occur with the ‘‘route to’’ step. The ‘‘go to vector’’ step would **not** cause intraflow for splits since a call stays queued to splits referenced in a vector even after a ‘‘go to vector’’ step. Therefore, if the call is already queued to three splits before reaching a ‘‘go to vector’’ step, the call will stay in those splits’ queues and will not queue to any of the splits in the next vector.

General Information

You use the Dictionary Subsystem to assign names and descriptions to VDNs and vectors. The names you assign will create a meaningful identification of the VDNs and vectors when you are using other CMS subsystems or when you are reading your reports.

The Dictionary Menu for CMS With Call Vectoring

You select the VDN-Synonyms or Vector-Synonyms screen from the Dictionary Menu (Figure 5-1) to assign names and descriptions to your VDNs and vectors.

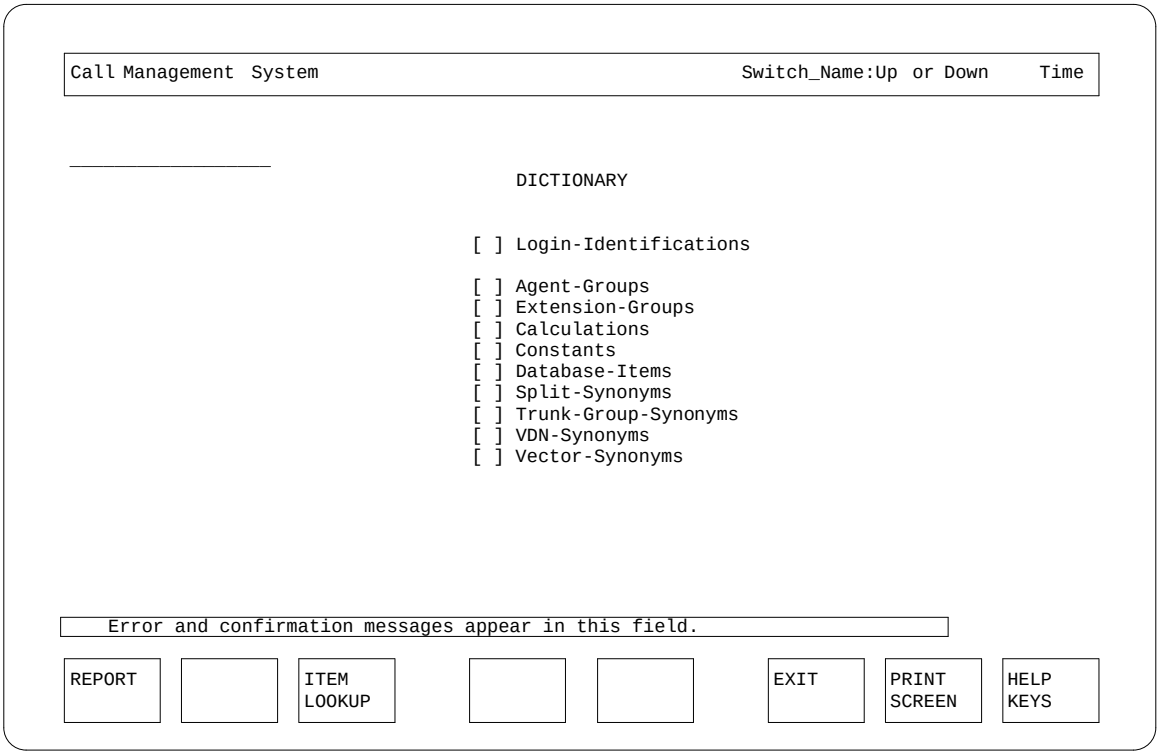


Figure 5-1 The Dictionary Menu

VDN Synonyms

Purpose	Display, add, change, or delete VDN synonyms to the Dictionary.
Access	Administration requires write access for Dictionary Subsystem and VDN's assigned vector.

You use the VDN Synonyms screen to assign synonyms (names) to the VDNs in your ACD. You should assign the same names for the VDNs as the names set up in the Names Database on the switch. This ensures that your CMS VDN reports show the same VDN names as the names that appear on an agent's display terminal.

Screen Description

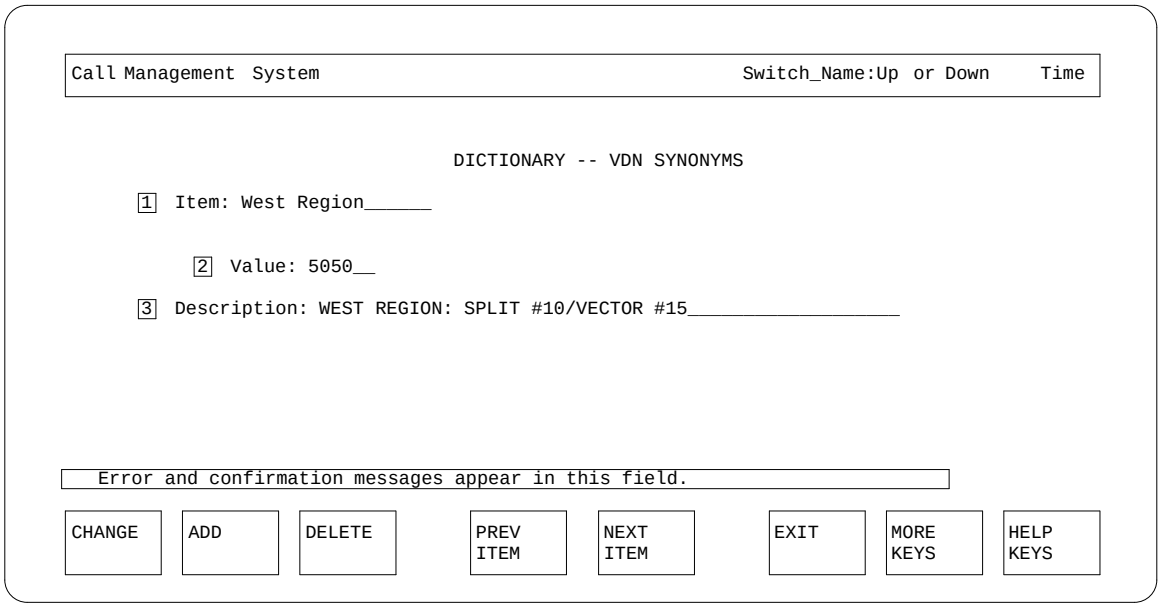
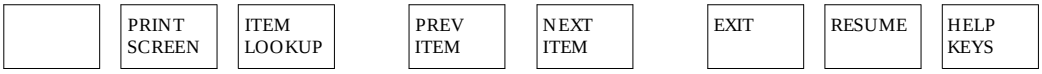


Figure 5-2 The VDN Synonyms Screen

Press MORE KEYS to display the relabeled keys:



Use the screen-labeled keys (SLKs) following the same procedures as used for any CMS Dictionary process. If necessary, refer to the *3B Call Management System Administration* (585-215-504) document for instructions.

Definitions of Fields

Field 1 Item

The synonym of the VDN you want to view, add, change, or delete. A VDN synonym consists of 20 or fewer alphanumeric characters. Blanks are allowed and counted.

Field 2 Value

The number of the VDN identifying the synonym. A VDN number consists of 3 to 5 numeric characters, 000 through 99999.

Field 3 Description

The description of the VDN (optional). The VDN description may consist of up to 40 alphanumeric characters. Blanks are allowed and counted.

Viewing a VDN Synonym

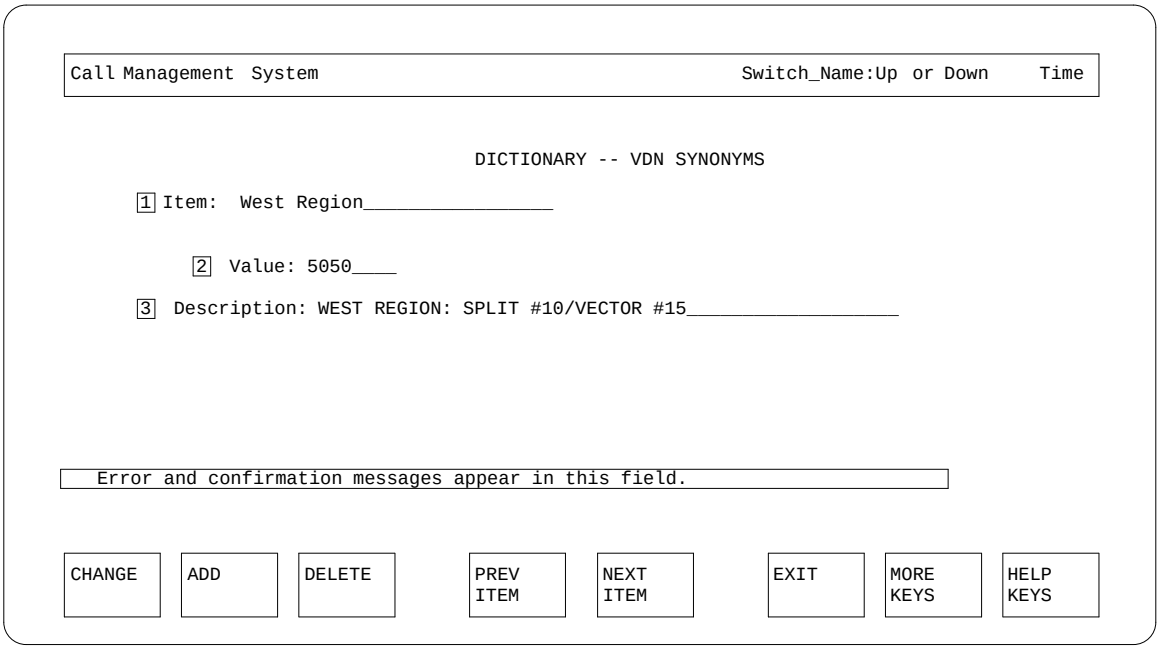
1 On the `DICTIONARY` menu, select the `VDN-Synonyms` option and press RETURN.

[A blank VDN Synonyms screen appears.]

2 In the `Item:` field, type the synonym of the VDN.

3 Press the RETURN key.

[The synonym's information displays on the screen as shown below.]



4 To continue viewing VDN synonyms, return to Step 2.

Adding a VDN Synonym

1 On the DICTIONARY menu, select the VDN-Synonyms option and press RETURN.

[A blank VDN Synonyms screen appears.]

2 In the Item: field, type the synonym for the VDN.

3 Move the cursor to the Value: field, and type the number of the VDN.

4 Move the cursor to the Description: field, and type the VDN description. This step is optional.

5 Press ADD.

[This adds the new VDN synonym to the Dictionary.]

6 To continue adding VDN synonyms to the Dictionary, move the cursor to the `Item:` field, and return to Step 2.

CAUTION

To prevent an erroneous addition to the Dictionary, clear any old unwanted characters remaining in a field after typing in new data. The data from a previous procedure remains on the screen to provide an additional shortcut. If you are adding a new synonym that is similar to an existing synonym, first display the old synonym's data. Then simply change the displayed data to match the new VDN's data and press ADD.

Changing a VDN Synonym

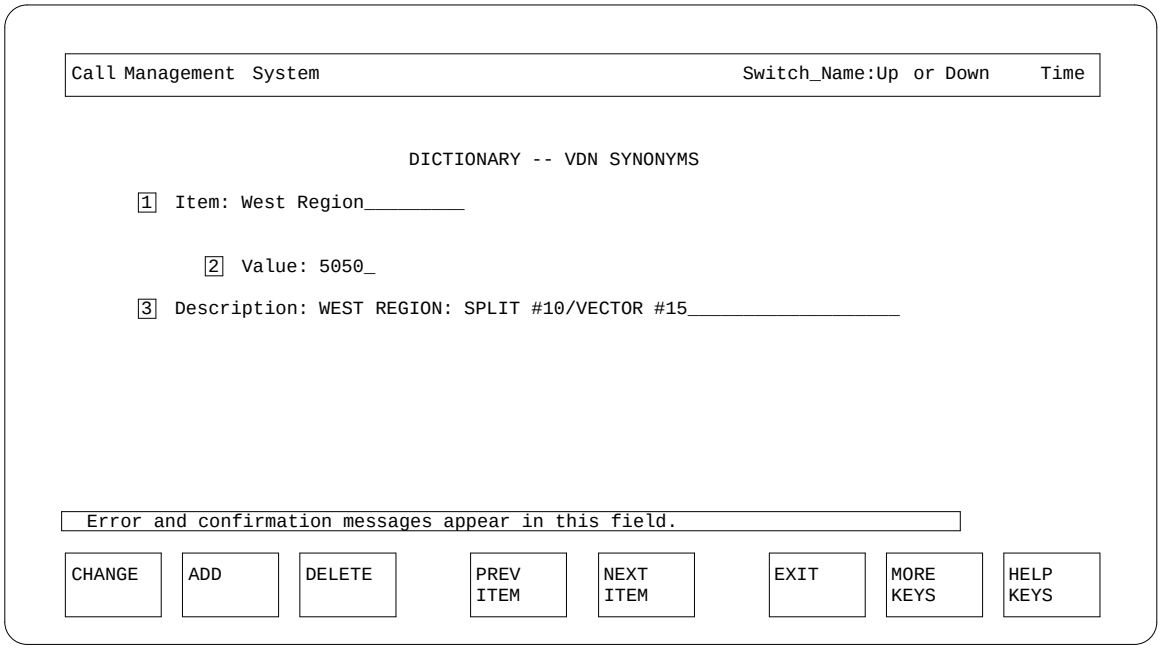
1 On the `DICTIONARY` menu, select the `VDN-Synonyms` option and press RETURN.

[A blank VDN Synonyms screen appears.]

2 In the `Item:` field, type the synonym of the VDN you desire to change.

3 Press RETURN.

[The Dictionary will be searched for the entered VDN synonym. When it is found, the data displays as shown on the following screen.]



4 Move the cursor to the field that you want to change and type in the new data over the old data.

5 Press CHANGE.

[The change will be added to the Dictionary.]

6 To continue changing VDN synonyms, move the cursor to the `Item:` field and return to Step 2.

CAUTION To prevent an erroneous change to the Dictionary, clear any old unwanted characters remaining in a field after changing the data.

Deleting a VDN Synonym

1 On the `DICTIONARY` menu, select the `VDN-Synonyms` option and press RETURN.

[The blank VDN Synonyms screen appears.]

2 In the `Item:` field, type in the VDN synonym you desire to delete.

3 Press RETURN.

[The Dictionary will be searched for the named item. When it is found, the data displays on the screen.]

4 Press DELETE.

[The VDN synonym (item) will be removed from the Dictionary.]

5 To continue deleting VDN synonyms, return to Step 2.

Vector Synonyms

Purpose	Display, add, change, or delete vector synonyms to the Dictionary.
Access	Administration requires write access for Dictionary Subsystem and vector.

You use the Vector Synonyms screen to assign synonyms (names) to the vectors in your ACD. You should assign the same names as those setup in the Names Database on the switch. This ensures that your CMS vector reports show the same vector names as the names that appear on agent's display terminal.

Screen Description

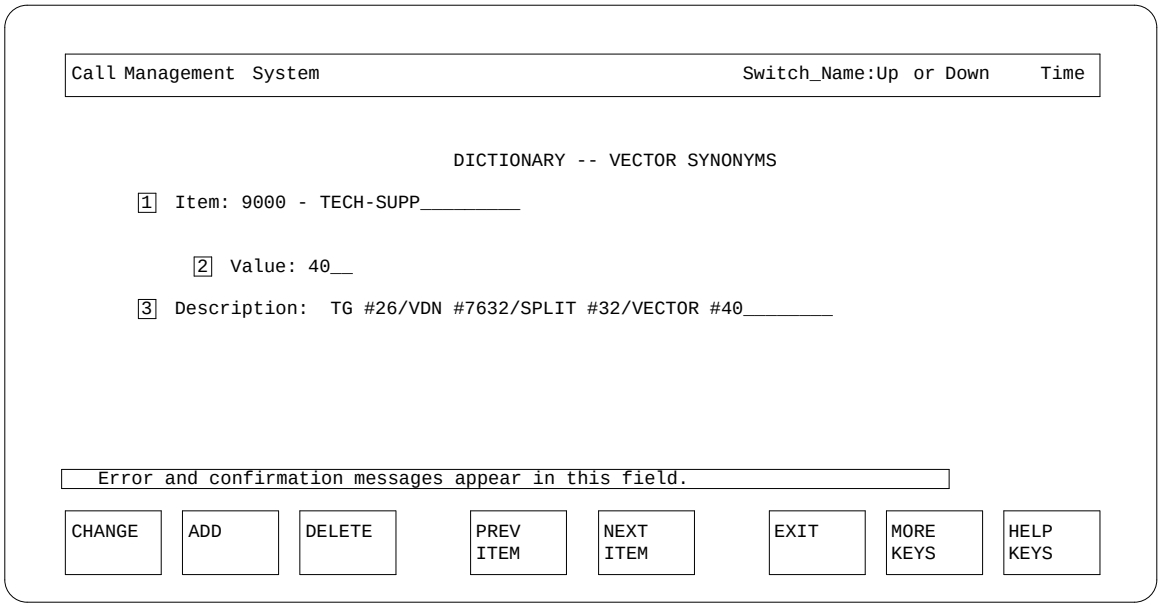
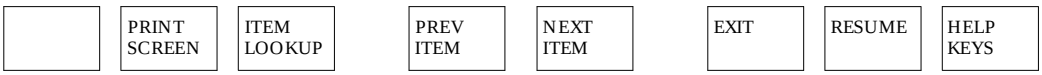


Figure 5-3 The Vector Synonyms Screen

Press MORE KEYS to display the relabeled keys:



Use the screen-labeled keys (SLKs) following the same procedures used for any CMS Dictionary process. If necessary, refer to the *3B Call Management System Administration* (585-215-504) document for instructions.

Definitions of Fields

Field 1 Item

The synonym of the vector you want to view, add, change, or delete. A vector synonym consists of 20 or fewer alphanumeric characters. Blanks are allowed and counted.

Field 2 Value

The number of the vector identifying the vector synonym. A vector number consists of 1 to 3 numeric characters ranging from 0 to 128.

Field 3 Description

The description of the vector (optional). A vector description may consist of up to 40 alphanumeric characters. Blanks are allowed and counted.

Viewing a Vector Synonym

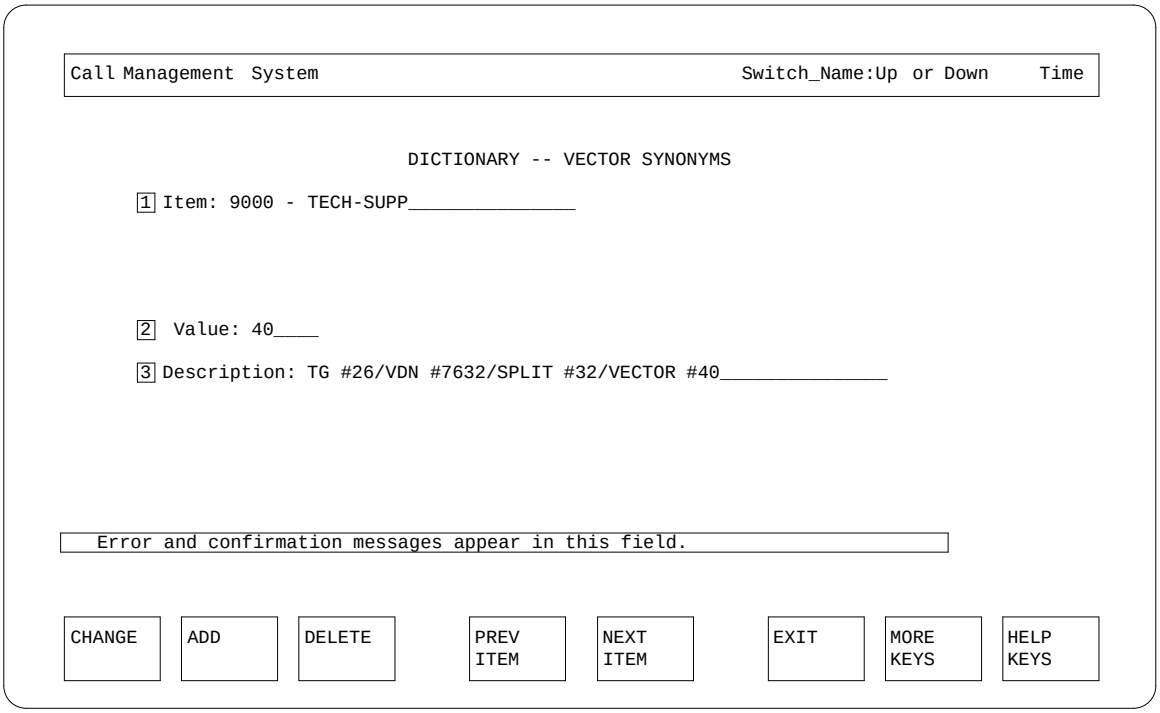
1 On the `DICTIONARY` menu, Select the `Vector-Synonyms` option and press RETURN.

[The blank Vector Synonyms screen appears.]

2 In the `Item:` field, type the synonym of the vector you want to view.

3 Press the RETURN key.

[The synonym's information displays as shown on the following screen.]



4 To continue viewing vector synonyms, return to Step 2.

Adding a Vector Synonym

1 On the DICTIONARY menu, select the Vector-Synonyms option and press RETURN.

[The blank Vector Synonyms screen appears.]

2 In the Item: field, type the synonym you want for the vector.

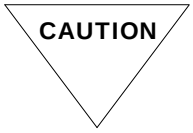
3 Move the cursor to the `Value:` field, and type in the number of the vector.

4 Move the cursor to the `Description:` field, and type the vector description; this is an optional field.

5 Press ADD.

[This adds the new synonym to the Dictionary.]

6 To continue adding a vector synonym to the Dictionary, move the cursor to the `Item:` field and return to Step 2.



To prevent an erroneous addition to the Dictionary, clear any old unwanted characters remaining in a field after typing in new data. The data from a previous procedure remains on the screen to provide an additional shortcut. If you are adding a new synonym that is similar to an existing synonym, first display the old synonym's data. Then simply change the displayed data to match the new Vector's data and press ADD.

Changing a Vector Synonym

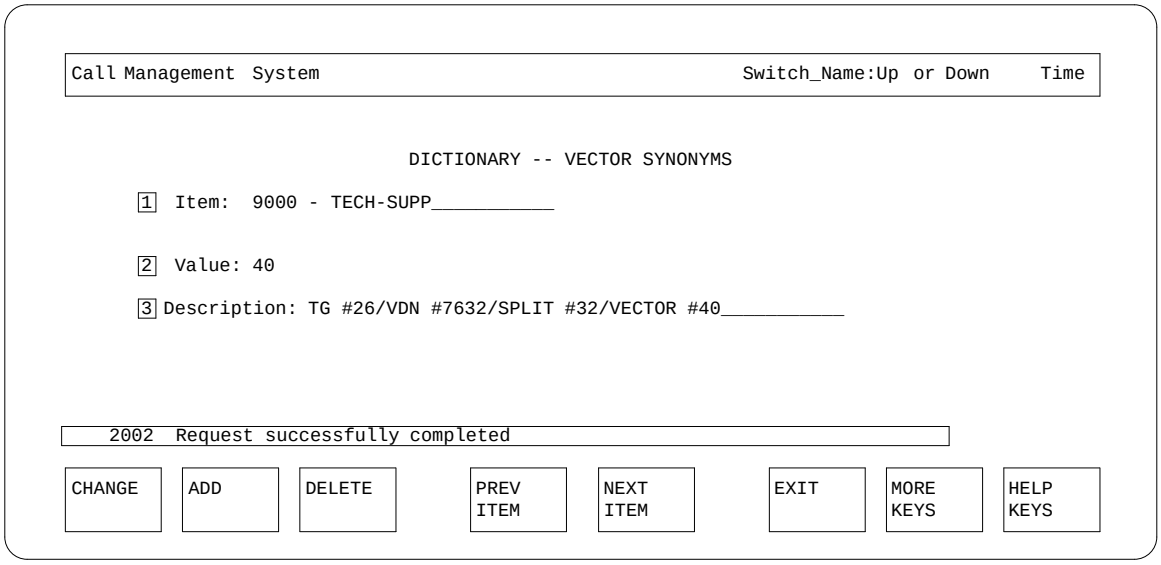
1 On the `DICTIONARY` menu, select the `Vector-Synonyms` option and press RETURN.

[The blank Vector Synonyms screen appears.]

2 In the `Item:` field, type the synonym you desire to change.

3 Press RETURN.

[The Dictionary will be searched for the named item. When it is found, the data displays as shown on the following screen.]



4 Move the cursor to the field that you want to change and type in the changes over the existing data.

5 Press CHANGE.

[The change will be added to the Dictionary.]

6 To continue changing vector synonyms, move the cursor to the `Item:` field and return to Step 2.

CAUTION To prevent an erroneous change to the Dictionary, clear any old unwanted characters remaining in a field after changing the data.

Deleting a Vector Synonym

1 On the `DICTIONARY` menu, select the `Vector-Synonyms` option and press RETURN.

[A blank Vector Synonyms screen appears.]

2 In the `Item:` field, type the synonym you desire to delete.

3 Press RETURN.

[The Dictionary will be searched for the named item. When it is found, the data displays on the screen.]

4 Press DELETE.

[The synonym (item) will be removed from the Dictionary.]

5 To continue deleting vector synonyms, return to Step 2.

NOTES

General Information

Generic 2/System 85 with Call Vectoring

You use the Configuration Subsystem to perform the following tasks:

Defining and modifying the steps in vectors

Reassigning VDNs to different vectors

Reassigning trunk groups to VDNs

Viewing the vectors that queue calls to a split.

These tasks are the primary means of managing call traffic with the Call Vectoring feature.

NOTE

These tasks differ considerably from the Configuration procedures for a non-vectoring CMS, and two screens — the Split Parameters Administration and the Split Trunk Group Assignments screens — are not available in CMS with Call Vectoring. Therefore, you should ignore the Trunk Group Assignments and Split Parameters sections in Chapter 6 of the *3B Call Management System Administration* (585-215-504) document.

Generic 3i with Call Vectoring

You use the Configuration Subsystem to perform the following task only:

Reassign VDNs to vectors.

You **cannot** view, define, or modify vectors or trunk group assignments.

The Configuration Menu for CMS With Call Vectoring

You perform the vectoring configuration tasks using the screens listed under ‘‘Vector’’ on the Configuration menu (Figure 6-1).

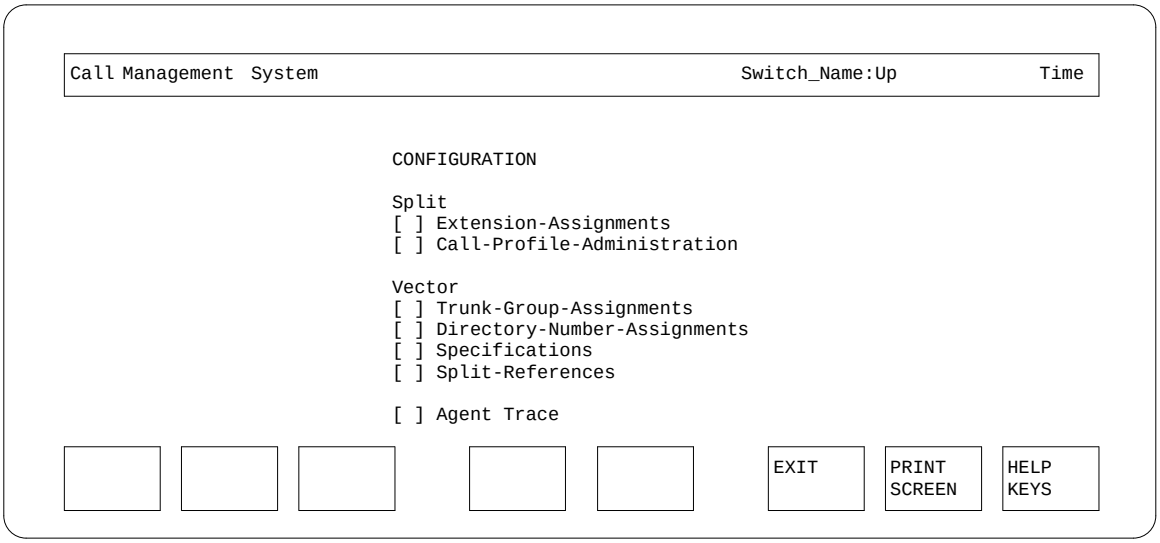


Figure 6-1 The Configuration Menu

NOTE

On Generic 3i, the following items will not appear on the Configuration menu:

```
Vector [ ] Trunk-Group-Assignments
Vector [ ] Specifications
Vector [ ] Split-References
```

Vector Trunk Group Assignments

Purpose	View and change trunk group assignments.
Access	Administration requires write access for Configuration Subsystem, trunk groups, and VDNs.

The initial assignment of trunk groups to VDNs occurs at the switch, but you can use this screen to search for and view those trunk group assignments and to reassign trunk groups to other VDNs. However, adding new trunk groups still requires administration on a switch.

NOTE This screen is not available if you have a Generic 3i switch. Instead, you must use the DEFINITY Manager I to assign trunk groups to VDNs.

Screen Description

```
Call Management System                                Switch_Name:Up            Time

                    CONFIGURATION -- VECTOR TRUNK GROUP ASSIGNMENTS

      1  VDN: 6727_____________________

      2  Trunk Group      Synonym                  Trunk Group     Synonym
         65            65_6759010B5_NSTS
         66            66_6769010B6_NSTS




      3    Trunk Groups:_____________________________________
      4 Destination VDN:_____________________________________
                                                          [Page 1 of 1]

  Error and confirmation information appears on this line.

 CHANGE   COMMAND   SEARCH                                  EXIT   PRINT    HELP
          LINE                                                     SCREEN   KEYS
```

Figure 6-2 The Vector Trunk Group Assignments Screen

Use the screen-labeled keys (SLKs) following the same procedures as used for any CMS Configuration process. If necessary, refer to the *3B Call Management System Administration* (585-215-504) document for instructions.

Definitions of Fields

Field 1 VDN

The VDN (Vectoring Directory Number) or synonym containing the trunk group assignments you wish to view or change. A VDN consists of 3 to 5 numeric characters ranging from 000 through 99999. A VDN synonym consists of 20 or fewer alphanumeric characters. Blanks are allowed and counted.

Field 2 Data Display field **(Read Only Field)**

A display of trunk groups currently assigned to this VDN.

Field 3 Trunk Group

The trunk group numbers specified either for reassignment or search purposes. On DEFINITY Communications System Generic 2 and System 85, a trunk group number consists of 2 or 3 numeric characters ranging from 18 to 255.

Field 4 Destination VDN

The VDN to which trunk groups will be reassigned. A VDN consists of 3 to 5 numeric characters ranging from 000 to 99999.

Viewing VDN Trunk Group Assignments

1 On the CONFIGURATION menu, select the Vector Trunk-Group-Assignments option and press RETURN.

[A blank Vector Trunk Group Assignments screen appears. See the following screen.]

```
Call Management System                                  Switch_Name:Up          Time

                    CONFIGURATION -- VECTOR TRUNK GROUP ASSIGNMENTS

   1 VDN: _____________________

   2  Trunk Group    Synonym                      Trunk Group    Synonym




   3      Trunk Groups:_____________________________________
   4   VDN Destination:_____________________________________
                                                                [Page 1 of 1]
  Error and confirmation information appears on this line.

CHANGE | COMMAND LINE | SEARCH |  |  | EXIT | PRINT SCREEN | HELP KEYS
```

2 In the VDN: field, type the number or synonym of a VDN to view the VDN's assignments.

3 Press RETURN.

[The trunk group assignments display on the screen.]

4 To continue viewing trunk group assignments, return to Step 2.

Searching for a Trunk Group VDN Assignment

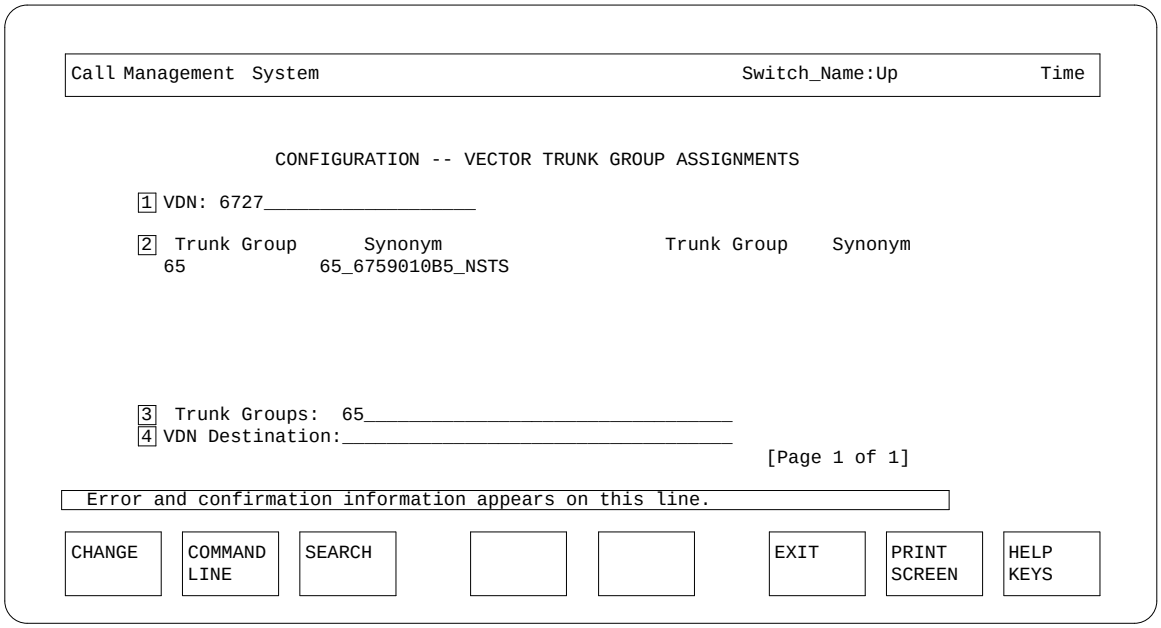
1 On the `CONFIGURATION` menu, select the `Vector Trunk-Group-Assignments` option and press RETURN.

[A blank Vector Trunk Group Assignments screen appears.]

2 Move the cursor to the `Trunk Group(s):` field, and type the number of the trunk group.

3 Press SEARCH.

[The VDN containing this trunk group assignment appears. See the following sample screen.]



4 To continue searching for a trunk group's VDN, return to Step 2.

Moving a Trunk Group to a New VDN

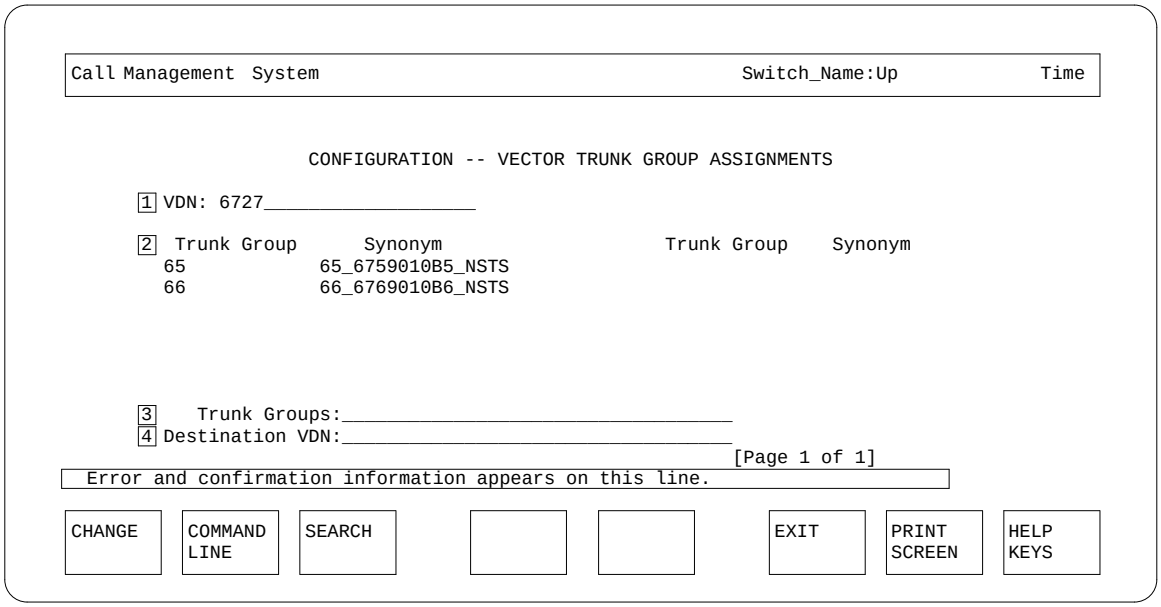
1 On the CONFIGURATION menu, select the Vector Trunk-Group-Assignments option and press RETURN.

[A blank Trunk Group Assignments screen appears.]

2 This and the following step are optional. (If you do NOT need to view the VDN's trunk group assignments, proceed to Step 4.) In the VDN: field, type the VDN number or synonym currently containing the trunk group.

3 Press RETURN.

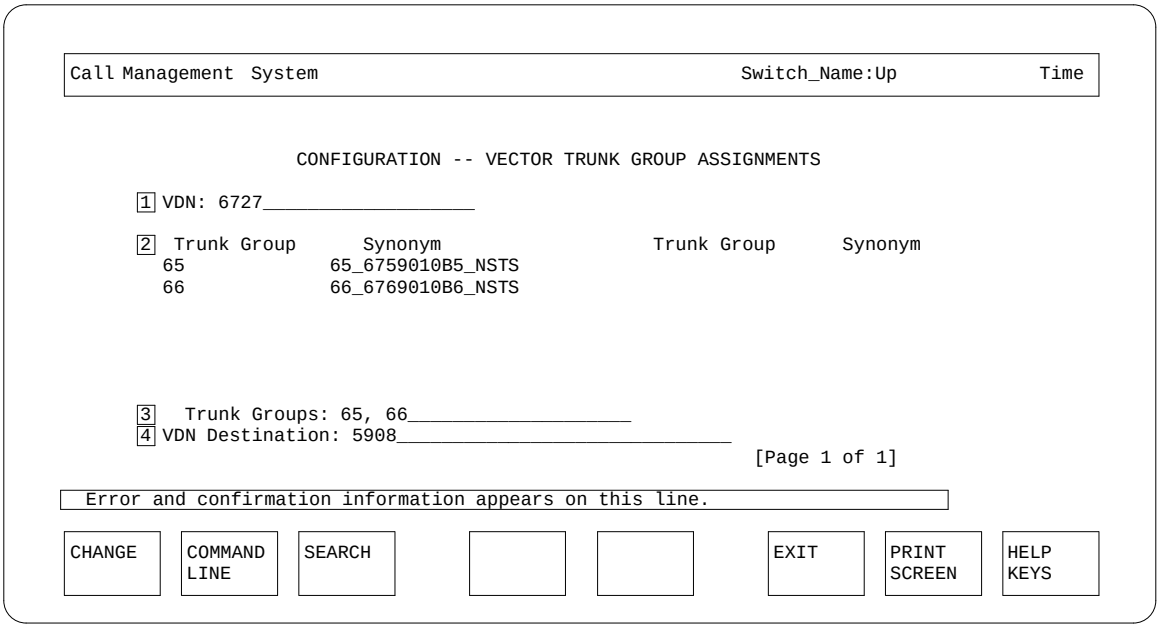
[The trunk assignments display on the screen, as in the following example:]



4 Move the cursor to the Trunk Group(s): field, and type the number (NO synonyms) of the trunk group or groups to move. The entry may contain single trunk group numbers separated by spaces or commas, ranges separated by hyphens, or both individual numbers and ranges.

5 Move the cursor to the `VDN Destination:` field, and type the number of the new VDN associated with the trunk groups. To DELETE a trunk group's association with a VDN, enter "0" in this field as the VDN destination.

[The following screen appears.]



6 Press CHANGE or COMMAND LINE.

[If you press CHANGE, the trunk group move occurs immediately. Also, the VDN's new assignments are displayed, which verifies that the move was successful.]

[If you press COMMAND LINE, the Schedule Subsystem is invoked where you can schedule this administrative activity to take place at another time.]

If necessary, refer to the *3B Call Management System Administration* (585-215-504) document for instructions.

7 To continue moving trunk groups to new VDNs, return to Step 2 or Step 4.

Vector Directory Number Assignments

Purpose	Display and change vector directory number assignments.
Access	Administration requires write access for Configuration Subsystem and vectors.

The initial assignment of VDNs to vectors occurs at the switch. You use this screen to search for and view those VDN assignments and to reassign VDNs to other vectors. However, assigning new VDNs still requires administration on a switch.

Screen Description

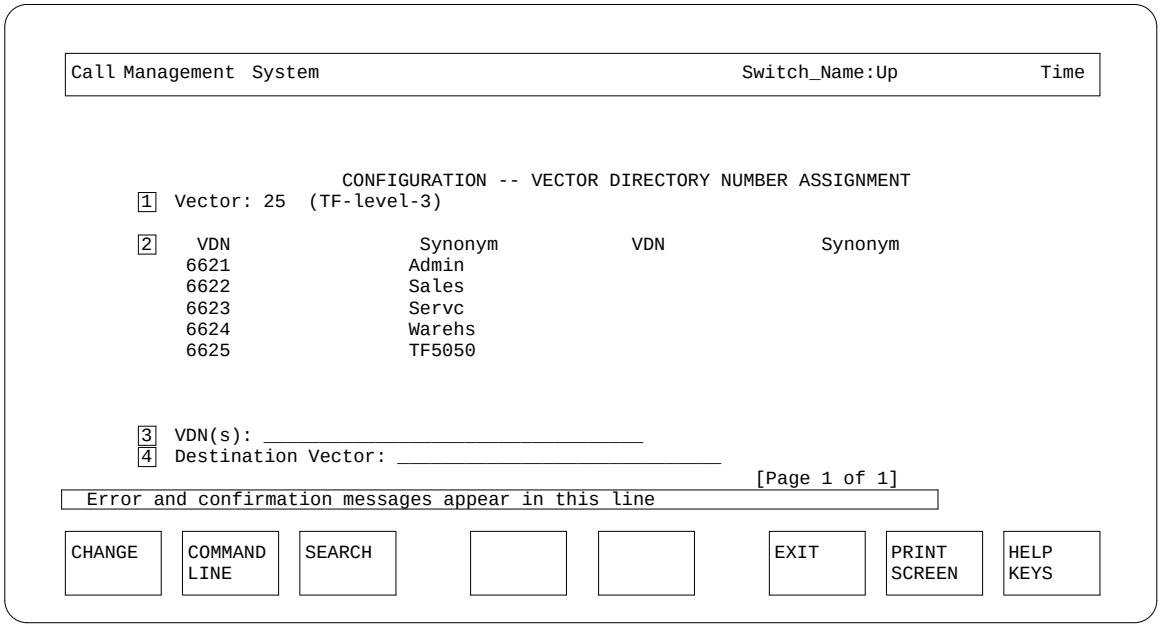


Figure 6-3 The Vector Directory Number Assignment Screen

Use the screen-labeled keys (SLKs) following the same procedures as used for any CMS Configuration process. If necessary, refer to the *3B Call Management System Administration* (585-215-504) document for instructions.

Definitions of Fields

Field 1 Vector

The vector or vector synonym to which the VDNs are assigned. A vector number consists of 1 to 3 numeric characters ranging from 1 to 128. A vector synonym consists of 20 alphanumeric characters. Blanks can be used and are counted.

Field 2

Display of the VDNs and their synonyms assigned to the vector.

Field 3 VDN(s)

The field containing a VDN to search for or to reassign. On Generic 2/ System 85, a VDN consists of 3 to 5 numeric characters ranging from 000 through 99999. On Generic 3i, a VDN consists of 1 to 5 numeric characters ranging from 0 to 99999.

Field 4 Destination Vector

The field containing a VDN's newly assigned vector. A vector number consists of 1 to 3 numeric characters ranging from 1 to 128. Though Generic 3i can have 256 vectors, CMS can only measure and administer the first 128.

Viewing VDN Assignments To a Vector

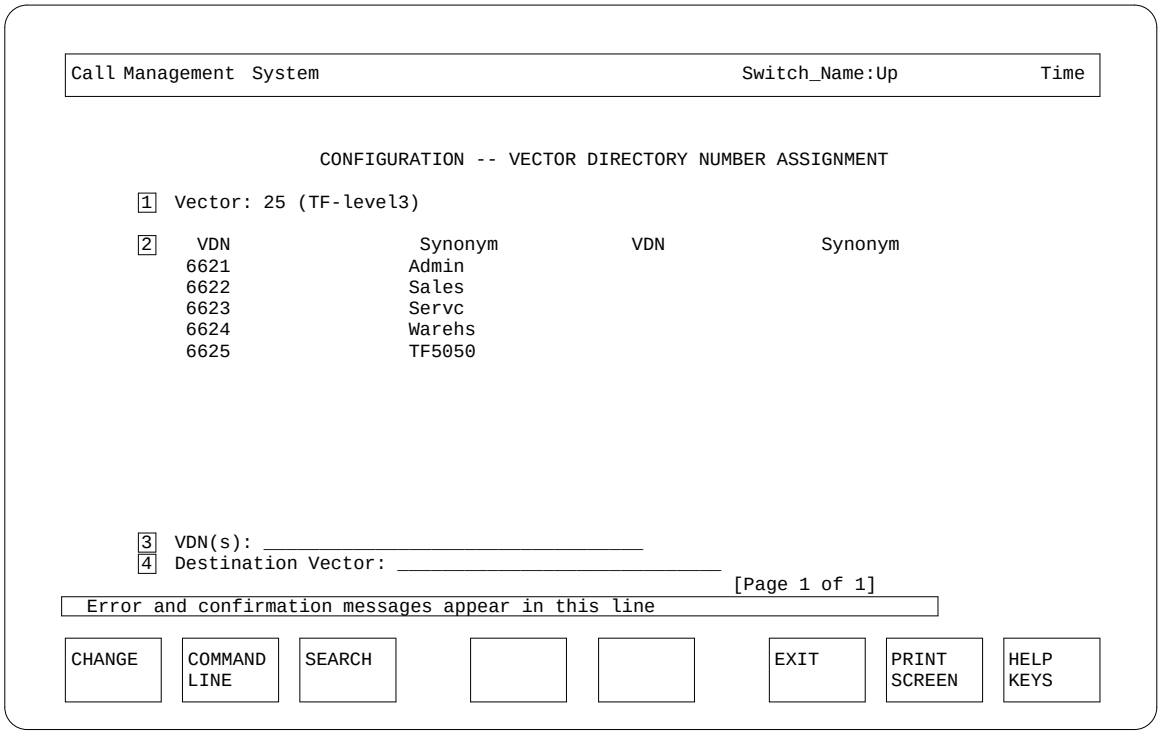
1 On the `CONFIGURATION` menu, select the `Vector Directory Number Assignment` option and press RETURN.

[The Vector Directory Number Assignment screen appears.]

2 In the `Vector:` field, type a number of a vector to view.

3 Press RETURN.

[The vector's current VDN assignments display, as shown in the following screen.]



4 To continue viewing a vector's VDN assignments, return to Step 2.

Searching for a VDN

1 On the CONFIGURATION menu, select the Vector Directory Number Assignment option and press RETURN.

[The Vector Directory Number Assignment screen appears.]

2 Move the cursor to the `VDN(s):` field, and type the number of the VDN for which you are searching.

3 Press [SEARCH].

[The page of data containing that VDN appears on the screen, along with the vector assignment for that VDN (in the `Vector: field).]`

4 To continue searching for a VDN, return to Step 2.

Reassigning a VDN

1 On the `CONFIGURATION` menu, select the `Vector Directory Number Assignment` option and press [RETURN].

[The Vector Directory Number Assignment screen appears.]

2 This and the following step are optional. (If you do NOT need to view a vector's assignments, go to Step 4.) In the `Vector:` field, type in the vector currently containing the VDN.

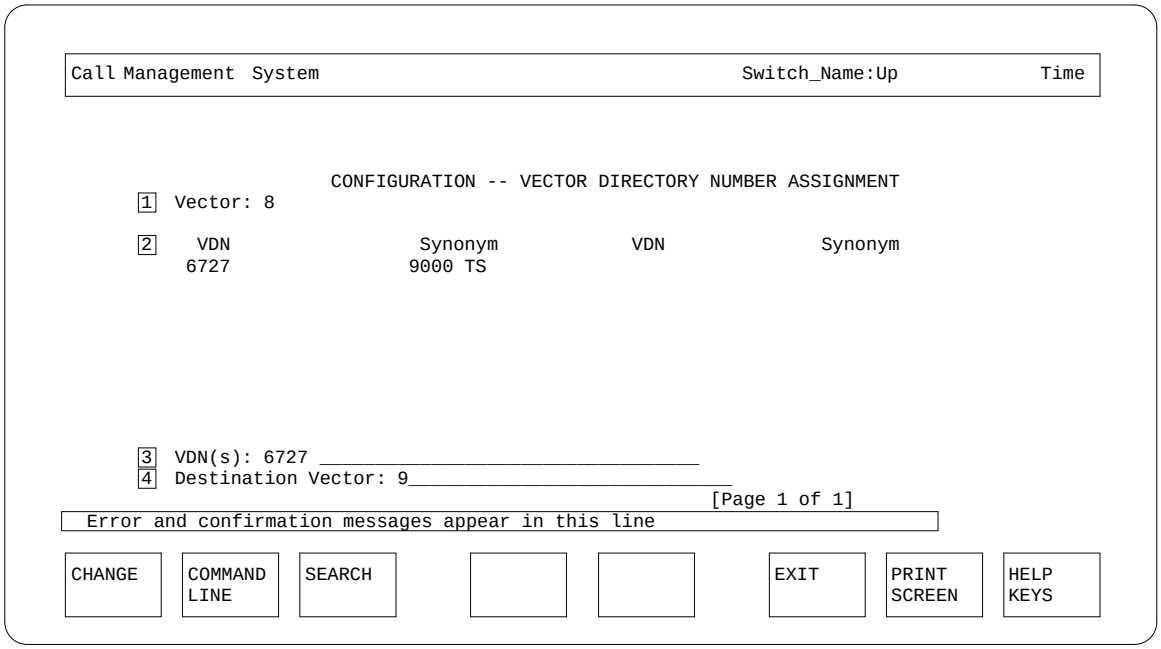
3 Press [RETURN].

[The current assignment of VDNs to this vector appears on the screen.]

4 Move the cursor to the `VDN(s):` field, and type the number or numbers of VDNs to reassign. The entry may contain single VDNs separated by spaces or commas, ranges separated by hyphens, or both individual numbers and ranges.

5 Move the cursor to the `Destination Vector:` field, and type the number of the new vector assignment.

[The screen appears as shown in the following example.]



6 Press CHANGE or COMMAND LINE.

[If you press CHANGE, the reassignment of the VDNs occurs.]

[If you press COMMAND LINE, the Schedule Subsystem is invoked where you can schedule this administrative activity to take place at another time.]

If necessary, refer to the *3B Call Management System Administration* (585-215-504) document for instructions.

7 To continue reassigning VDNs, return to Step 2 or Step 4.

Vector Specifications

Purpose	Display, create, change, copy, and delete vectors.
Access	Administration requires write access for vector and Subsystem.
Dependencies	Vectoring must be active in your system. The link to the switch must be up and in ‘‘data transfer.’’

NOTE

This screen is not available if you have a Generic 3i switch. Instead, you must use the DEFINITY Manager I to create call vectors.

Vectors can be specified using the Configuration Specifications screen in the CMS. Before reading this section, you should be familiar with the material in Chapter 2, ‘‘Description of the Call Vectoring Feature - Generic 2/ System 85,’’ which covers the major concepts of call vectoring needed to administer vectors.

Vectors are made up of **steps**. Up to 15 steps can be included in any vector, and you can specify up to 128 individual vectors. Each step consists of a single **command** and possible **conditions** that modify the command. You can create a vector with any commands in any order as long as there is at least one step. However, just as in any other type of programming, every step you create in a vector will be read literally by CMS unless you tell it otherwise. Therefore, you should be very careful to check your vectors step-by-step, walking through every scenario to ensure that the vector will work.

Certain error checking is done by the editing module within the Vector Specification process to prevent impossible steps from being accepted into the vector. These are noted by error messages on the screen.

The specification of vectors can include any of the following five procedures:

Viewing a vector’s specifications

Creating a new vector

Changing (or editing) an existing vector

Copying a vector

Deleting a vector.

In most cases, when creating a vector, you can save time by copying an existing vector, then editing it. Also, when creating a vector, you should draw a flow diagram of the steps to ensure calls will be handled the way you intend.

NOTE The switch administrator initially creates vector numbers on a switch.

Screen Description

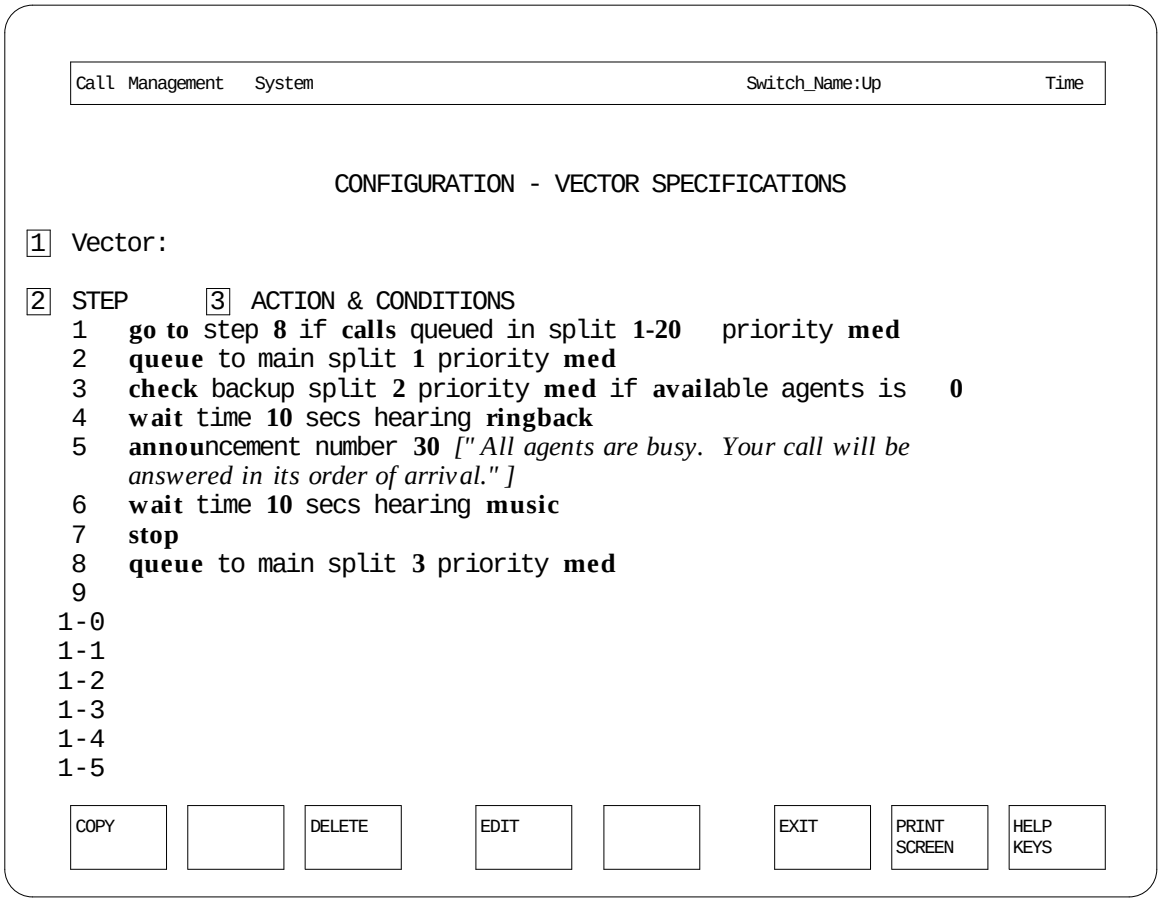


Figure 6-4 Vector Specification Screen Layout

Definitions of Fields

Field 1 Vector

The number you assign or that was previously assigned to the vector. The range of vector numbers is 1 through 128.

Field 2 Step

The number of the step in the vector.

Field 3 Action & Conditions

The step specifications including the vector commands and conditions.

Using the Vector Specification Screen

The rules for placing vector steps into a vector table are as follows:

You can alternate between "edit mode" and a "switch data mode" in the vector specification screen. The edit mode allows you to make changes in the vector. The switch data mode allows you to see the current switch version of a vector before any editing changes were made. You can change modes by pressing the SWITCH DATA SLK (from the edit mode) or the EDIT SLK (from the switch-data mode).

In the edit mode, commands are written to a step when you type the abbreviation of the command in the blank field next to the step number. At this point, the command is initialized with the default values or blank fields with underscores for conditions.

In the edit mode, condition fields are highlighted— for example:

```
queue to main split __ priority low
```

In the edit mode, some conditions display a default. To retain the default condition, simply use the down arrow key to move to the next condition or step leaving the default condition unchanged.

In the edit mode, use the up arrow and down arrow keys at the right of your keyboard to move the cursor backwards and forward through the fields of a command.

Testing Your Vectors

It is strongly recommended that every vector be fully tested before it is placed in control of actual call processing. Call Vectoring is a powerful tool that could produce highly undesirable and unexpected results in response to an ill-conceived or misprogrammed vector.

To test vectors, reserve one VDN, one vector, and a few answering destinations of each type for testing purposes. Test each new proposed vector by first using the same logic in the test vector. However, in the testing environment conditional parameters can be relaxed to simplify the testing process. In this way, the logic of each new vector can be tested to ensure effective and sane results. After successfully testing a vector, you can simply copy the logic to the planned vector number and change the parameters as desired. Your test vector is then available to test your next new vector.

Vector Commands and Conditionals

The following table describes the commands and conditions used to specify vectors:

Table 6-1 Vector Commands

COMMAND	CONDITIONS	KEYWORDS/ ABBR'NS	HOW TO USE
queue to main split		**queue, q**	Calls under control of a vector with this command attempt to connect to an agent in the split whose number is entered in the blank, and, failing that, queue to the split. (valid range: 1-60)
queue to main split	priority **low**	**low, l; medium, m; high, h; top, t**	Priority can be: "low," "med," "high," and "top." "Low" is the default. With this tool, the same call can requeue to the same split at different priorities (with multiple queue-to-main-split steps) or different calls can be simultaneously queued to the same split at different priorities (using different vectors).
check backup split		**check, c**	While a call is queued to main split, a second split will be checked every 2 seconds. This command operates similarly to the conditional intraflow process in non-vectoring ACDs.

Table 6-1 Vector Commands (Contd)

COMMAND	CONDITIONS		KEYWORDS/ ABBR'NS	HOW TO USE
check backup split	priority **low**		**low, l; medium, m; high, h; top, t**	Priority level at which you would like this call queued to the backup split. Low is the default.
check backup split	priority **low**	if **avail**able agents	**avail, a**	This sets a condition for queuing to the backup split— a minimum number of available agents in the backup split. Available is the default.
check backup split	priority **low**	if **staff**ed agents	**staff, s**	This sets a condition for queuing to the backup split— a minimum number of staffed (logged-in) agents in the backup split.
check backup split	priority **low**	if **calls** queued	**calls, c**	This sets a condition for queuing to the backup split— a maximum length of queue in the backup split.
check backup split	priority **low**	if **oldes**t call waiting	**oldes, o**	This sets a condition for queuing to the backup split— the number of seconds the oldest call in the backup split's queue has been waiting. The call queues if the oldest call has been waiting less than the specified value.

NOTE

Means ''greater than''; means ''less than.''

Table 6-1 Vector Commands (Contd)

COMMAND	CONDITIONS	KEYWORDS/ ABBR'NS	HOW TO USE
route to		**route, r**	Route the call to a destination whose Abbreviated Dialing group-list number (1 to 95) is entered. The ''route to'' step is bypassed if one of the following conditions exists: - The extension is busy. - No trunks are available (in the case of remote extensions). - The receiving vector rejects the call on a Look-Ahead Interflow basis. - The destination does not exist for the AD list number. If the ''route to'' is the last vector step, a busy extension or trunk group will be retried every 2 seconds. If the ''route to'' is the last vector step and the step fails due to a look-ahead rejection, the ''route to'' step will act like a ''stop'' step, and the call will continue to receive the treatment it had prior to the ''route to'' step.
announcement number		**annou, a**	Give the caller an announcement by specifying the announcement number (16 to 99).
wait time secs		**wait, w**	The call waits a specified even number of seconds (2 to 998).
wait time secs	hearing **silence**	**silence, s; ringback, r; music, m**	You can specify what the caller hears as: ''silence,'' ''ringback,'' or ''music.'' The default is ''silence''.
go to step if		**go to, g**	Go to another step (1 to 15) in the vector, based on one of six conditions. Continue vector processing from that step.
go to step if	**uncon**ditionally	**uncon, u**	The''go to'' always executes, branching either forward or backward. This is the default.

Table 6-1 Vector Commands (Contd)

COMMAND		CONDITIONS	KEYWORDS/ ABBR'NS	HOW TO USE
go to step	if	**time** of day is : to :	**time, t**	Enter one of the following in the first and fourth fields: "all," "mon," "tue," "wed," "thr," "fri," "sat," "sun." Enter military format time (00:00 to 23:59) in the second, third, fifth, and sixth fields. Each time field requires 2 numerics, use leading zeros if needed.
go to step	if	**staff**ed agents in split is	**staff, s**	After "split," enter a measured split number. This can be the main split, backup split, or any other split. The default is zero. The second field can take or — being the default. The final field is number of agents staffed (logged in) at the split.
go to step	if	**avail**able agents in split is	**avail, a**	Split number: enter any measured split in the blank. In the field after " is," type or . Number of available agents: the number of available agents in the specified split for the " go to" to work.
go to step	if	**calls** queued in split is	**calls, c**	Split: any measured split; type or in the next blank. Finally, type the number of queued calls that are required for the " go to" to work.

Table 6-1 Vector Commands (Contd)

COMMAND	CONDITIONS	KEYWORDS/ ABBR'NS	HOW TO USE
go to step if	**calls** queued in split is priority **low**	**low, l; medium, m; high, h; top, t**	Select one of the priority levels; default is low. This checks for the number of calls queued at the indicated priority and all higher priority levels.
go to step if	**oldes**t call waiting in split is	**oldes, o**	Enter the split number, or , and the number of seconds.
go to step if	**oldes**t call waiting in split is priority **low**	**low, l; medium, m; high, h; or top, t**	Enter the priority level at which the trigger call is waiting; default is low.
busy		**busy, b**	Stop all processing; remove call from any queue. Stop backup checking, and return busy signal.
disconnect after announcement number		**disco, d**	Forced disconnect. If announcement is "none," no announcement. Otherwise the announcement precedes the disconnect. Announcement number range is 16 to 99. Answer supervision is sent immediately prior to disconnecting the call, if it has not been sent already (except on ISDN trunks)

Table 6-1 Vector Commands (Contd)

COMMAND	CONDITIONS	KEYWORDS/ ABBR'NS	HOW TO USE
stop		**stop, s**	Stop vector processing. Stop CMS measurement of the vector. Continue current call processing: call remains queued if it was already queued. Backup-split checking continues every 2 seconds. A wait feedback in the previous step continues indefinitely, until the call is answered or abandoned. CMS measurement continues on the call for the split queued to (if the call is queued) and the VDN called. "Stop" is not necessary if the step is the last in the vector.

Viewing Vector Specifications

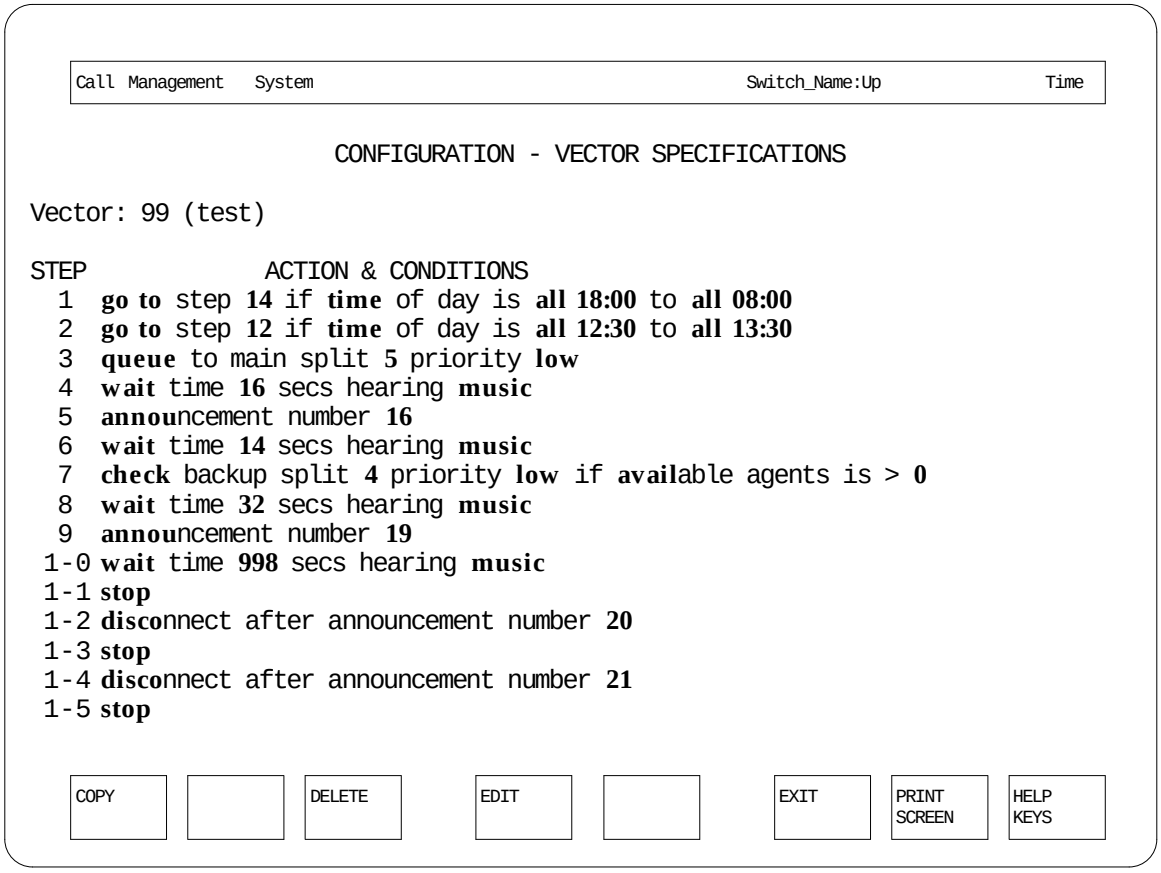
1 On the CONFIGURATION menu, select the Specification option under Vector and press RETURN.

[You will see a blank Vector Specifications screen.]

2 In the Vector: field, enter the number (1 through 128) of the vector you wish to view.

3 Press RETURN.

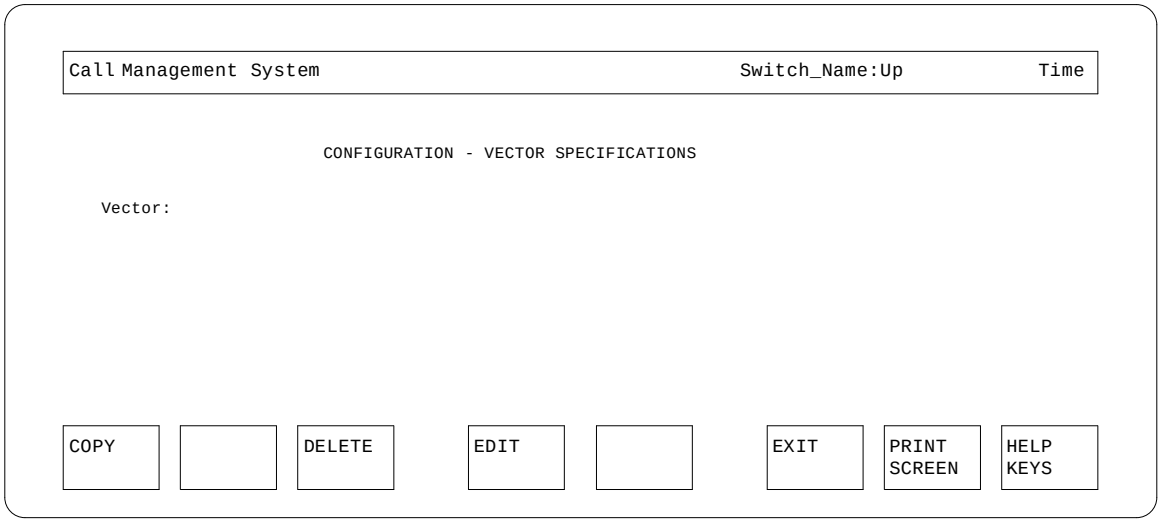
[The vector's specifications are displayed on the screen.]



Creating a New Vector

1 On the CONFIGURATION menu, select the Specification option under Vector and press RETURN again.

[You will see a blank Vector Specifications screen.]



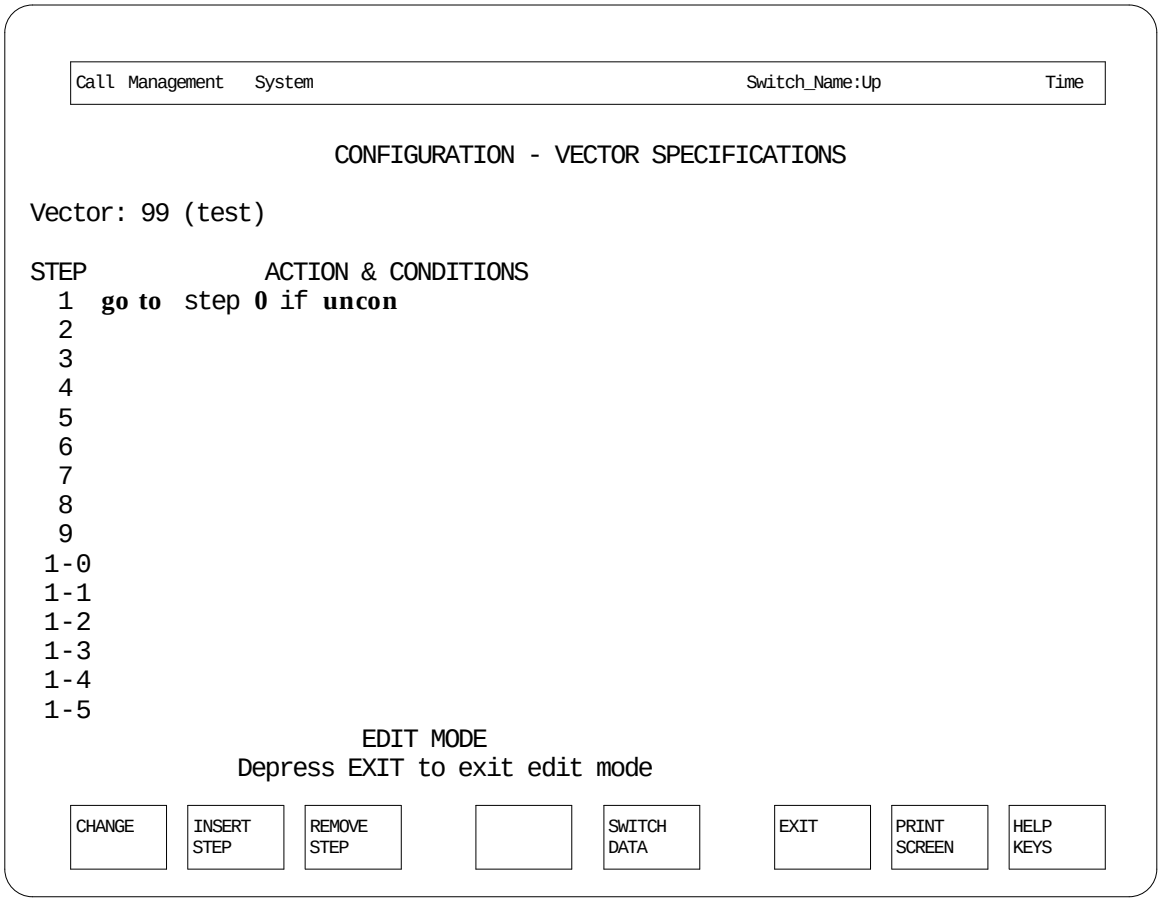
2 In the Vector: field, enter the number (1 through 128) of the vector. To fully demonstrate how to create a new vector, we will create a test vector. Design your own vectors as needed and use this vector as an example only. For this example, enter ‘‘99’’.

3 Press EDIT.

[You will be placed in the edit mode. The data for the vector (in the case of a new vector, there is none) appears on the screen with the cursor at Step 1.]

4 In the field next to Step 1, enter ‘‘g’’ as the abbreviation of the first command for this example test vector.

5 The command appears in the space for the step; see the following screen.



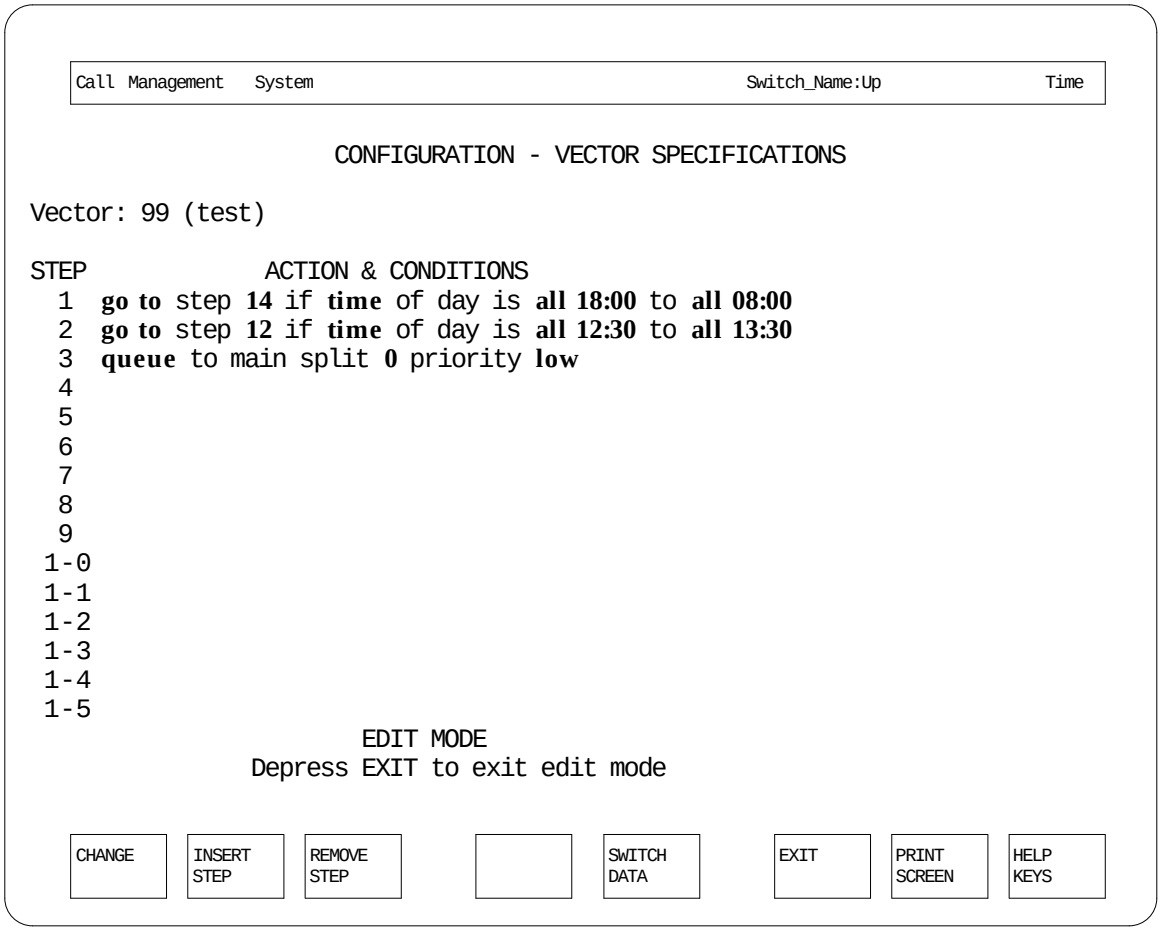
6 Fill in the ‘‘go to’’ step number (1 through 15) by entering ‘‘14’’. In the field after ‘‘if’’, type in ‘‘t’’ over the default displayed for time of day, and another conditional appears. Other conditional statements are available. Refer to Table 6-1 Vector Commands for a full explanation of the ‘‘go to’’ conditions.

7 In this next conditional, enter the beginning and ending day and time parameters or use the default days and times displayed to fully establish the condition. For this example, leave the ‘‘all’’ default unchanged by moving to the next conditional with the down arrow. Type in ‘‘18’’ over the hours in the first time conditional leaving the minutes unchanged by using the down arrow to move to the next conditional. Again, leave the ‘‘all’’ unchanged and move to the next conditional. Type in ‘‘08’’

over the hours in the second time conditional and leave the minutes unchanged by using the down arrow to move to the next step. After completing this step, the following screen appears with the cursor on the next step.

8 You have just created a command that directs a caller to another step (Step 14 will contain an announcement number and disconnect) during the hours of 6:00 p.m. to 8:00 a.m. This command could be used for a vector that has 1 shift of agents 7 days a week. Follow the same procedure for the second step, but enter ‘‘12’’ as the go to step number and change the times to ‘‘12:30 to 13:30’’. You have now just created a command allowing all agents to take a lunch break from 12:30 to 1:30. This command is useful when there is such a high volume of calls that to stagger lunch breaks creates too much agent loss for the vector to function effectively. Therefore, we have simply instructed callers (through Step 12) to call back after lunch.

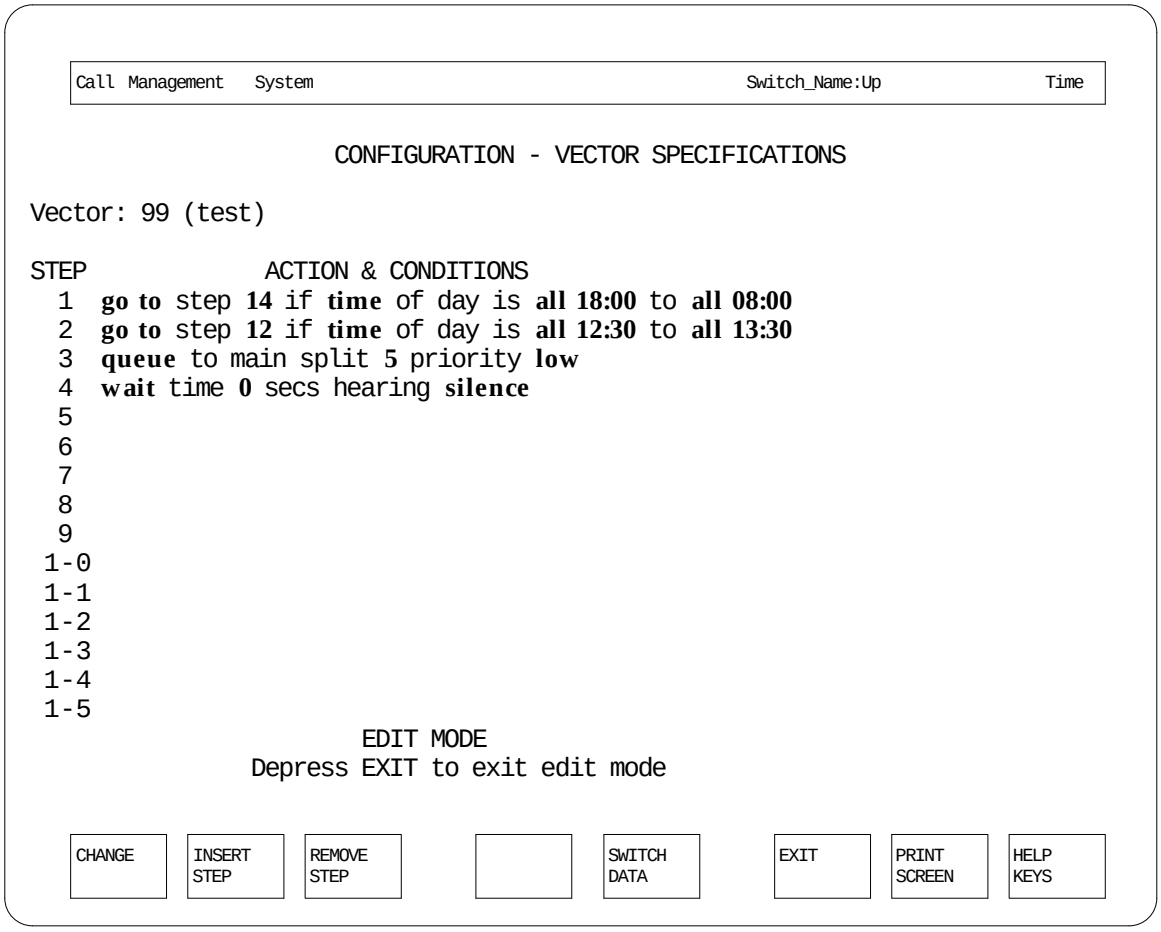
9 Now create Step 3. Enter the letter ‘‘q’’ as the abbreviation for the command. The following screen appears:



10 The ‘‘queue to main split’’ appears with the default value for priority as ‘‘low’’. In the first blank, enter the vector’s main split number. For this example, enter ‘‘5’’.

11 Using the down arrow key, move to the next highlighted field. Leave the default value ‘‘low’’ unchanged by pressing the down arrow key again to move to the next step. You have now created a command that directs the caller to the vector’s main split (assuming the call passed the first two time checks in Steps 1 and 2).

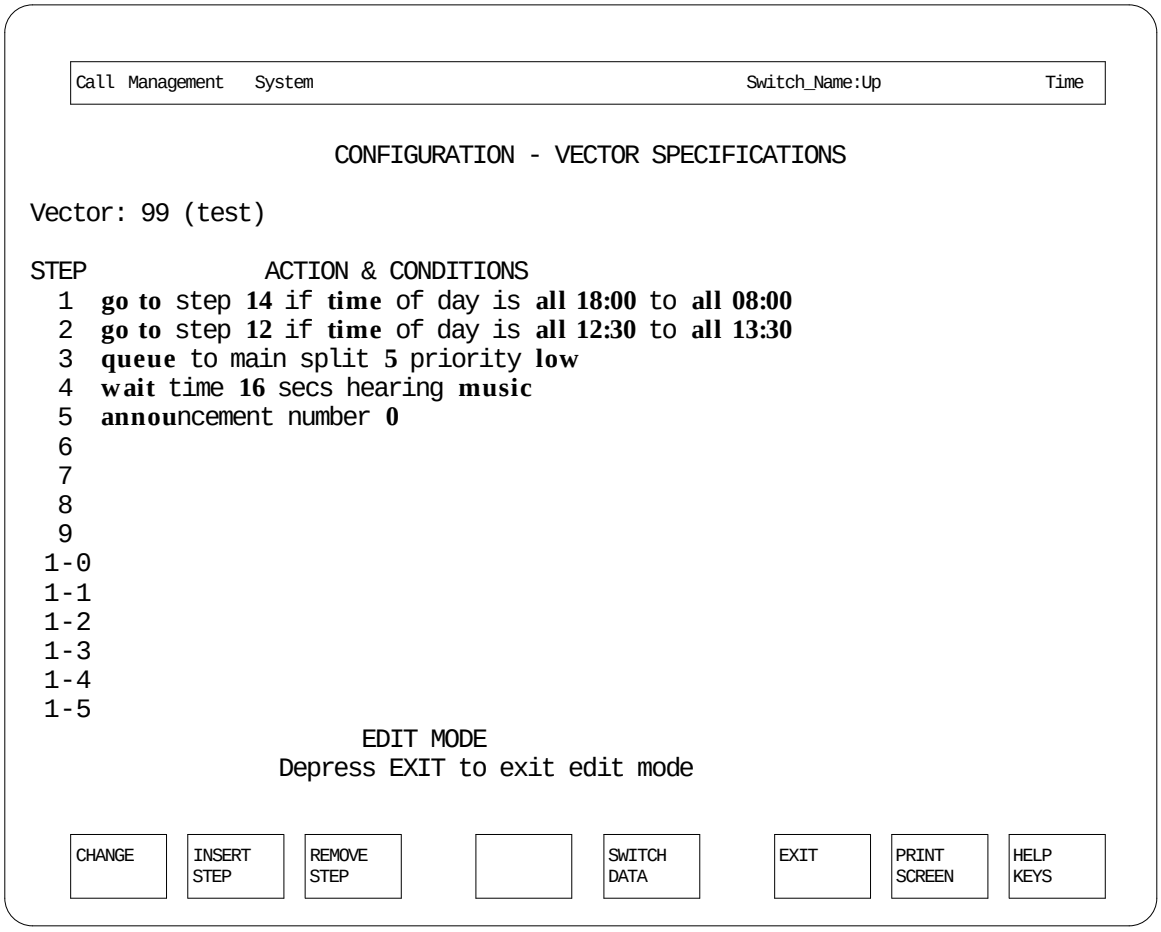
12 You are now ready for the fourth step. Enter ‘‘w’’ as the abbreviation for the command. The following screen appears.



13 Enter a specific even number of seconds in the first blank. For this example, enter ‘‘16’’.

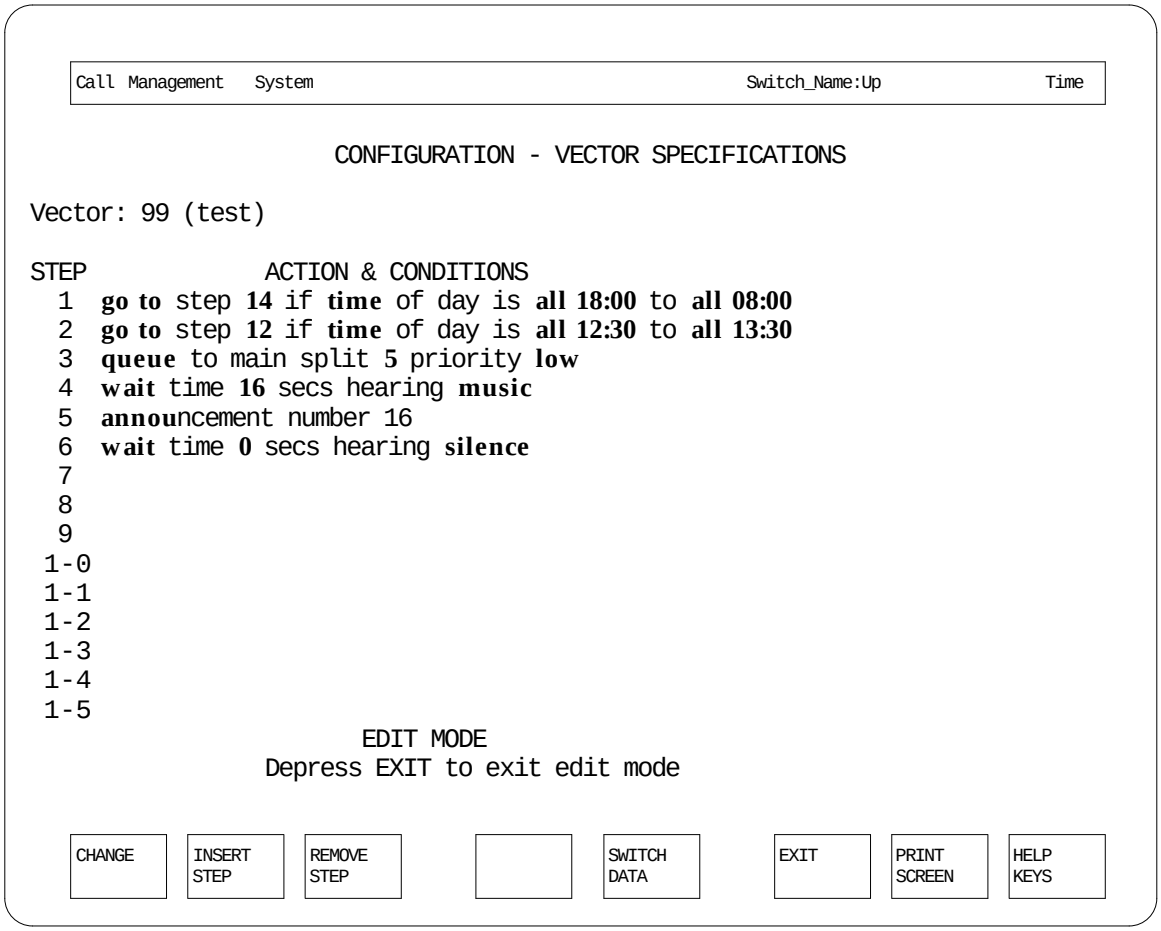
14 In the second blank, enter the abbreviation ‘‘m’’ for music. The caller will now hear music for 16 seconds while waiting for an available agent. If the call is not answered or abandoned within 16 seconds, the call passes to the next step.

15 Move the cursor to Step 5, enter the abbreviation of the command you desire to create. For this example, enter ‘‘a’’. The following screen appears.



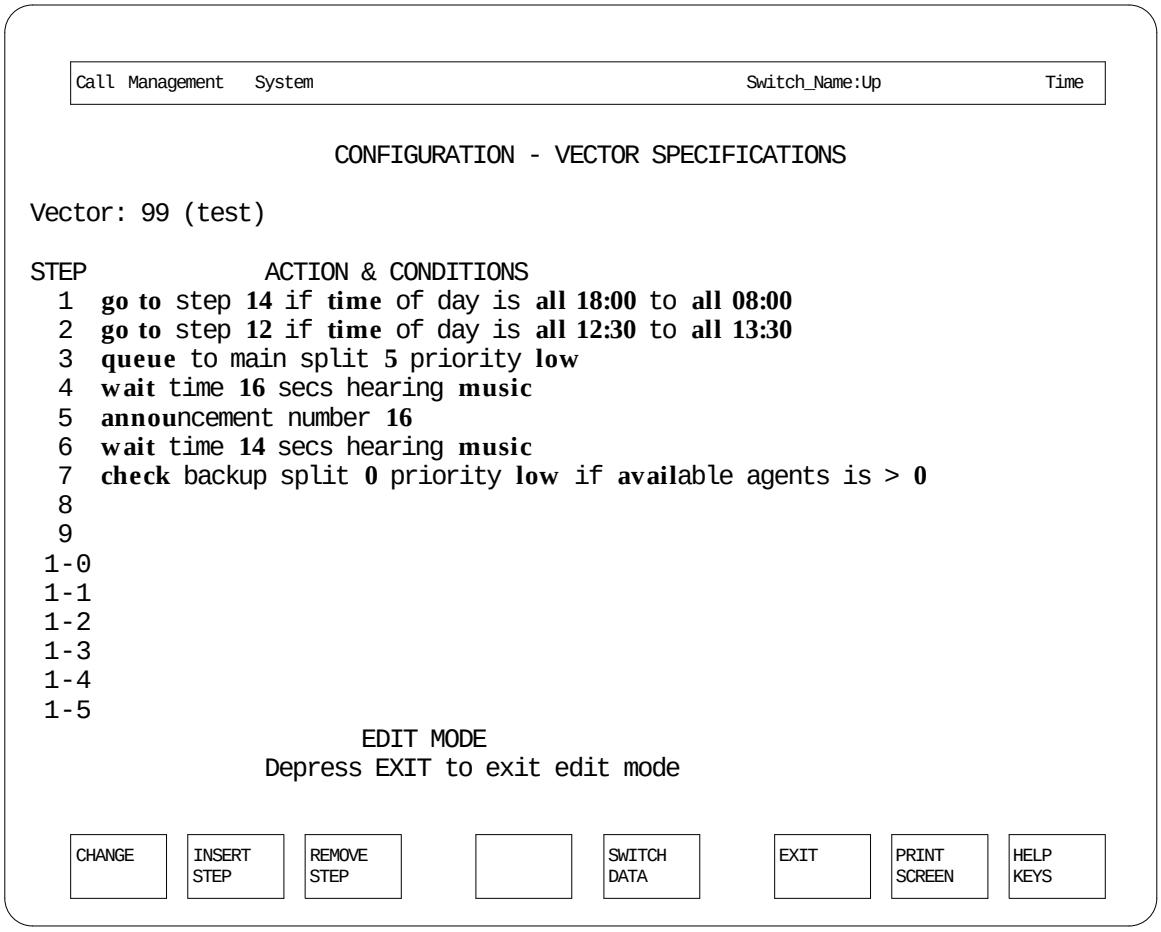
16 Enter the announcement number. For this example, enter ‘‘16’’. The caller will now hear a specific announcement and then (if not answered or abandoned) move on to the next step.

17 Move the cursor to the next step and enter ‘‘w’’. The following screen appears.



18 This command is like Step 4. But for this example, enter ‘‘14’’ as the seconds and enter ‘‘m’’ indicating music. The caller is now directed to hear music for a specific number of seconds while the call is still waiting for an available agent.

19 Move to Step 7 and enter the abbreviation ‘‘c’’. The following screen appears:



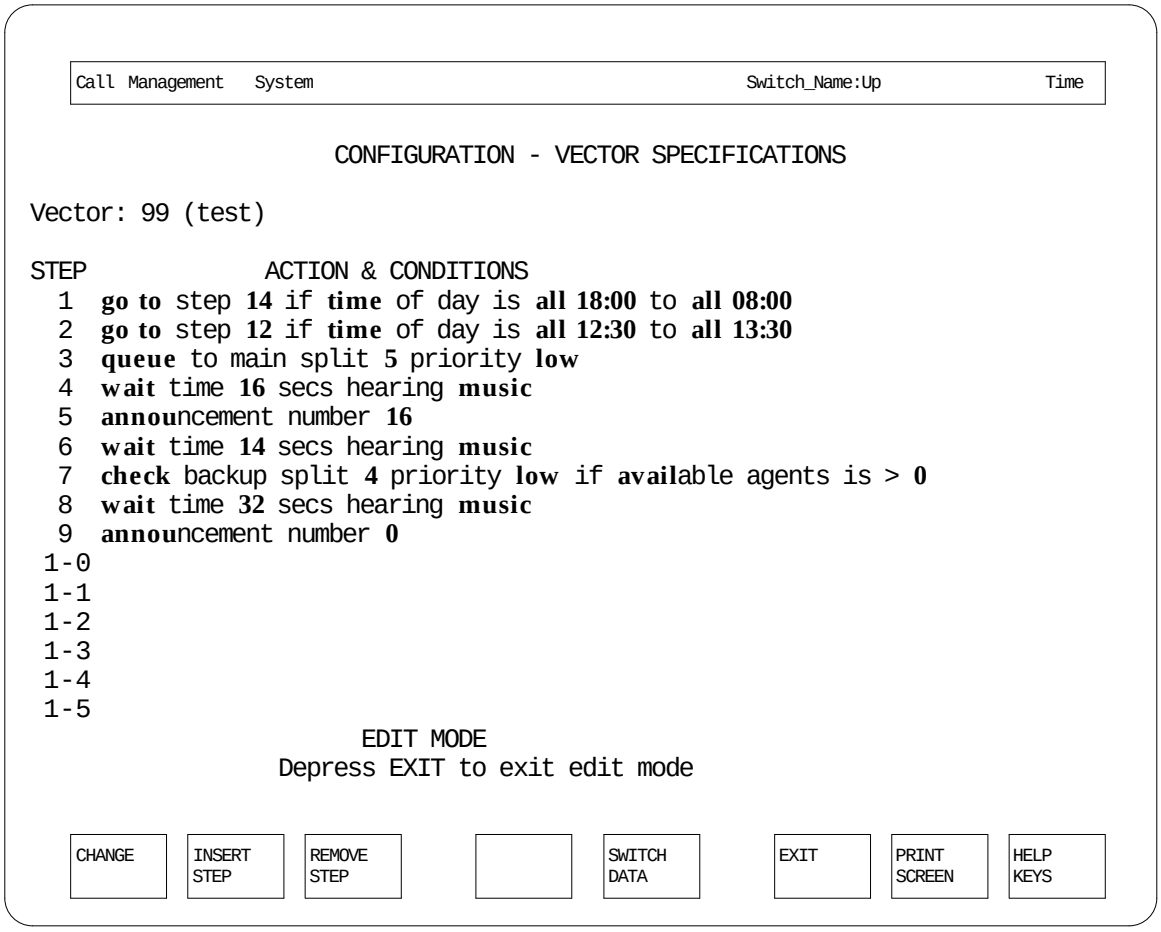
20 For this example, enter the vector’s backup split number ‘‘4’’.

21 Using the down arrow, move to the next step, leaving the conditional defaults unchanged. You have now directed the call to not only queue to the main split, but the call will also attempt to queue to the vector’s assigned backup split seeking an available agent. However, the call will only queue to the backup split if there are available agents.

22 Step 8 will be like Steps 4 and 6. Enter the abbreviation ‘‘w’’ for this step.

23 Enter the wait time as ‘‘32’’ seconds and enter ‘‘m’’ to hear music. The caller (if not answered or abandoned) again hears music.

24 Move to Step 9 and enter ‘‘a’’. This step will be like Step 5. The following screen now appears:



25 Enter ‘‘19’’ as the announcement number for this step and move to the next step. The caller agains hears an announcement, and the call is passed to the next step.

26 For Step 10, enter ‘‘w’’ again like Steps 4, 6, and 8. Enter ‘‘998’’ as the wait time seconds and ‘‘m’’ for music. The caller is back to hearing music after the announcement while the call is queued to the main split and attempting to queue to the backup split. This will be the last step for the caller in this vector. The call will remain in this step hearing music until the call is either answered or abandoned.

27 Move to Step 11 and enter ‘‘s’’ for stop.

28 Move to Step 12 and enter "d" as the abbreviation for this command. The following screen appears:

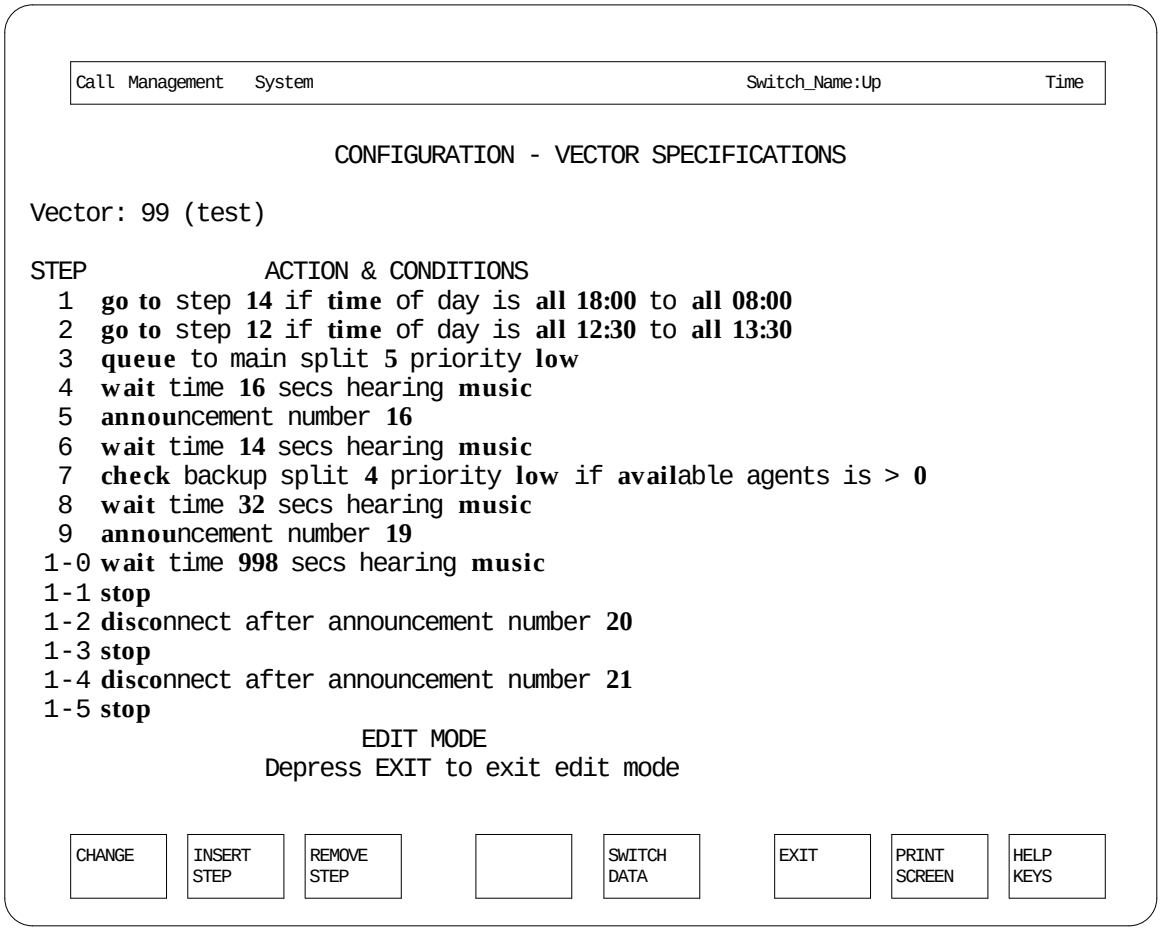
```
Call Management   System                                  Switch_Name:Up              Time

                        CONFIGURATION - VECTOR SPECIFICATIONS

Vector: 99 (test)

STEP              ACTION & CONDITIONS
  1  go to step 14 if time of day is all 18:00 to all 08:00
  2  go to step 12 if time of day is all 12:30 to all 13:30
  3  queue to main split 5 priority low
  4  wait time 16 secs hearing music
  5  announcement number 16
  6  wait time 14 secs hearing music
  7  check backup split 4 priority low if available agents is > 0
  8  wait time 32 secs hearing music
  9  announcement number 19
 1-0 wait time 998 secs hearing music
 1-1 stop
 1-2 disconnect after announcement number none
 1-3
 1-4
 1-5
                          EDIT MODE
                    Depress EXIT to exit edit mode

  CHANGE   INSERT STEP   REMOVE STEP          SWITCH DATA   EXIT   PRINT SCREEN   HELP KEYS
```

29 For this example, enter in "20" as the announcement number. Note that this step is reached from Step 2. If the time of day is between 12:30 p.m. and 1:30 p.m. (lunch break), the caller receives announcement number 20 before being disconnected.

30 Move to Step 13 and enter "s" as the abbreviation for the command. This ensures that the call cannot proceed to the next step.

31 Move to Step 14 and enter "d" for another disconnect announcement. Enter "21" as the announcement number. Note that this step is reached from Step 1. If the time of day is between 6:00 p.m. and 8:00 a.m., the caller receives announcement number 21 before being disconnected.

32 Move to Step 15 and enter "s" for the stop command. This will be the final step for this vector. The vector is complete, as shown in the following screen:

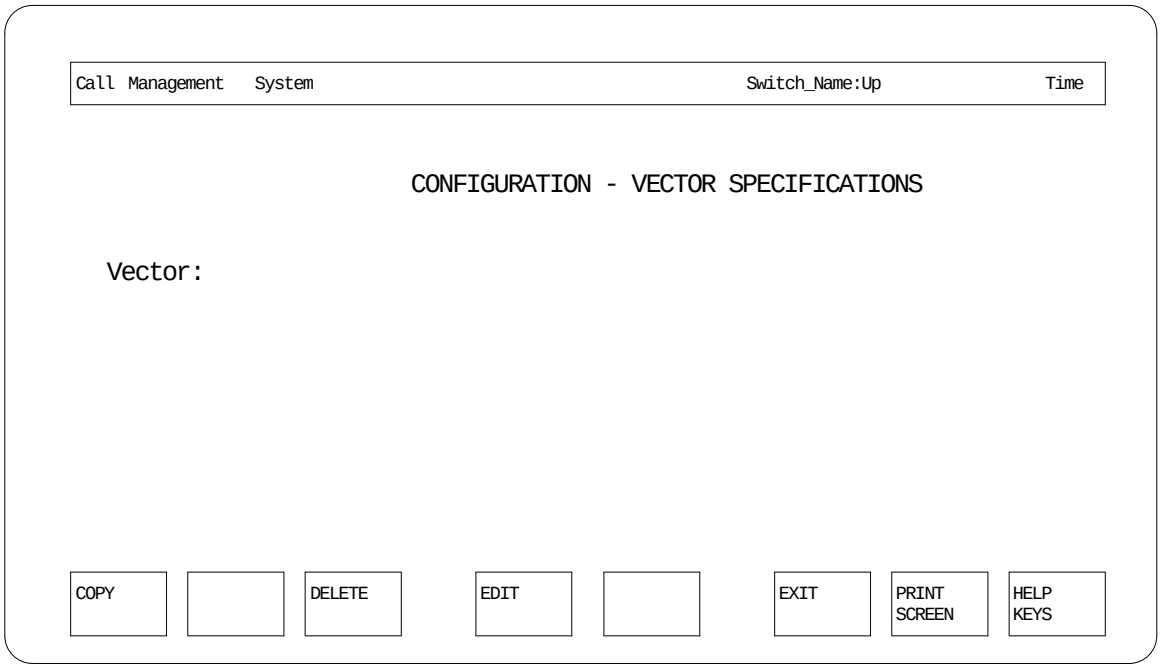


33 Review the steps of the vector displayed on the screen. Press the CHANGE screen-labeled key. A message appears on the screen: "Do you want to change <n>? (y/n) " where <n> is the number of the vector. To create the vector enter "y".

Changing (Editing) a Vector

1 On the CONFIGURATION menu, select the Specifications option under Vector and press RETURN.

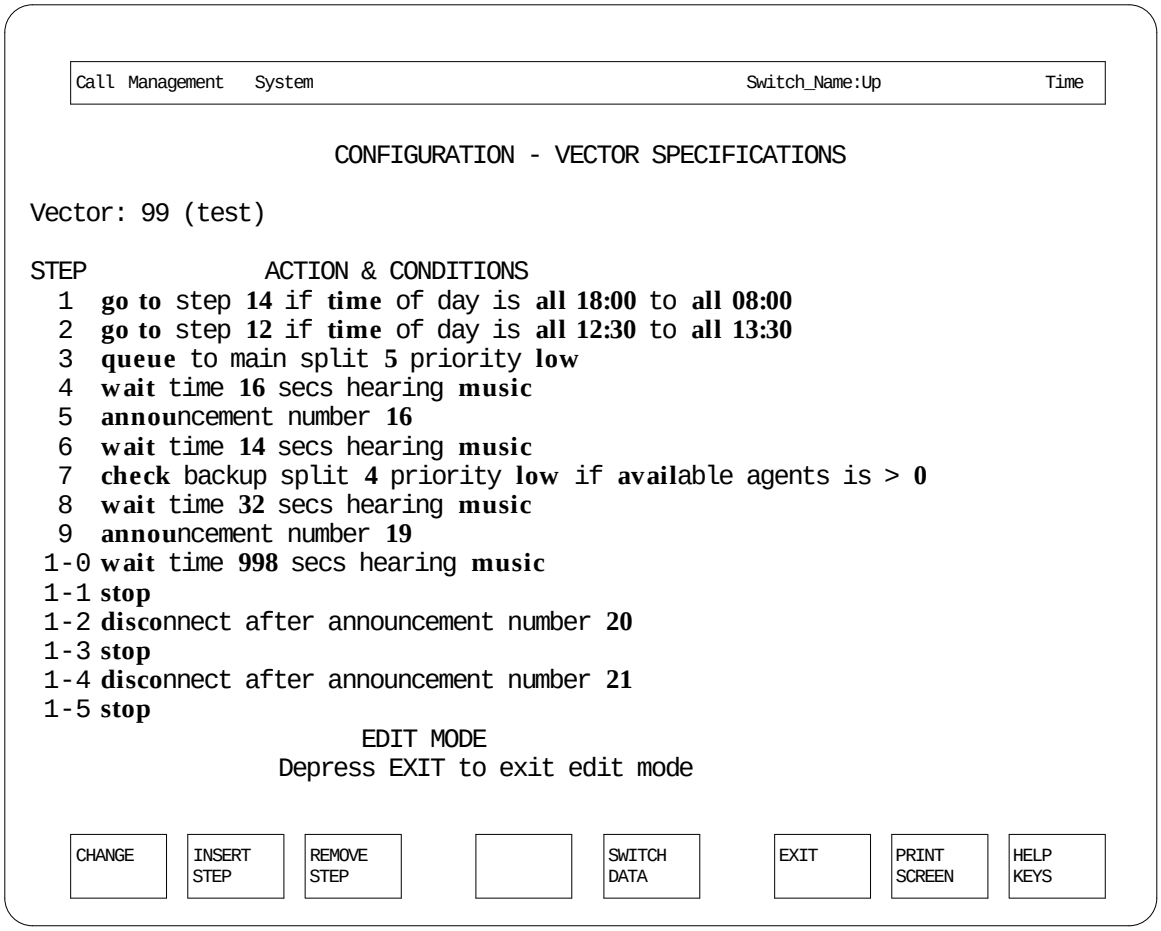
[A blank Vector Specifications screen appears.]



2 In the Vector: field, enter the number (1 through 128) of the vector you want to change.

3 Press EDIT.

[The data for the vector appears on the screen. (See the following screen.) You should print a copy of this vector for reference before making any changes.]



4 Using the up and down arrow keys, move among highlighted fields in the vector steps. Make any changes to those fields that you desire.

5 To completely remove a step, place the cursor in the line to be deleted and press the REMOVE STEP. The later steps will all move up one.

6 To add a step, place the cursor in the step at which you want the addition and press INSERT STEP. For example, if you want to add a command in the third step, place the cursor in Step 3 and press INSERT STEP. The current Step 3 will move to Step 4, 4 to 5, etc., and 3 will appear as a blank, ready for your addition. The "INSERT STEP" will NOT function if the vector already contains 15 steps as illustrated by this example!

7 To see the original vector specification (before any changes), press SWITCH DATA. This causes the vector currently being used by the switch to be displayed. To return to the version being edited, press EDIT.

8 In the EDIT mode, press the [EXIT] screen-labeled key to return to SWITCH DATA mode. If you don't want to save your changes, you can exit without implementing the changes. In SWITCH DATA mode, the [EXIT] SLK returns you to the Configuration Menu.

9 To print the contents of the screen on your system printer, press [PRINT SCREEN].

10 After making all your changes, implement the vector's changes by pressing [CHANGE]. You will be prompted with the message "`Do you want to change <n> ? (y/n)` ", where `<n>` is the number of a vector. If you do, enter "y". The vector will be changed at the switch. Calls currently under control of this vector will be processed by the old specification.

NOTE

Until all calls from the "old" vector have completed vector processing (e.g., answered abandoned, disconnected, given busy, routed elsewhere), you cannot make *another* change in the same vector.

Copying a Vector

1 On the `CONFIGURATION` menu, select the `Vector Specification` option and press [RETURN].

[The blank Vector Specification screen appears.]

2 Type the number of the vector containing the specifications you wish to copy in the `Vector:` field.

3 This step is optional. *If you want to see the vector being copied,* press [RETURN] .

4 Press [COPY].

[The prompt appears: "`Enter vector you want to copy vector <n> to:` " where *n* is the number of the originating vector.]

5 Type the number of the *new* vector (the copy) in the field after the prompt.

6 Press RETURN.

[Another prompt appears: "Do you want to copy <n> to <x>? (y/n) ", where <n> is the originating vector and <x> will be the copied vector.}

7 If you do, type "y" immediately after the prompt and press RETURN .

[There are now two vectors on the switch with the same specifications, and the newly copied vector appears on the screen.]

Deleting a Vector

1 On the CONFIGURATION menu, select the Vector Specification option and press RETURN.

The [Vector Specifications screen appears.]

2 Type the number of the vector to be deleted in the Vector: field.

3 Press RETURN to display the vector before deleting.

4 Verify that this is the vector you desire to delete, then press DELETE.

[The message "Do you really want to remove this vector? (y/n)" appears on the screen.]

5 Enter *y*.

[The vector will be removed from the switch and the screen will be blanked out.]

Split References

Purpose	Display queue steps in vectors for a split.
Access	None required
Dependencies	None

NOTE This screen is not available if you have a Generic 3i switch.

The Vector Split References screen lists vectors that queue calls to a specified split, as either a main or backup split. You can use this screen as a quick reference to determine the types of calls a split is handling.

Screen Description

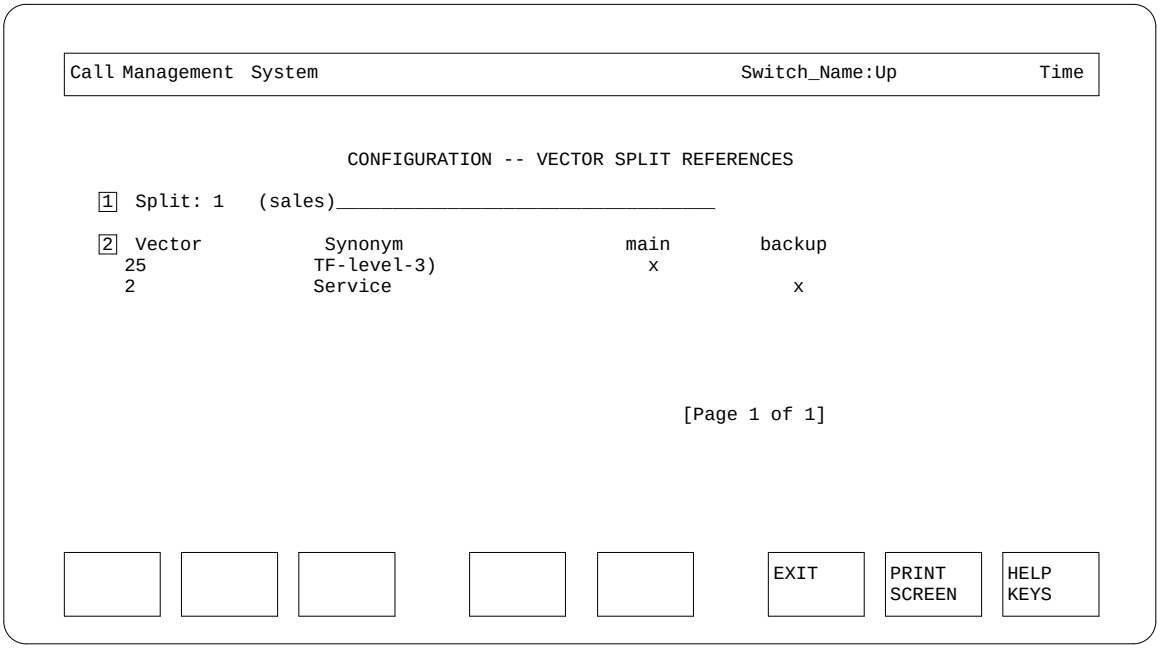


Figure 6-5 The Vector Split References Screen

Use the screen-labeled keys (SLKs) following the same procedures as used for any CMS Configuration process. If necessary, refer to the *3B Call Management System Administration* (585-215-504) document for instructions.

Definitions of Fields

Field 1 Split

The number or synonym of the split to display. A split number consists of 1 or 2 numeric characters ranging from 1 to 60. A split synonym consists of up to 20 alphanumeric characters, spaces are used and counted.

Field 2 Vector Synonym **(Read Only Field)**

The number and synonyms of the vectors that reference the split in ‘‘queue to main split’’ and ‘‘check backup split’’ steps.

Viewing Split References

1 On the `CONFIGURATION` menu, select the `Vector Split References` option and press RETURN.

[The blank Split References screen appears.]

2 Type the number or synonym of the split to view in the `Split:` field.

3 Press RETURN.

[The vectors that reference that split appear on the screen.]

4 To continue viewing a split’s references, return to Step 2.

General Information

You use the Exceptions subsystem to:

Define conditions for vector exceptions

Generate reports on vector exceptions.

You define conditions for vector exception events using the Vectors Administration screen, which is listed on the Exceptions Menu (Figure 7-1). Depending on the event, you may define a condition that will trigger an exception as a number of occurrences (‘‘Threshold’’) or a number of occurrences in which a specified time limit (‘‘Time’’) has been reached or exceeded.

NOTE If you enter a ‘‘Time’’ condition for an event, you must also enter a ‘‘Threshold’’ condition for the same event.

You order exception reports for vectors by selecting ‘‘Vectors’’ under Reports on the Exceptions screen menu (see Figure 7-1). However, you can also be notified of exceptions while viewing CMS real-time reports because the real-time report screens automatically display messages when exceptions occur.

NOTE Exception messages will appear on your real-time reports only for the vectors for which you have read access permissions.

The Exceptions Menu for CMS With Call Vectoring

You select, from the Exceptions Menu (Figure 7-1), either the ‘‘Vectors’’ under Reports to order exceptions reports or the ‘‘Vectors’’ under Administration to establish exception conditions for a vector.

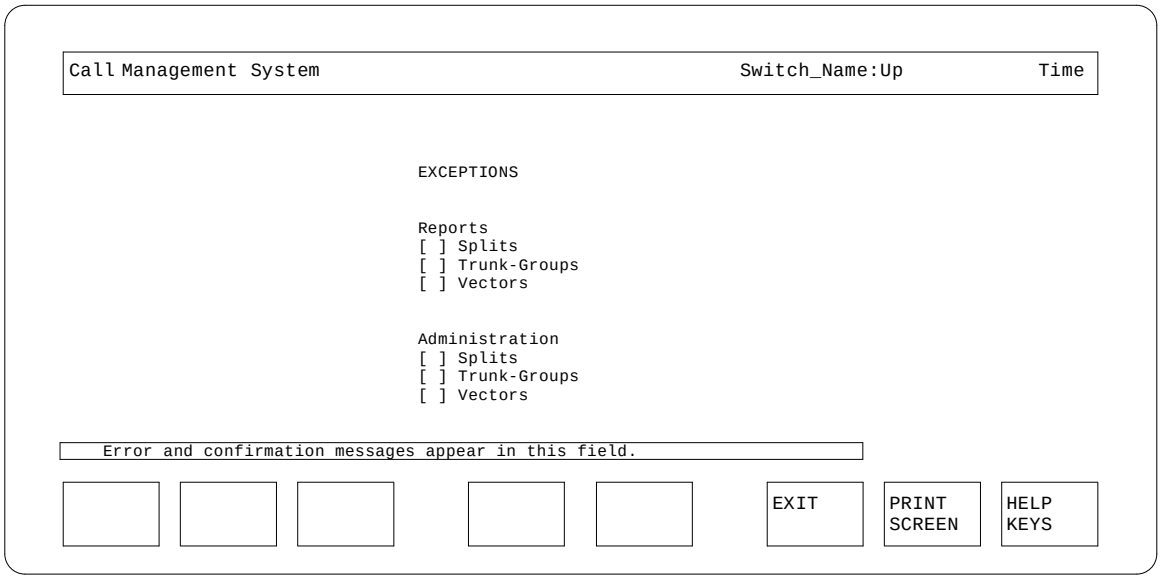


Figure 7-1 The Exceptions Menu

Exception Reports (Vectors)

Purpose	Generate a printed log of exception conditions.
Access	Requires read access for vector.
Dependencies	Reports only those exceptions established through the Vectoring Exception Administration process. Exception historical data is retained as specified on the Archive Parameters screen, with a maximum retention of 7 days of data.

You use the Exception Reports (Vectors) screen to order exception reports on vectors. You may order separate reports for each vector or one report for all vectors. You can also order separate reports for each exception event or one report for all exception events. However, the only events that will show data in a report will be those for which you have set conditions on the Exceptions Administration (Vectors) screen.

Screen Description

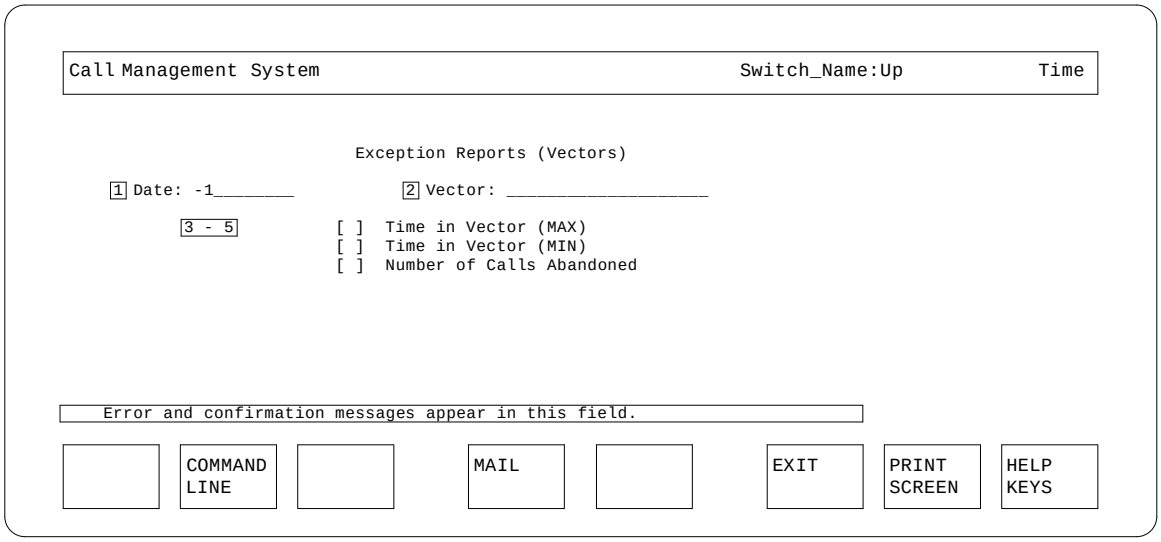


Figure 7-2 The Exception Reports (Vectors) Screen

Use the screen-labeled keys (SLKs) following the same procedures as used for any CMS exception reporting process. If necessary, refer to the *3B Call Management System Administration* (585-215-504) document for instructions.

Definition of Fields

Field [1] Date

The date for which you want the report. The field requires the date in the format MM/ DD/ YY or as a relative day such as 0, -1, -2, etc.

Default: -1

Field [2] Vector

The synonym or number of the vector for which you want to generate an exception report. A vector number consists of 1 to 3 numeric characters ranging from 1 to 128. A vector synonym consists of 20 or fewer alphanumeric characters. Blanks are allowed and counted.

Fields [3 through 5] Exceptions

Used to place an "X" in the bracket to include that exception event in the report.

Requesting a Vectoring Exception Report

1 On the `EXCEPTIONS` menu, select the `Reports [] Vectors` option and press [RETURN].

[The `Exception Reports (Vectors)` screen appears.]

2 Type the date for which you want the report in the `Date:` field. This field requires an 8-character input, so use spaces if typing in fewer characters.

The maximum length of exception data retention is 7 days.

3 Type the number or synonym of the vector to report in the `Vector:` field.

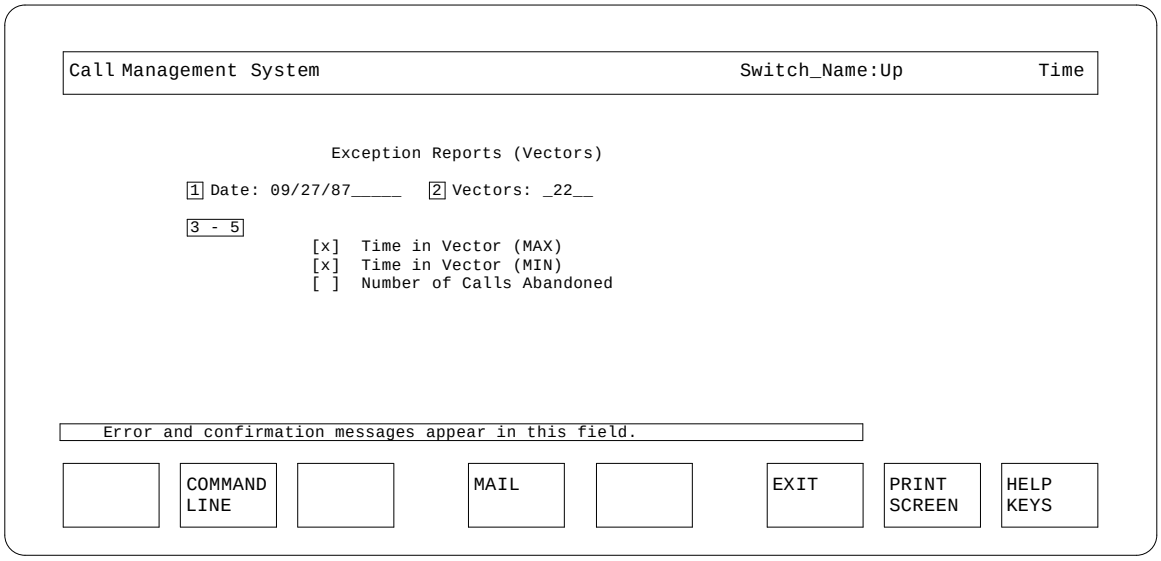
You can enter only one vector per request.

Leave this field blank if you want a report for all vectors.

4 Place an *x* within the brackets for the exception types you want reported.

Select as many exception types as desired. See the following screen.

Leave all brackets blank if you want to see all exception types.



5 Press RETURN to generate the report immediately, or press COMMAND LINE to schedule the report for a later time.

[The Report Destination screen appears.]

6 Follow the directions on the Report Destination screen to finish ordering the report, and press RETURN again.

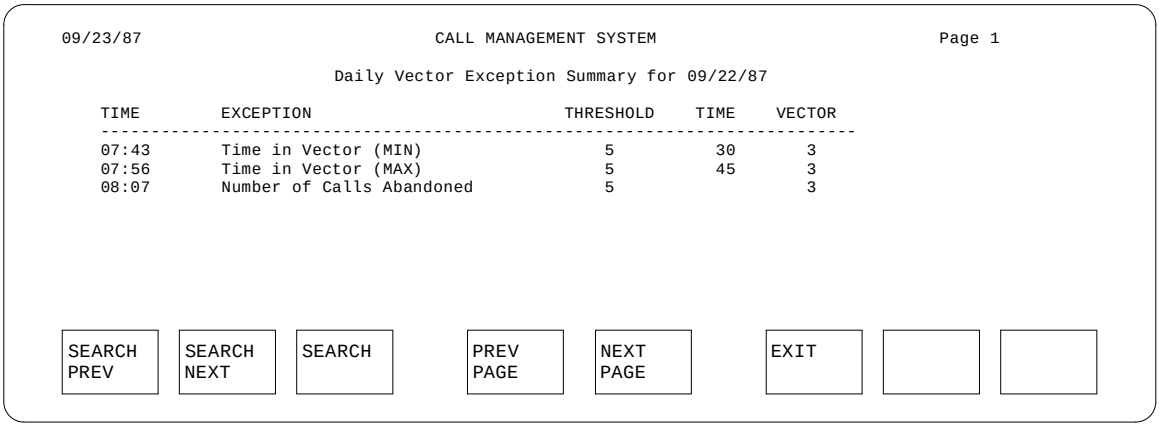
[If you pressed RETURN in Step 5, the report is generated immediately. If you pressed COMMAND LINE in Step 5, the Program Editor in the Schedule subsystem appears so you can schedule the report.]

If necessary, refer to the *3B Call Management System Administration* (585-215-504) document for instructions.

7 To continue ordering exception reports, return to Step 2.

Sample Vector Exception Report Description

The Daily Vector Exception Summary displays vector exceptions, with the time they occurred, for the date you specify.



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Daily Vector Exception Summary for 09/22/87

TIME	EXCEPTION	THRESHOLD	TIME	VECTOR
07:43	Time in Vector (MIN)	5	30	3
07:56	Time in Vector (MAX)	5	45	3
08:07	Number of Calls Abandoned	5		3

Table 7-1 Report Output Explanation

FIELD	EXPLANATION
Time	Time exception occurred
Exception	Type of exception
Threshold	Number of event occurrences that will trigger an exception message
Time	Time that an event must last before it is considered an exception event occurrence
Vector	Number of the vector containing the exception

Exception Administration (Vectors)

Purpose	Display and specify vectoring exception conditions.
Access	Requires write access for Exceptions Subsystem and vector.

You use the Exception Administration (Vectors) screen to define conditions for vector exception events. On the basis of conditions you define, CMS will record exceptions and report them to you either as they occur (with a message displayed on the Real-Time Reports) or when you order a vector exception report.

Screen Description

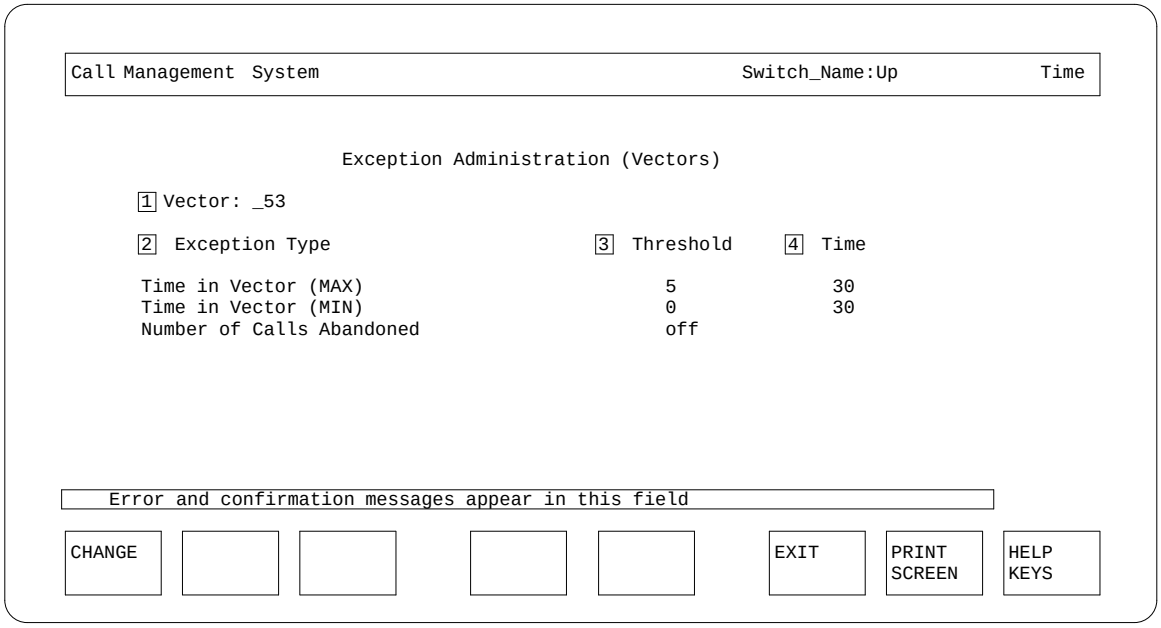


Figure 7-3 The Vector Exception Administration Screen

Use the screen-labeled keys (SLKs) following the same procedures as used for any CMS exception administration process. If necessary, refer to the *3B Call Management System Administration* (585-215-504) document for instructions.

Definitions of Fields

Field 1 Vector

The number or synonym of the vector for which you are administering exception conditions. A vector number consists of 1 to 3 numeric characters ranging from 1 to 128. A vector synonym consists of 20 or fewer alphanumeric characters. Blanks are allowed and counted.

Field 2 Exception Type **(Read Only Field)**

The description of the exception event.

Field 3 Threshold

The number of occurrences that will trigger an exception. Enter a numeric value from 0 to 99.

Default: off

Field 4 Time

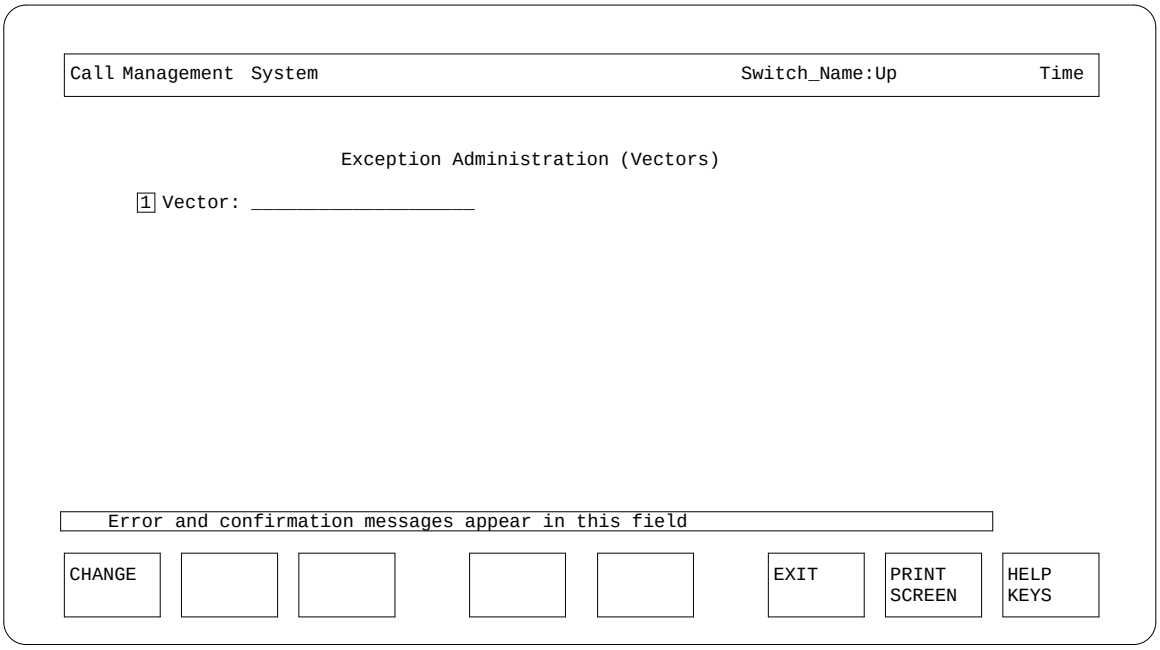
The length of time, in seconds, that will trigger an exception. Enter a numeric value from 0 to 32535.

Default: off

Viewing Vector Exception Conditions

1 On the EXCEPTIONS menu, select the Administration [] Vectors option and press RETURN.

[A blank Exception screen appears. See the following screen.]



2 In the Vector: field, type the number or synonym of the vector to view its exception conditions.

3 Press RETURN.

[The Exceptions screen displays the vector's exception conditions.]

Creating or Changing Exception Conditions

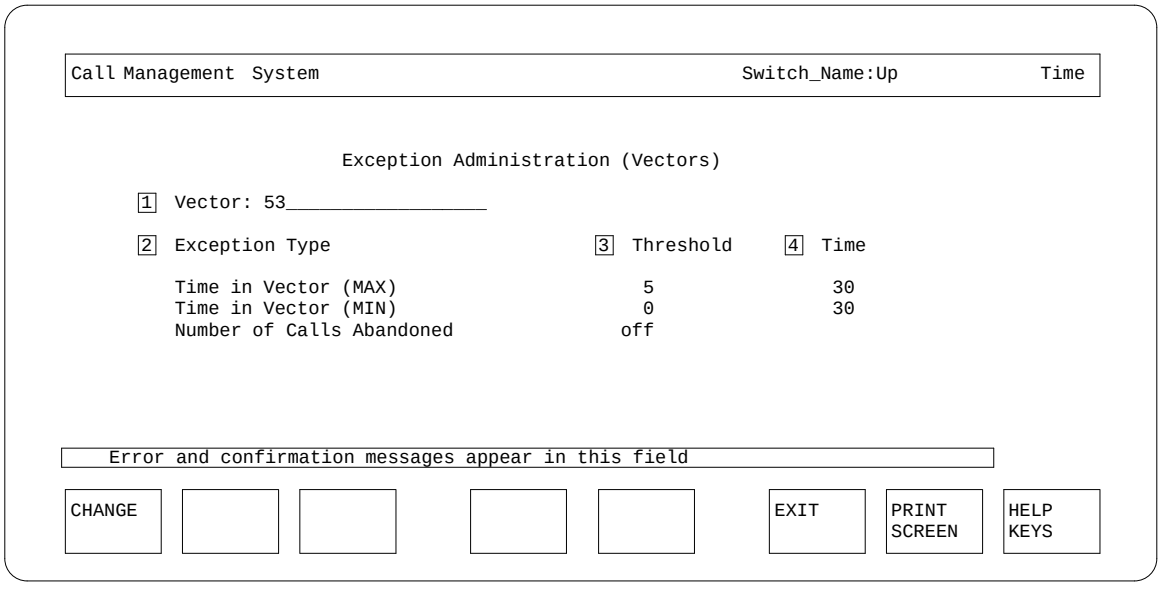
1 On the EXCEPTIONS menu, select the Administration [] Vectors option in the Exception menu, and press RETURN.

[A blank Exception screen appears displaying only the Vector: field.]

2 In the Vector: field, type the number or synonym of the vector.

3 Press RETURN.

[The full Exceptions screen appears with the current exception settings for the vector. See the following screen.]



4 In the Threshold column next to the exception type, type the number which establishes the parameters of that exception. This field requires a 3-character input. Use blanks when typing in fewer than three numeric characters. This number is the number of occurrences of the event or the number of times the Time field value must be exceeded for the exception to take place.

5 In the Time column, type the time limit of that exception. This field requires a 5-character input, so use blanks when typing fewer characters.

This is only for time-oriented exceptions. For "Number of Calls Abandoned" exceptions, leave the `Time` column blank.

6 Press CHANGE.

[The exception conditions will be turned on.]

7 To continue using the exception administration screen, return to Step 2.

NOTES

General Information

You use the Administration subsystem to assign vector access permissions to CMS users. You assign read and/ or write permissions to users for each vector. Read permission means the user can search for and get vector and VDN data within a subsystem (read standard vector reports, for instance). Write permission means that the user can enter vector- and VDN-related data and execute processes on vectors within a subsystem.

NOTE

Read or write permission for a VDN is established when the same permissions are established for the vector to which the VDN is assigned.

The Administration Menu for CMS With Call Vectoring

You assign vector access permissions using the Vector-Access screen, which you select from the Administration menu (Figure 8-1).

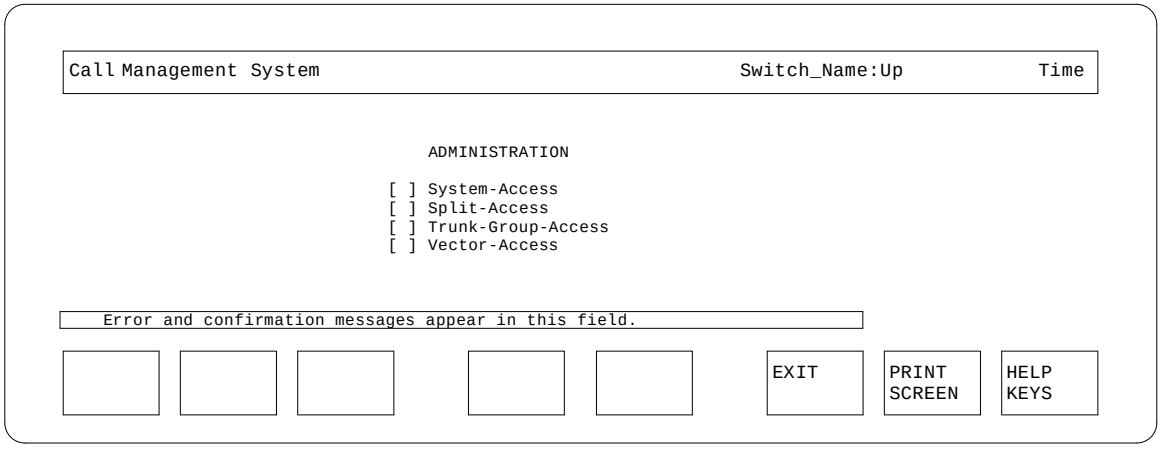


Figure 8-1 The Administration Menu

Vector Access

Purpose Establish permission for a user to view and administer data concerning vectors.
Access Requires write access for the Administration Subsystem.

Use the Vector Access screen to set up vector access permissions for a new user, to change vector access permissions, and to search for a vector within a user's set of permissions. To establish access for a new user, you must use the CHANGE screen-labeled key because all access permissions default to "y" for read and write.

A combination of a "y" in the write column for a vector and an "n" in the read column *is* possible. This allows a user to change vector specifications without the vector's data appearing on the user's reports.

Screen Description

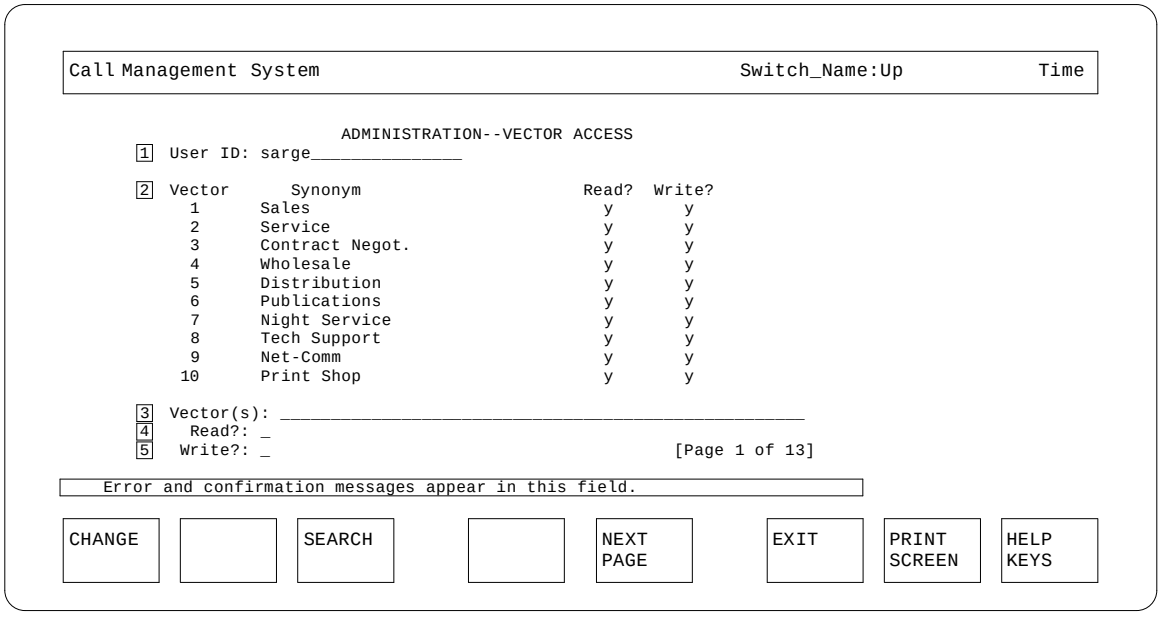


Figure 8-2 The Vector Access Screen

Use the screen-labeled keys (SLKs) following the same procedures as used for any CMS Administration process. If necessary, refer to the *3B Call Management System Administration* (585-215-504) manual for instructions.

Definitions of Fields

Field 1 User ID

The login ID of the user whose vector access you are administering.

Field 2 Vector Name Read? Write? **(Read Only Field)**

This field ONLY displays data. Actual changes are input in fields 3 through 5.

Field 3 Vector(s)

Contains a vector number to search for or vector number(s) with changing access permissions. Enter multiple vector numbers using commas, spaces, ranges separated by hyphens, or ''all.'' A vector number consists of 1 to 3 numeric characters ranging from 1 to 128.

Field 4 Read?

''Read'' means the user can obtain any data for this vector in a report. The value can be ''y'' for yes or ''n'' for no.

Default: ''y'' for all vectors.

Field 5 Write?

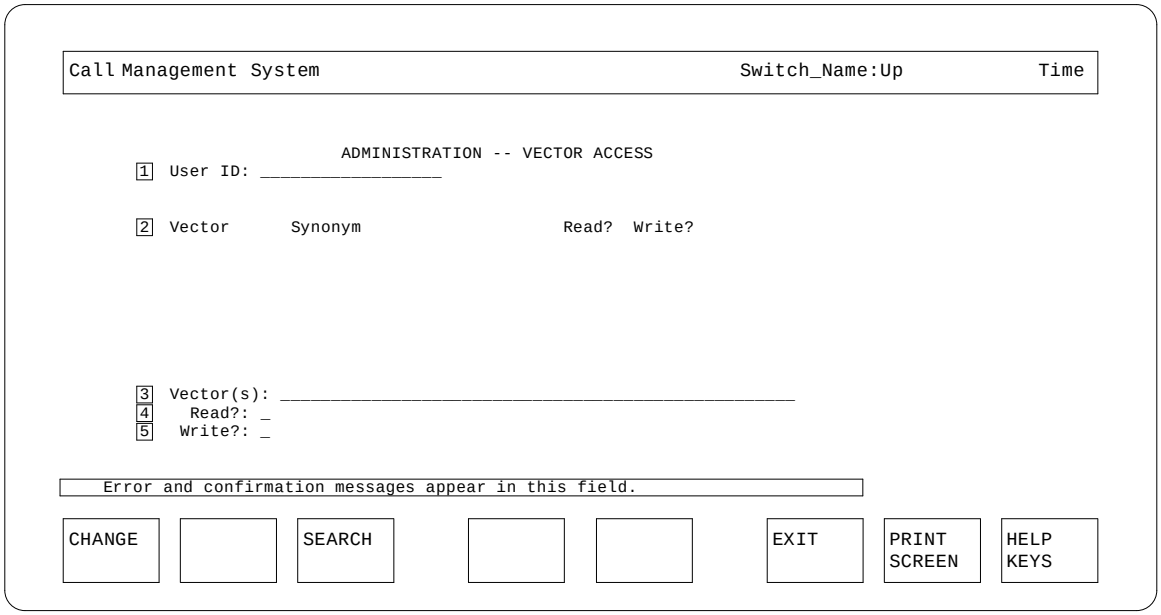
''Write'' means the user can make administrative changes for the vector. For example, these administrative changes might include changing VDN assignments for this vector, changing vector specifications, or setting exceptions for the vector. Value equals ''y'' for yes and ''n'' for no.

Default: ''y'' for all vectors.

Viewing Vector Access Permissions For a User

1 On the ADMINISTRATION menu, select the Vector-Access option and press RETURN.

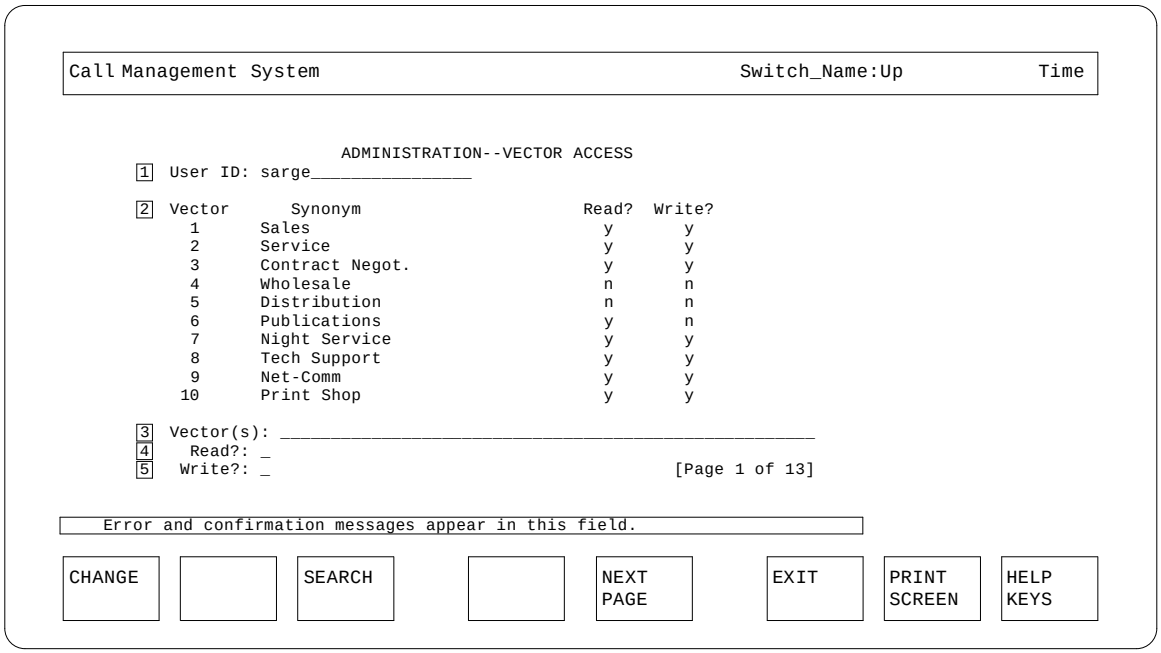
[A blank Vector Access screen appears as shown below.]



2 In the User ID: field, type a user ID to view the user's vector access permissions.

3 Press RETURN.

[The first page of the user's current vector access permissions appears on the screen. For a new user, all vector accesses default to ''y'' (yes). See the following screen.]



4 Use the NEXT PAGE and PREV PAGE SLKs to scroll through multiple pages of vectors.

5 To continue viewing other users' access permissions, return to Step 2.

Searching for a Specific Vector of a User

1 On the ADMINISTRATION menu, select the Vector-Access option and press RETURN.

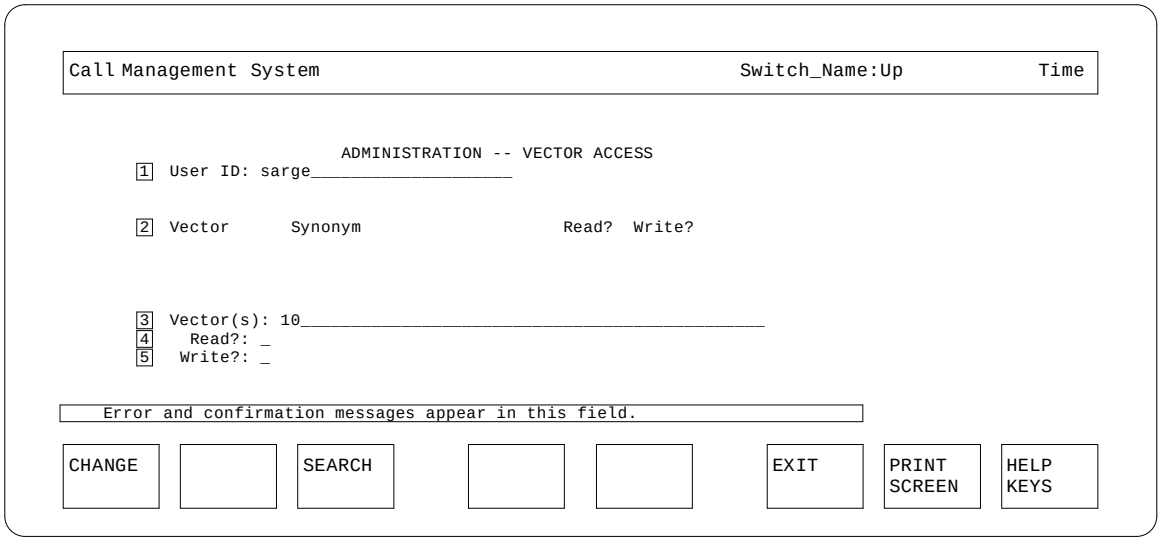
[A blank Vector Access screen appears.]

2 Type the user's ID in the User ID: field.

3 This step is optional. Press RETURN.

The first page of the user's current vector access permissions appears on the screen.

4 To display the permissions for a specific vector or vectors, enter the vector number(s) in the Vector(s): field. The entry may contain single vector numbers separated by spaces or commas, ranges separated by hyphens, or both individual numbers and ranges. See the following screen:



5 Press SEARCH.

[The page containing the information for the specified vector appears. (If searching for multiple vectors, the page containing the first vector appears.)]

6 To continue searching for a specific vector for the same user, return to Step 4. To continue searching for a specific vector for another user, return to Step 2.

Adding and Changing Vector Access Permissions

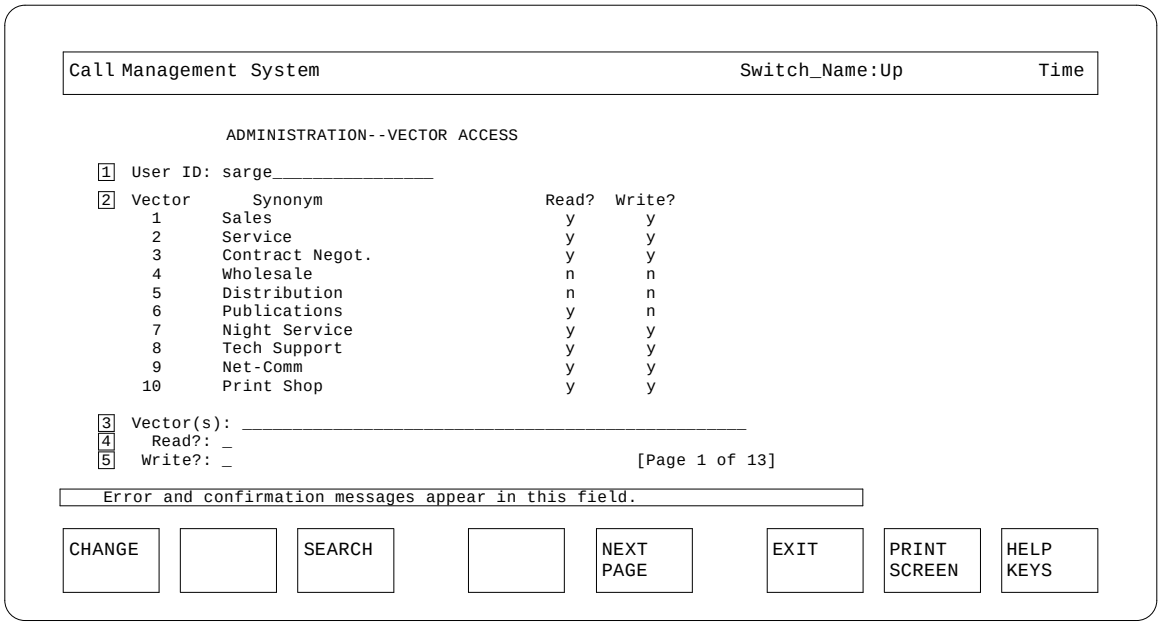
1 On the `ADMINISTRATION` menu, select the `Vector-Access` option and press RETURN.

[A blank Vector Access screen appears.]

2 In the `User ID:` field, type a user ID whose vector access permissions you want to change.

3 This and the following step are optional. If you already know the user's vector access permissions, you may go directly to Step 5. If you need to view the user's vector access permissions, press RETURN.

[The first page of the user's vector access permissions appears on the screen. For a new user, all vector accesses default to ''y'' (yes). See the following screen.]



4 Use the NEXT PAGE and PREV PAGE SLKs to scroll through multiple pages of vectors.

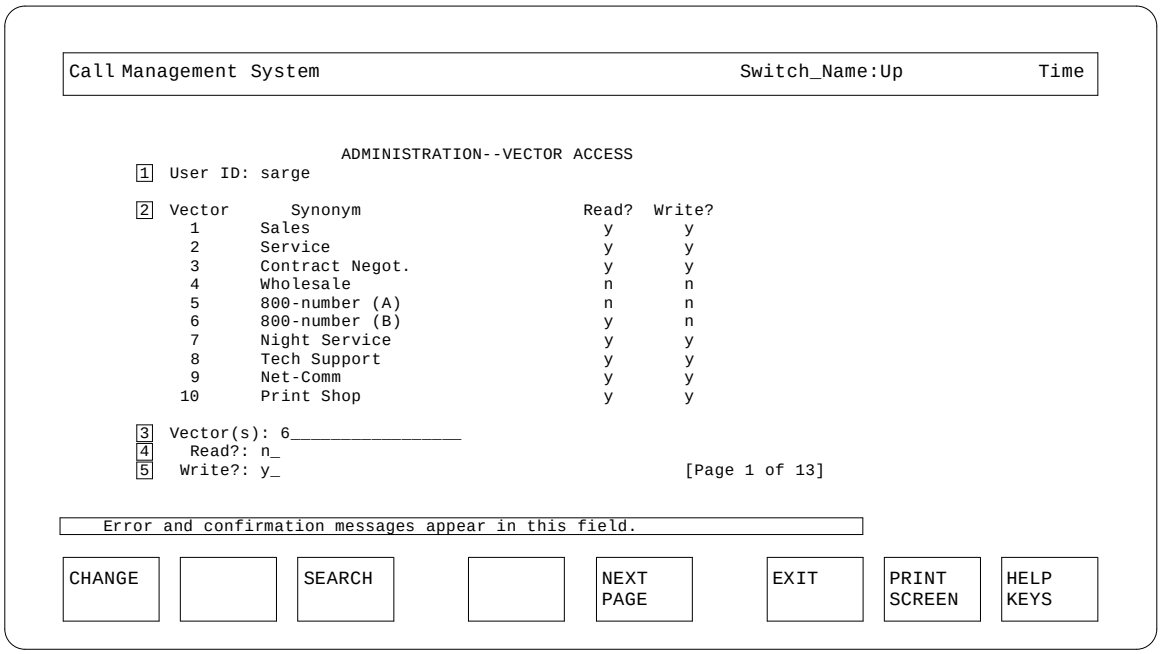
OR

Search for a specific vector's access permissions by following the search procedure.

5 In the `Vector(s):` field, type one or more vector numbers for which you want to change the user's access permissions. This entry may contain single vector numbers separated by spaces or commas, ranges separated by hyphens, or both individual numbers and ranges.

6 Move the cursor to the `Read?` field and type in either "y" or "n." To leave the Read access permission unchanged, leave this field blank and move the cursor to the next field.

7 Type in either "y" or "n" in the `Write?` field. To leave the Write access permission unchanged, leave the field blank and go to the next step. See the following screen:



8 Press CHANGE.

[All changes update the database.]

9 Repeat Steps 5 through 8 for as many vectors as you wish to administer separately.

10 To change another user's access permissions, return to Step 2.

NOTES

General Information

You use the Maintenance subsystem to complete the following tasks specific to VDNs and vectors:

Setting the length of time CMS stores data for VDNs and vectors

Checking the number of measured VDNs and vectors.

Maintenance Menu

You perform these tasks using the Archive Parameters and Session Status screens listed on the Maintenance Menu below:

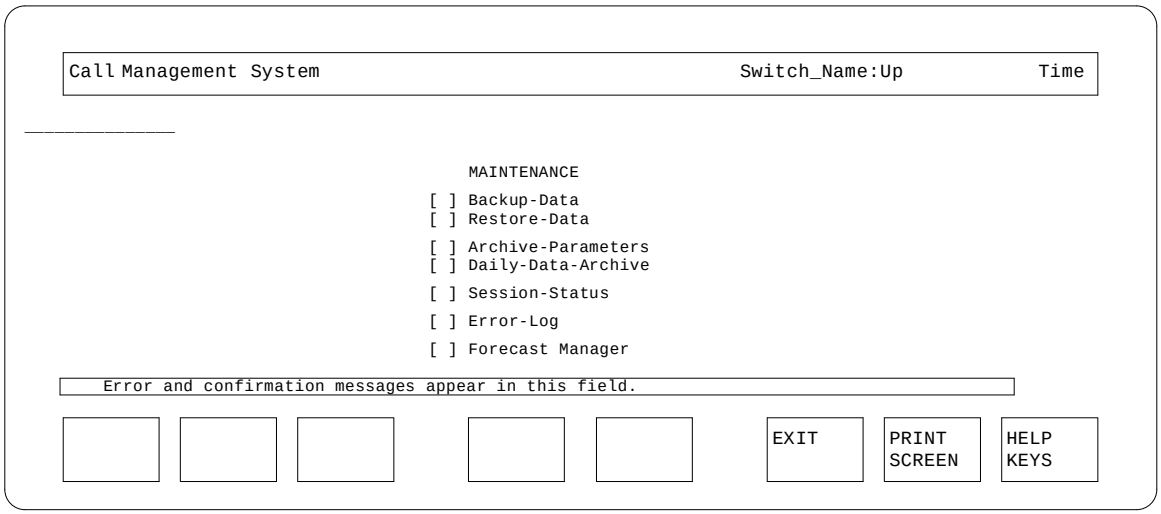
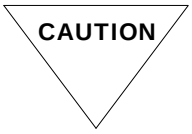


Figure 9-1 The Maintenance Menu

Archive Parameters

Purpose	Administer the archiving periods for historical vector and VDN data.
Dependencies	Daily Data Archive to write to the daily historical files each day.
Defaulted fields	All

The CMS disk can store up to 387 days' worth of daily data and up to 31 days' worth of half-hour data for VDNs and vectors.* These are the default **archive parameters**. You can use the Archive Parameters screen to change the length of time data is stored. For example, if you wanted to maintain some of your daily files only 45 days, you could change the default of 387 days to 45 with the Archive Parameters process.



If you want to reduce any default parameters, do so before your system exceeds the new parameters you want to set. Once the system has archived data exceeding those parameters, it will be difficult to release the used disk space back to the system.

* For information on the amount of disk space available with different 3B computers, see the **3B Call Management System Planning, Configuration, and Implementation Guide** (585-215-601).

Screen Description

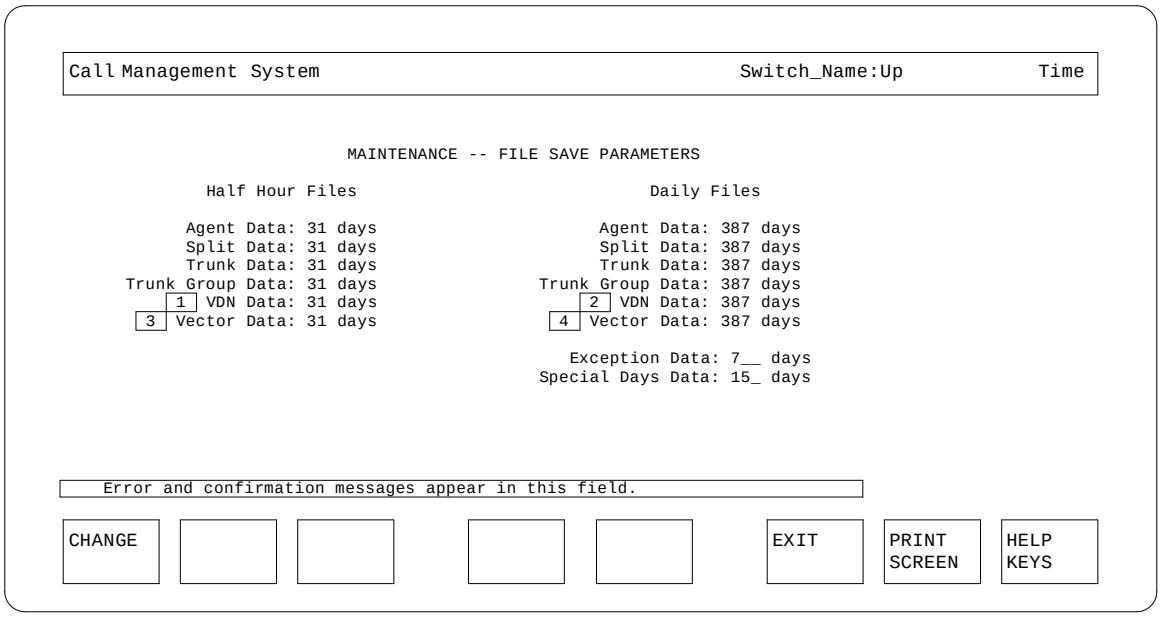


Figure 9-2 Archive Parameters Screen

Definition of Fields

Field 1 Half Hour VDN Data

The number of days of half-hour VDN data CMS will save. The maximum is 31 days.

Default: 3-1

Field 2 Daily VDN Data

The number of days of daily VDN data CMS will save. The maximum is 387 days.

Default: 387

Field 3 Half Hour Vector Data

The number of days of half-hour vector data CMS will save. The maximum is 31 days.

Default: 3-1

Field 4 Daily Vector Data

The number of days of daily vector data CMS will save. The maximum is 387 days.

Default: 387

Changing a VDN or Vector File-Save Period

1 On the `MAINTENANCE` menu, select the `Archive-Parameters` option and press RETURN.

[The Archive Parameters screen with the current parameters appears.]

2 Overtype a new number of days in any of the fields, and press CHANGE.

The number of days entered in each field will be the new archive period for the type of files associated with that field.

Session Status

Purpose	Check the number of measured VDNs and vectors.
Dependencies	Switch (MAAP or SMT) translations defining measurement of vectors and VDNs.

The Session Status screen displays the numbers of measured VDNs and vectors that are currently available to use for your call center. Though you cannot change these numbers on the Session Status screen, the Session Status screen lets you quickly check to see how many more VDNs or vectors you can use.

The maximum number of measured VDNs you can have is 255. The maximum number of measured vectors you can have is 128.

NOTE

Refer to Chapter 11 in the *Call Management System Administration* (585-215-504) document for other uses of the Session Status screen.

Screen Description

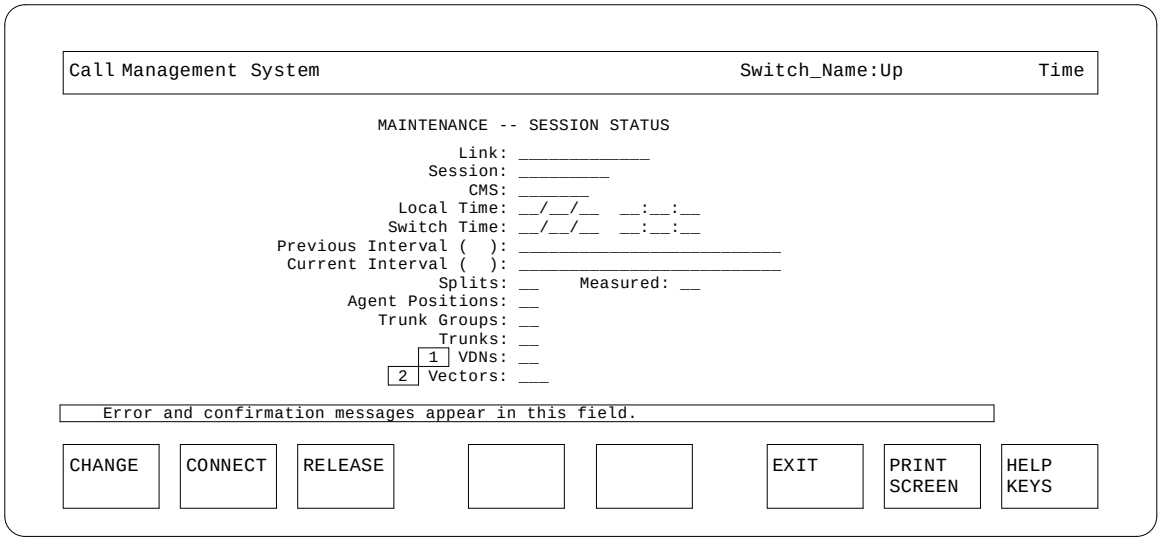


Figure 9-3 Session Status Screen

Definition of Fields

NOTE All fields are read-only except the `Measured` field.

Field 1 VDNs

The number of VDNs that CMS is currently measuring. The maximum is 255.

Field 2 Vectors

The number of vectors that CMS is currently measuring. The maximum is 128.

Checking the Number of Measured VDNs and Vectors

1 On the `MAINTENANCE` menu, select the `Session-Status` option and press RETURN.

[The Session Status screen appears.]

2 Check the `VDNs` and `Vectors` fields for the number of VDNs and vectors that are measured.

For a Generic 2/ System 85, you must use the MAAP/ SMT Procedure 000, Word 1, and/ or Procedure 031, Word 1, to change the number of VDNs. If you want to change the number of vectors, you can use MAAP/ SMT Procedure 030, Word 3 or the CMS Vector Specifications screen.

For Generic 3i, you must use the Vector Directory Number Form on the DEFINITY Manager I to change the number of VDNs. You must use the Manager I's Call Vector Form to change the number of vectors.

Glossary

Abandoned Call
A call that queued to a split and subsequently terminated because the caller hung up before being answered by an agent.

Abbreviated Dialing
A feature that allows a list of phone numbers to be stored in the PBX software so that dialing an abbreviated code automatically dials the whole number. This feature is used in Call Vectoring to allow use of abbreviated codes in ''Route To'' commands.

Access Permissions
Permissions assigned to a CMS user so that the user can access different subsystems in CMS or administer specific elements (splits, trunks, vectors, and so on) of the ACD. Access permissions are specified as Read or Write permission. Read permission means the CMS user can run reports and/ or view administration screens for certain parts of the ACD. Write permission means the CMS user can perform administrative tasks for certain parts of the ACD or CMS.

After-Call Work (ACW)
An agent state in which the agent is engaged in bookkeeping, data entry, or other work related to the previous ACD call. The agent enters after-call work after terminating an ACD call received in the MANUAL-IN call answering mode. The ACD will not send calls to the agent while the agent is in ACW.

Agent
A person who answers calls to an extension in a split.

Announcement
A recorded message that normally tells the caller what destination the call has reached. The announcement also often tries to persuade the caller to stay on the line. With Call Vectoring, announcements can be part of a vector's call processing. An announcement is assigned to a vector by entering an announcement number.

Answer Supervision
A signal, sent from the switch to the serving Central Office (CO), that tells the CO to begin recording toll charges for a call.

Archive Parameters
A user-defined length of time for which historical data will be saved in the CMS database. Archive parameters are set for each type of ACD element (agents, splits, vectors, VDNs, and so on) and for either half-hour data or daily data.

Attendant
A person who manually routes calls to their proper destinations using an attendant console (which is like a call switchboard). Normally, an attendant serves as an internal operator who transfers calls to the proper extensions.

Automatic Call Distribution (ACD)
Software installed on a switch that automatically distributes incoming calls to available extensions within splits.

Automatic-in Trunk Group
A trunk group for which the Central Office processes all of the dialed digits of a call, seizes a trunk, and sends the call directly to a destination identified in the switch software.

Automatic Alternate Routing (AAR)
A feature on a switch that finds the lowest-cost routing for a call made within a private network. AAR normally checks possible routes in sequence from lowest to highest cost, and sends the call over the first route that it finds is available.

Automatic Route Selection (ARS)
A feature on a switch that finds the lowest-cost routing for a call that must be routed through the public network. ARS normally checks possible routes in sequence from lowest to highest cost, and sends the call over the first route that it finds is available.

Auxiliary Work (AUX)
An agent state in which the agent is engaged in non-ACD work, is on break, in a meeting, or at lunch. The agent presses the AUX-WORK button to enter the AUX state. The ACD will not send calls to the agent while the agent is in AUX.

Available
An agent state in which the agent is able and ready to accept an ACD call. When an agent is available, the agent has staffed a split extension, but is not currently on an ACD call, in AUX work, or in after-call work.

Backup Split
An additional split assigned in a vector to accept a call if the split's conditions for accepting calls are met before the call connects to an agent in the main split. Backup splits are assigned to handle calls in a vector using the "Check backup split" command.

Calculation
A synonym or name for a formula that generates data for a field in a report. A calculation is assigned to a formula using the Dictionary — Calculations screen.

Call Vectoring
A highly-flexible method for processing ACD calls using VDNs and vectors as processing points between trunk groups and splits. Call vectoring permits treatment of calls that is independent of splits.

Call Waiting
A feature that allows a call to a busy single-appearance voice terminal to be held waiting at that terminal until it can be answered or the caller hangs up. A call routed from a vector to a specific extension is not held by the Call Waiting feature. Instead, the call immediately goes to a forwarding destination of that extension or returns to the vector for continued processing.

Centralized System Management (CSM)
A software tool that, among other uses, can be used to administer the ACD and Call Vectoring features.

Database
A group of files that store ACD data according to a specific time frame: current real-time, previous real-time, half-hour historical, or daily historical.

Database Item
A name for a specific type of data stored in one of the CMS databases. A data base item may store ACD identifiers (split numbers, login IDs, VDNs, etc.) or statistical data on ACD performance (number of ACD calls, wait time for calls in queue, current states of individual agents, etc.).

Dialed Number Identification Service (DNIS)
A feature that can identify the 800 Service number of an incoming call and display that number on the display voice terminal of the ACD agent who picks up the call. Identification of the dialed number usually indicates the purpose of the call. Agents in a split can, therefore, service a variety of call types, without first having to identify the purpose of each call.

Direct Inward Dial (DID) Trunk Group
A trunk group for which only the prefix of the assigned phone number is processed at the Central Office. The CO sends the remaining digits to the switch for final processing. A Direct Inward Dial trunk group accepts a wide variety of phone numbers, provided the prefix is always the same. This variety allows a single trunk group to carry calls arriving from the public network to large numbers of extensions connected to a switch.

Dial-repeating Trunk Group
The same as a DID trunk group.

Exception
A condition in which a particular type of ACD activity has occurred at a rate defined as exceptional by the user. An exceptional rate is defined in the CMS Exceptions subsystem, and usually indicates abnormal or unacceptable performance on the ACD (by agents, splits, VDNs, vectors, trunks, or trunk groups).

Extension
Normally, a telephone line that is assigned a 1- to 5-digit number within a switch or private network. That number is usually the internal phone number for an employee phone or the external phone number when a DID prefix is added. Sometimes an extension number is created in the switch software, but is not actually assigned to a telephone line. Such extension numbers are created for the purposes of special features. For example, VDNs are extension numbers that permit access to vector processing.

File
A grouping of records in one of the CMS databases according to the type of ACD element (SPLIT, LOGID, VDN, VECTOR, TRUNK, or TRUNK GROUP) for which records are created.

Forced Busy
An automatic busy signal given to an incoming call by the switch. With a forced busy, the call is also removed from switch processing. The ‘‘Busy’’ vector command is used for forced busy. However, calls on automatic-in trunk groups cannot receive a forced busy unless answer supervision is sent first to the CO.

Forced Disconnect
Automatic disconnect of an incoming call by the switch. With a forced disconnect, the caller hears a click, and then silence. The ‘‘Disconnect’’ vector command is used for forced disconnects.

Formula
An arithmetic expression containing database items. A formula is used to derive additional ACD data for reports using data from database items.

Historical Reports
CMS reports that display past data for various agent, split, trunk, trunk group, vector, or VDN activities.

Interval
A half-hour segment of time starting at either the hour or the half-hour. An interval is the basic unit of CMS reporting time.

Intraflow
The redirection of calls to a destination inside of the local switch.

Integrated Service Digital Network (ISDN)
A network that uses digital transmission at all points in a connection. An ISDN permits the use of telephone lines and trunks for the simultaneous transmission of voice and data signals. As a result, ISDN permits the use of telephone lines and trunks for a wide range of telecommunications services and features.

Interflow
The redirection of calls to a destination outside of the local switch. Interflowed calls can be sent through either a public or private network.

Look-Ahead Interflow
A feature available with Call Vectoring that checks the receiving vector of an interflowed call to ensure proper treatment. If the call will be disconnected or given a busy signal by the receiving vector, or if the receiving vector tries and fails to reroute the call, the call will be returned to the sending vector to be processed by the next step.

Main Split
A split identified in a vector ''Queue to Main Split'' command. A call that reaches a ''Queue to Main Split'' command is sent to the main split queue. The call may connect immediately to a split agent, or it may enter the split's queue. If the call enters a split's queue, the call will stay in the queue until it is answered, abandoned, or vector processing removes the call from the queue (via vector commands such as ''Check Backup Split,'' ''Route To,'' or another ''Queue to Main Split'' command).

Maintenance and Administration Panel (MAAP)
A switch administration tool for the System 85.

Measured
A term that means an ACD element (split, extension, VDN, etc.) has been identified to CMS for collection of data.

Names Database
A database administered on the switch that, among other tasks, is used to assign names to VDNs and trunk groups.

Primary Rate Interface (PRI)
An ISDN standard interface that provides 23 ''B'' bearer channels and one ''D'' (data) channel. ISDN— PRI provides switch-to-switch ISDN capabilities. ISDN— PRI is required for the Look-Ahead Interflow feature.

Priority Level
A grouping of calls in a split queue by the priority with which the calls should be answered. A single split's queue can include 1 to 4 priority levels. The levels are identified as top, high, medium, and low. All calls with medium priority will be answered before any call with low priority. All calls with high priority will be answered before any call with medium or low priority. All calls with top priority will be answered before any call at another priority level.

Private Branch Exchange (PBX)
A private switching system providing voice-only or voice and data communications services (including access to public and private networks) for a group of terminals within a customer's premises.

Queue
A holding area for calls waiting to be answered in the order in which they were received. Calls in a queue may have different priority levels, in which case, calls with a higher priority are answered first.

Queue Directory Number (QDN)
The first associated extension number assigned to a split. An associated extension number is a number that accesses the split, either through internal dialing of the number or external dialing of a DID prefix and the number. A QDN is not assigned an equipment location.

Real-time Reports
CMS reports that display agent, split, trunk, trunk group, vector, or VDN data for the current or previous half-hour. Current half-hour real-time reports are constantly updated as data changes during the half-hour. Previous half-hour real-time reports show data totals for activity that occurred in the previous half-hour.

Report Parameters
A user's selection of specific ACD elements [which split(s), which agent(s), etc.] for a report. Report parameters may also include selection of specific days or half-hour intervals a report should cover.

Ringback
Ringing that a caller usually hears before a call is answered. Ringback may be generated by the switch or by the Central Office, depending on the treatment selected in the vector.

Split
A group of extensions that receives special-purpose calls in an efficient, cost-effective manner. Normally, calls to a split arrive primarily over one or a few trunk groups.

Staffed
An agent state in which the agent has notified the ACD that the agent is preparing to receive calls. The agent must still press another button, either MANUAL-IN or AUTOMATIC-IN, to actually begin receiving calls.

Switch
See the definition for PBX.

Synonym
A name for an ACD element that appears on CMS administration screens and reports for easy identification. For example, an agent's name may be displayed along with the agent's login ID number. Synonyms are entered in the CMS Dictionary subsystem.

System Management Terminal (SMT)
A switch administration tool for the System 85.

Threshold
The number of occurrences of an ACD activity required to generate an exception. When the duration of an activity is defined for exception checking, the threshold is the number of occurrences in which the activity meets or falls outside of the defined duration.

Trunk
A telephone line that carries calls between two switches, between a CO and a switch, or between a CO and a phone.

Trunk Group
A group of trunks that are assigned the same dialing digits — either a phone number or a DID prefix.

User ID
A login ID for a CMS user.

Vector
A list of up to 15 steps that process calls in a user-defined manner. The steps in a vector can send calls to splits, play announcements and music, disconnect calls, give calls a busy signal, or route calls to other destinations. Calls enter vector processing via VDNs, which may have received calls from assigned trunk groups, from DID trunk groups, from other vectors, or from extensions connected to the switch.

Vector Command
The keyword in a vector step that describes the action to be executed on an incoming call.

Vector Directory Number (VDN)
An extension number that is used in ACD software to permit calls to connect to a vector for processing. A VDN is not assigned an equipment location. It is assigned instead to a vector. A VDN can connect calls to a vector when the calls arrive over an assigned automatic-in trunk group or when calls arrive over a dial-repeating (DID) trunk group and the final digits match the VDN. The VDN by itself may be dialed to access the vector from any extension connected to the switch.

Vector Step
One processing step listed in a vector. A vector step consists of a command and one or more conditions.

Vector Step Condition
A condition accompanying a vector command that defines the circumstances in which the command will be applied to a call.

Voice Terminal

A telephone set, usually with buttons that give an agent some control over the way calls are handled.

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