AT&T

CentreVu™ **Call Management System Release 3**

External Call History Interface

CentreVu Call Management System
Release 3

External Call History Interface

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Introduction

The External Call History Interface is an optional *CentreVu™* Call Management System (CMS) feature which allows you to transfer the *CentreVu* CMS Release 3 Version 4 (R3V4) call record files (call history data files) to another computer for processing.

This feature is especially useful for call centers with a high volume of call traffic. It allows a much higher volume of call data to be processed and stored because the *CentreVu* CMS computer can only process a limited amount of call data.

You will need to allocate space on *CentreVu* CMS for call records to be buffered (in System Setup: Data Storage Allocation, up to 99,999 segments in a buffer).

As calls are processed, call records are recorded in a file (one record per call segment) until the file size reaches 20 Mbytes *or* the end of an interval is reached, whichever comes first. When this happens, the file of call record segments is transferred to another computer via uucp (at speeds of up to 38,400 bps if the computers are close).

A new file (and its first record) is then created as the first segment of the next call is processed.

This book describes the format of the external call history data files and what you must do to transfer these files to your computer.

| Note | You are responsible for the storage of and subsequent formatting, printing, etc., of the data transferred to your computer. |

Call Record File Format

This section describes the format of the *CentreVu* CMS call record files that are transferred by the External Call History Interface.

Data Characteristics

- *Integers* are stored with the least significant byte first and the most significant byte last.

- Data items of type *char* are ASCII character strings of the length specified in the *Length* column of Table 1. If a string is shorter than the specified amount, the unused characters are zeros. (At least one zero always follows the data in a character string.)

File Name Format

These files are named *chrxxxx* (*chr* followed by a 4-digit number) on the *CentreVu* CMS computer. The transfer process adds an extension of up to three digits so the file name on the receiving computer is *chrxxxx.x, chrxxxx.xx or chrxxxx.xxx.*

File Header

The following paragraphs explain how *CentreVu* CMS sends integers to the receiving computer. The receiving computer may have different descriptions for integers. Once your software has parsed and stored the data on the receiving computer, it may have been transformed to a different representation**.**

Each call record file has the following header:

VERSION (4-byte Integer)	**SEQUENCE_NUMBER** (4-byte Integer)

The **VERSION** field identifies the R3 CMS Version and the format of the call record file. Any data, as described in this document, is correct only for R3V4 software. Therefore, the **VERSION** field will contain a 2 for every header.

The **SEQUENCE _NUMBER** field identifies a particular call record file so that duplicates can be recognized when retransmission has occurred. These files are sequential. The **SEQUENCE_NUMBER** restarts at zero when its 4-byte integer reaches its limit [when all bits are high (ones) in its binary equivalent].

An example of the information contained in a call record file follows.

	VERSION	**SEQUENCE_NUMBER**
Decimal	2	1
Binary	00000010 00000000 00000000 00000000	00000001 00000000 00000000 00000000

The least significant bytes are stored first and the most significant bytes last.

Record Field Format

The file header is followed by a variable number of fixed-length records whose fields appear *in the order shown* in the *Field* column of Table 1. (These fields are the database items for CMS call records.) This table also explains the type (integer, bit, or ASCII characters) and length of each field and the meaning of the data contained in that field.

The order and types of record fields are as follows:

- Fields **CALLID** through **TKGRP** are integers.

- Fields **ASSIST** through **TRANSFERRED** are bits.

- Fields **ACD** through **EVENT1-9** are integers.

- Fields **DISPVDN** through **LASTCWC** are ASCII strings.

Table 1: Record Field Format

Field (Database Item)	Type	Length	Description
CALLID	integer	4 bytes	A unique number assigned to this call and all its segments. For conferenced/transferred calls, two (or more) call segments are tied together. When the entire call is recorded, one call ID is used to tie together all call segments. In the rare case of two existing two-party calls being conferenced together, this may result in a "later" segment of the call starting earlier than the first segment. Call IDs are not necessarily sequential but will be unique for calls over a day.
ACWTIME	integer	4 bytes	Time spent (in seconds) in After Call Work (ACW) related to this call by the answering agent in this segment.
ANSHOLDTIME	integer	4 bytes	Total time (in seconds) call was put on hold by the answering agent in this segment. Note that in agent-to-agent calls, **ANSHOLDTIME** is accrued for the agent who puts the call on hold, but not for the other agent who continues to accrue talk time. Hold time is recorded for any type of call for Generic 2.2 and Generic 3. Hold time is recorded only for ACD calls for System 85 R2V4 and Generic 2.1. Hold time is not recorded for Generic 1 switches.
CONSULTTIME	integer	4 bytes	The time an agent talked on any outbound call while in Auxiliary (AUX) work or ACW. This includes the time the originating agent spent talking to the destination party and includes the time between the two presses of the transfer or conference key. It also includes wait time if the agent is calling a Vector Directory Number (VDN) or split/skill extension, but the wait time can be subtracted out by subtracting the **DISPTIME** item from **CONSULTTIME**.
DISPTIME	integer	4 bytes	The wait time (in the vector, in queue, ringing) until the disposition recorded in disposition for the call segment. For extension calls made directly to agents (not through a VDN), this will always be 0.
DURATION	integer	4 bytes	Total time the trunk was in use. This is the overall trunk holding time from the beginning of the segment until the caller is disconnected. For the first segment of a call, this will be the trunk holding time for the caller for the entire call. With a transfer, the original trunk remains associated with both segments until the call ends. Thus the duration for the first segment is the time from the SEIZED to IDLE state for the trunk.

Table 1: Record Field Format (Contd)

Field (Database Item)	Type	Length	Description
SEGSTART	integer	4 bytes	Switch time in *UNIX* system time format and date when the segment started. (*UNIX* system time and date is the number of seconds since midnight, 01/01/70.) Segments start when *CentreVu* CMS receives the first message for the call, since each segment represents a call. (When an agent transfers or conferences a call, the agent makes another call to effect the transfer/conference.)
SEGSTOP	integer	4 bytes	*UNIX* system time and date when the call ended. A call ends when all trunks and agents associated with this call have dropped off the call. This means that ACW time for the agent is included when calculating the segment stop time.
TALKTIME	integer	4 bytes	Total talk time for the answering agent in this segment.
DISPIVECTOR	integer	2 bytes	The number of the first vector associated with the disposition VDN. This will be 0 if no vector is involved.
DISPSPLIT	integer	2 bytes	The number of the split or skill associated with the call at its disposition in this segment. Calls that were not queued to a split or skill at the time of disposition will have **DISPLIT** set to -1. Calls that were queued to an unmeasured split or skill at the time of disposition will have **DISPLIT** set to 0.
FIRSTIVECTOR	integer	2 bytes	The number of the first vector associated with the first VDN for the call segment. This will be 0 if no vector is involved.
SPLIT1	integer	2 bytes	The first split/skill the call queued to in the first VDN with which it was associated.
SPLIT2	integer	2 bytes	The second split/skill the call was also queued to in the first VDN with which it was associated. [This is for Generic 2.2 with Expert Agent Selection (EAS) and Generic 3 switches with multiple-split/skill queuing only.]
SPLIT3	integer	2 bytes	The third split/skill the call was also queued to in the first VDN with which it was associated. (This is for Generic 2.2 with EAS and Generic 3 switches with multiple-split/skill queuing only.)
TKGRP	integer	2 bytes	The number of the trunk group that carried the call. This will be 0 if the trunk group carrying the call is not measured.
ASSIST	bit	1 bit	*(least significant bit)* Whether or not the answering agent in this segment requested supervisor assistance on this call (YES=1/NO=0).
AUDIO	bit	1 bit	Whether or not an agent in this segment reported an audio problem (YES=1/NO=0).
CONFERENCE	bit	1 bit	Whether or not the answering agent initiated a conference in this segment (YES=1/NO=0).

Table 1: Record Field Format (Contd)

Field (Database Item)	Type	Length	Description
DA_QUEUED	bit	1 bit	Whether or not the call was queued as a direct agent call (YES=1/NO=0). This database item applies to Generic 3 only.
HOLDABN	bit	1 bit	Whether this call abandoned from hold (YES=1/NO=0) in this segment. With System 85 R2V4 and Generic 2.1, this is only for ACD calls. With Generic 2.2 and Generic 3, this is for any call.
MALICIOUS	bit	1 bit	Was malicious call trace activated for this call segment (YES=1/NO=0)? This database item applies to Generic 2, Generic 3, but not Generic 3i Version 1.
OBSERVINGCALL	bit	1 bit	This call represents an agent observing or bridging on to an existing call (YES=1/NO=0).
TRANSFERRED	bit	1 bit	*(most significant bit)* Whether or not an answering agent initiated a transfer on this segment (YES=1/NO=0). For Generic 2.2 and Generic 3 switches, this is set for any call transferred. For System 85 R2V4 and Generic 2.1 switches, this is set for transfers to a measured VDN or split. For Generic 1 switches, this is set only if a measured call is transferred to a measured split or from a measured trunk to a measured trunk.
ACD	integer	1 byte	The number of the ACD that handled this call.
DISPOSITION	integer	1 byte	Represents the call disposition and can have the following values: 1 = connected (non-ACD call to a measured agent) 2 = answered call (split/skill or direct agent call answered by an agent) 3 = abandoned call 4 = interflowed 5 = forced busy 6 = forced disconnect 7 = unmeasured destination. A *connected* call is a non-ACD call to a measured agent for which *CentreVu* CMS receives an indication that the call was connected or, in the case of System 85 R2V4 and Generic 2.1, any call that was delivered to an extension by a "route to" vector command (*CentreVu* CMS receives no indication if the call abandons). On Generic 3, a call that routes to an extension is connected if answered or is abandoned if not answered.

Table 1: Record Field Format (Contd)

Field (Database Item)	Type	Length	Description
DISPOSITION (Contd)	integer	1 byte	An *answered* call is any split/skill or direct agent ACD call for which *CentreVu* CMS receives an indication that the call was answered by an agent.
			An *abandoned* call is any call for which *CentreVu* CMS receives notification that the caller abandoned.
			Forced busy calls are calls that *CentreVu* CMS records as **BUSYCALLS** for the trunk group that carried them. These calls can be VDN calls that received a forced busy from the vector command or, on the Generic 1 and Generic 3 switches, a split/skill call for a nonvector-controlled split that received a busy indication from the switch because the split queue was full.
			For G2.2, *forced disconnect* calls are VDN calls that are disconnected by the switch due to the execution of a disconnect vector command.
			For System 85 R2V4, G2.1, and G3, *forced disconnect* calls are calls that were given a forced disconnect announcement after listening to the entire announcement and were then disconnected by the switch.
			For G3V2, *disconnect calls* also include calls disconnected because of the vector disconnect timer, or because they reached the end of vector processing without being queued.
DISPPRIORITY	integer	1 byte	Represents the priority the call had at its disposition and can have the following values:
			0 = null 1 = no (no vectoring) 2 = yes (no vectoring) 3 = low (vectoring) 4 = medium (vectoring) 5 = high (vectoring) 6 = top (vectoring).
			If the call never queued to a split/skill, the priority will be null.

Table 1: Record Field Format (Contd)

Field (Database Item)	Type	Length	Description
HELD	integer	1 byte	The total number of times this call was placed on hold by the answering agent in this segment. With agent-to-agent calls, this count is incremented for the answering agent who puts the call on hold, but not for the agent who did not put the call on hold. With System 85 R2V4 and Generic 2.1 switches, this equals split/skill calls. With Generic 2.2 and Generic 3 switches, this equals all calls.
SEGMENT	integer	1 byte	The number for identifying the segment. Segment numbers are from 1 up to the number of segments in the call.
EVENT1-9	integer	9 bytes	(Nine 1-byte integers, 1 byte for each event) Number of times each event (stroke count) key was entered for this call segment.
DISPVDN	char	6 bytes	The number of the VDN associated with the call at its disposition for this segment. **DISPVDN** will be 0 for calls that are not associated with a VDN at their disposition.
EQLOC	char	10 bytes	The equipment location of the trunk that carried the call. This will be 0 if the trunk is not measured.
FIRSTVDN	char	6 bytes	The number of the first VDN associated with the call segment. This will be 0 for calls not associated with a VDN.
ORIGLOGIN	char	10 bytes	The login ID of the agent originating the call. This is used for calls an agent originates to another agent, to an on-switch extension, or to an external destination (includes calls made as part of a transfer or conference).
ANSLOGIN	char	10 bytes	The login ID of the agent who answered the call in this segment.
LASTOBSERVER	char	10 bytes	The login ID of the last agent who service-observed or bridged on to this call.
DIALED_NUM	char	25 bytes	The number the caller dialed. This will be the VDN for inbound vectoring calls and dialed digits for outbound calls. This will be 0 for inbound calls without vectoring.
CALLING_PTY	char	13 bytes	For all switches, shows extension number for internal calls and the trunk equipment location for non-ISDN PRI calls. For G3 switches, this will be the trunk equipment location for ISDN PRI calls. For G2.2 ISDN PRI calls with ANI delivery, ANI will be stored.
(unused)		17 bytes	(Reserved for future use.)
LASTCWC	char	17 bytes	The last call work code entered by the answering agent in this segment. This database item applies to Generic 2.2 and Generic 3 only.

Sample Call Scenario and Corresponding Call Records

Scenario: An inbound vectored call is answered by an ACD agent, and then transferred to a VDN. Since the call is transferred, two call records are generated (one call record is generated for every *call segment*). The first call segment is shown below. Table 2 explains the call record for the first segment.

First Call Segment and Call Record

1. A call comes into ACD 1 on TG 32 (carried on the trunk located at 0101A0102) to VDN 43211 which points to Vector 33 at 07:37:10 on 04/16/94.

2. The call queues to Split 1 at medium priority via a "queue to main" command, then to backup Split 2 at low priority via a "check backup" command.

3. Call waits 10 seconds, rings for 5 seconds, then is answered by agent 5018 in Split 1.

4. Caller and agent talk for 44 seconds. The agent transfers the call to VDN 43712 which points to Vector 37. (Call is held for 4 seconds while transferring.)

5. Agent has 42 seconds of after call work during which the agent enters call work code 12345.

Note | In Table 2, the first column shows whether the field is part of the header or a record field. See Table 1 for the field type (integer, bit or character), field length and field description. The *Call Report Entry* column shows data that would appear on a standard *CentreVu* CMS call report for this call segment. The shaded *Call Record Entry* column shows the binary equivalent of the . This binary data appears in an actual call record file **in the order shown** in Table 2. Spaces (as .) are shown between bytes for clarity in the *Call Record Entry* column.

Table 2: Call Record Breakdown for Segment 1

	Field	Call Report Entry	Call Record Entry
File Header	**VERSION**	2	00000010 00000000 00000000 00000000
.	**SEQUENCE_NUM**	1	00000001 00000000 00000000 00000000
Record Fields	**CALLID**	212	11010100 00000000 00000000 00000000
.	**ACWTIME**	00:42	00101010 00000000 00000000 00000000
.	**ANSHOLDTIME**	00:04	00000100 00000000 00000000 00000000
.	**CONSULTTIME**	00:00	00000000 00000000 00000000 00000000
.	**DISPTIME**	00:15	00001111 00000000 00000000 00000000
.	**DURATION**	04:25	00001001 00000001 00000000 00000000
.	**SEGSTART**	07:37:10 04/16/94	10110110 10111110 01010110 00100110
.	**SEGSTOP**	07:42:35 04/16/94	10110110 10111110 01011010 11101011
.	**TALKTIME**	00:44	00101100 00000000 00000000 00000000
.	**DISPIVECTOR**	33	00100001 00000000
.	**DISPSPLIT**	1	00000001 00000000
.	**FIRSTIVECTOR**	33	00100001 00000000
.	**SPLIT1**	1	00000001 00000000
.	**SPLIT2**	2	00000010 00000000
.	**SPLIT3**	0	00000000 00000000
.	**TKGRP**	32	00100000 00000000
.	**ASSIST**	N	0
.	**AUDIO**	N	0
.	**CONFERENCE**	N	0
.	**DA_QUEUED**	N	0
.	**HOLDABN**	N	0
.	**MALICIOUS**	N	0
.	**OBSERVINGCALL**	N	0
.	**TRANSFERRED**	Y	1
.	**ACD**	1	00000001
.	**DISPOSITION**	Ans	00000010

Table 2: Call Record Breakdown for Segment 1 (Contd)

	Field	Call Report Entry	Call Record Entry
Record Fields	**DISPPRIORITY**	m	00000100
.	**HELD**	1	00000001
.	**SEGMENT**	1	00000001
.	**EVENT1-9**	0	00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
.	**DISPVDN**	43211	00110100 00110011 00110010 00110001 00110001 00000000
.	**EQLOC**	0101A0102	00110000 00110001 00110000 00110001 01000001 00110000 00110001 00110000 00110010 00000000
.	**FIRSTVDN**	43211	00110100 00110011 00110010 00110001 00110001 00000000
.	**ORIGLOGIN**	0	00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
.	**ANSLOGIN**	5018	00110101 00110000 00110001 00111000 00000000 00000000 00000000 00000000 00000000 00000000
.	**LASTOBSERVER**	0	00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
.	**DIALED_NUM**	43211	00110100 00110011 00110010 00110001 00110001 00000000
.	**CALLING_PTY**	0101A0102 (eqloc for Generic 3) ANI for Generic 2.2	00110000 00110001 00110000 00110001 01000001 00110000 00110001 00110000 00110010 00000000 00000000 00000000 00000000

Table 2: Call Record Breakdown for Segment 1 (Contd)

	Field	Call Report Entry	Call Record Entry

Record Fields	(reserved)	0	`00000000 00000000 00000000 00000000`
			`00000000 00000000 00000000 00000000`
			`00000000 00000000 00000000 00000000`
			`00000000 00000000 00000000 00000000`
			`00000000`

.	**LASTCWC**	12345	`00110001 00110010 00110011 00110100`
			`00110101 00000000 00000000 00000000`
			`00000000 00000000 00000000 00000000`
			`00000000 00000000 00000000 00000000`
			`00000000`

Second Call Segment and Call Record

The second call segment of the inbound vectored call being transferred to a VDN scenario is discussed below. The call was transferred by agent 5018 to a VDN. Table 3 explains the call record for the second call segment. This record has no header information, because it follows the first call segment record in the same file.

1. Caller is transferred to VDN 43712 which points to Vector 37.

2. Call is queued to Splits 4 and 5 at high priority, using a "queue to main" step to queue to Split 4 and a "check backup" step to queue to Split 5.

3. Caller waits 1 second and rings for 2 seconds before being answered by agent 2139 in Split 5.

4. Caller and agent talk for 3 minutes, 19 seconds.

5. Agent has 1 minute of after call work during which the agent enters call work code 67890. Stop time is 7:42:35 (includes the ACW time that extends beyond the time at which the caller dropped).

| Note | In Table 3, the first column shows all the fields of this record to be record fields (no header). See Table 1 for the field type (integer, bit or character), field length, and field description. The *Call Report Entry* column shows data that would appear on a standard *CentreVu* CMS call report for this call segment. The shaded *Call Record Entry* column shows the binary equivalent of the *Call Report Entry*. This binary data appears in an actual call record file **in the order shown**

Spaces (as .) are shown between bytes for clarity in the *Call Record Entry* column.

Table 3: Call Record Breakdown for Segment 2

	Field	Call Report Entry	Call Record Entry
Record Fields	**CALLID**	212	11010100 00000000 00000000 00000000
.	**ACWTIME**	01:00	00111100 00000000 00000000 00000000
.	**ANSHOLDTIME**	00:00	00000000 00000000 00000000 00000000
.	**CONSULTTIME**	00:00	00000000 00000000 00000000 00000000
.	**DISPTIME**	00:03	00000011 00000000 00000000 00000000
.	**DURATION**	03:22	11001010 00000000 00000000 00000000
.	**SEGSTART**	07:38:13 04/16/94	10110110 10111110 01010111 00100101
.	**SEGSTOP**	07:42:35 04/16/94	10110110 10111110 01011010 11101011
.	**TALKTIME**	03:19	11000111 00000000 00000000 00000000
.	**DISPIVECTOR**	37	00100101 00000000
.	**DISPSPLIT**	5	00000101 00000000
.	**FIRSTIVECTOR**	37	00100101 00000000
.	**SPLIT1**	4	00000100 00000000
.	**SPLIT2**	5	00000101 00000000
.	**SPLIT3**	0	00000000 00000000
.	**TKGRP**	32	00100000 00000000
.	**ASSIST**	N	0
.	**AUDIO**	N	0
.	**CONFERENCE**	N	0
.	**DA_QUEUED**	N	0
.	**HOLDABN**	N	0
.	**MALICIOUS**	N	0
.	**OBSERVINGCALL**	N	0
.	**TRANSFERRED**	N	0
.	**ACD**	1	00000001

Table 3: Call Record Breakdown for Segment 2 (Contd)

	Field	Call Report Entry	Call Record Entry
Record Fields	**DISPOSITION**	Ans	00000010
.	**DISPPRIORITY**	h	00000101
.	**HELD**	0	00000000
.	**SEGMENT**	2	00000010
.	**EVENT1-9**	0	00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
.	**DISPVDN**	43712	00110100 00110011 00110111 00110001 00110010 00000000
.	**EQLOC**	0101A0102	00110000 00110001 00110000 00110001 01000001 00110000 00110001 00110000 00110010 00000000
.	**FIRSTVDN**	43712	00110100 00110011 00110111 00110001 00110010 00000000
.	**ORIGLOGIN**	5018	00110101 00110000 00110001 00111000 00000000 00000000 00000000 00000000 00000000 00000000
.	**ANSLOGIN**	2139	00110010 00110001 00110011 00111001 00000000 00000000 00000000 00000000 00000000 00000000
.	**LASTOBSERVER**	0	00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
.	**DIALED_NUM**	43712	00110100 00110011 00110111 00110001 00110010 00000000

Table 3: Call Record Breakdown for Segment 2 (Contd)

	Field	Call Report Entry	Call Record Entry
Record Fields	**CALLING_PTY**	0101A0102 (eqloc for Generic 3) ANI for Generic 2.2	00110000 00110001 00110000 00110001 01000001 00110000 00110001 00110000 00110010 00000000 00000000 00000000 00000000
.	(reserved)	0	00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000
.	**LASTCWC**	67890	00110110 00110111 00111000 00111001 00110000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000

Setup Information

This section describes how to set up the *CentreVu* CMS computer for the External Call History Interface, how to connect the *CentreVu* CMS computer to the receiving computer, and presents guidelines for selecting and setting up the receiving computer.

Customer Responsibilities

You must do the following to transfer call history data:

- Purchase the External Call History Interface package.

- Contact the Technical Service Center to authorize the feature. If you are an international customer, contact the AT&T International Technical Assistance Center on 1-303-538-4666.

- Install the feature on *CentreVu* CMS.

- Set up the connection between the *CentreVu* CMS computer and the computer which will be receiving the data.

- Provide the receiving computer application and software that will:

  — Allow the receiving computer to receive data via uucp.

  — Parse the files of data being transferred.

  — Store the data in some usable fashion (such as in a database on the receiving computer).

  — Convert the data to a usable format.

Setting Up the *CentreVu* CMS Computer

This section outlines how to install and set up the External Call History Interface on a 3332, *Star Server S*[®] *,* WGS 33, or WGS 25 computers.

Installing the External Call History Interface Feature

| Note | Once the External Call History Interface feature is installed, you will no longer be able to access any call record data from *CentreVu* CMS nor will you be able to use the *CentreVu* CMS Call Record report. |

After the External Call History Interface feature has been purchased and authorized, you must install the feature.

If your *CentreVu* CMS computer is a 3332, a *Star Server S*, or a 386 machine, installing the feature will automatically set up the appropriate ports.

If your *CentreVu* CMS computer is a *Sun SPARCserver* 5, 10, or 20 computer, the ports are *not* set up by installing the feature. See the "Assigning Ports on the *Sun SPARCserver* Computer" for the setup procedures.

Do these steps to install the External Call History feature package:

1. Log in as *root*. The computer must be in run-level 2, and all file systems must be mounted.

2. Access the Services menu by entering `cmssvc.`

    The Services menu appears as shown below.

```
 Commands for Services Personnel

Select a command from the list below.
  1) auth_display  Display feature authorizations
  2) auth_set      Authorize CMS capabilities/capacities
  3) backup        Single-tape filesystem backup (in background)
  4) run_cms       Turn CMS on or off
  5) setup         Set up the initial CMS configuration
  6) swinfo        Display switch information
  7) swsetup       Change switch information
  8) upd_install   Install update from disk files
  9) upd_remove    Back out the currently installed update
 10) upd_save      Save update on disk for later installation
Enter choice (1-10) or q to quit:
```

3. Enter `1` to select auth_display, and verify that the system is authorized to install the External Call History package.

    System response:

```
        Capability/Capacity       Authorization
        -------------------       -------------
                   vectoring       authorized
                 forecasting       authorized
                    graphics       not authorized
                R3V4 features      authorized
     external call history        authorized
   expert agent selection         authorized
      external application        authorized
Maximum number of agents          xxxx
   Maximum number of ACDs         x
```

> **Note** If External Call History is not authorized but should be, call
> the **AT&T Call Center Helpline on 1-800-344-9670**.

4. *CentreVu* CMS must be turned off before the package can be
    installed. To turn off *CentreVu* CMS, first access the *CentreVu* CMS
    Administration menu by entering **cmsadm.**

    The *CentreVu* CMS Administration menu appears as shown below.

```
  CentreVu(TM) Call Management System Administration Menu
Select a command from the list below.
   1) acd_create  Define a new ACD
   2) acd_remove  Remove all administration and data for an ACD
   3) backup      Filesystem backup
   4) diskmap     Estimate disk requirements
   5) memory      Estimate memory requirements
   6) realtime    Estimate real-time report refresh rate
   7) pkg_install Install a feature package
   8) pkg_remove  Remove a feature package
   9) run_cms     Turn CMS on or off
Enter choice (1-9) or q to quit:
```

5. Enter **9**.

    System response:

```
Select one of the following
  1) Turn on CentreVu CMS
  2) Turn off CentreVu CMS
Enter choice (1-2)
```

6. Enter **2** to turn off *CentreVu* CMS.

System response:

```
  *** Turning off CMS, Please wait ***
```

CentreVu CMS turns off and the following appears:

```
  *** CMS is now off ***


  Enter choice (1-2) or q to quit:
```

7. Access the *CentreVu* CMS Administration menu by entering **cmsadm**.

The *CentreVu* CMS Administration menu appears.

```
  CentreVu(TM) Call Management System Administration Menu
 Select a command from the list below.
    1) acd_create   Define a new ACD
    2) acd_remove   Remove all administration and data for an ACD
    3) backup       Filesystem backup
    4) diskmap      Estimate disk requirements
    5) memory       Estimate memory requirements
    6) realtime     Estimate real-time report refresh rate
    7) pkg_install  Install a feature package
    8) pkg_remove   Remove a feature package
    9) run_cms      Turn CMS on or off
 Enter choice (1-9) or q to quit:
```

8. Enter **7** to select the pkg_install option.

System response:

```
The CMS Features that can be installed are
  1) forecasting
  2) external call history
Enter choice (1-2) or q to quit:
```

> **Note** The system displays only feature packages that are authorized and not yet installed. If the External Call History package is already installed, it will not be shown.

9. Enter the number that corresponds to External Call History.

System response:

```
Enter the name of the Call History Receiving machine (up to 8
  characters):
```

10. Enter the name of the receiving computer.

System response:

```
Enter password for nuucp login on xxxxxxxx (up to 8
  characters):
```

11. Enter the *nuucp* password for the receiving computer.

System response: (For a *Sun SPARCserver* computer, *s_pdevxxx* will display.)

```
Enter CMS port for connection to xxxxxxxx (ttyihxxx):
```

12. Enter the port on the *CentreVu* CMS computer to be used by the receiving computer.

    Note For the 3332, *Star Server S*, or WGS computers, ports tty00 and tty01 cannot be used for connections to external machines, because these ports connect to the remote console.

    System response:

```
Select a speed for this connection
1) 19200
2) 38400
```

13. Enter the speed that the connection between the *CentreVu* CMS and the receiving computer will be using.

    System response:

```
Number of call segments to buffer for ACD xxxxxxx (0-99999):
```

14. Enter the number of call records to be held in the buffer if the receiving machine cannot accept the data (this should equate to a minimum of 20 Mbytes). This step reserves disk space; therefore, sufficient disk space must be available.
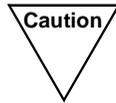
▽Caution **You will lose external call record data if the buffers on the *CentreVu* CMS computer fill up**. (Standard *CentreVu* CMS call data is not affected.)

The buffers could become filled due to a link failure if the storage capacity of the receiving machine is exceeded or if the receiving machine goes down.

Collection of external call records resumes when uucp finishes copying the files from the *CentreVu* CMS buffers to the receiving computer.

Note Repeat Step 13 for each administered ACD.

System response:

```
Computing space requirements and file system
   space availability.

External Call History package installed
```

15. Verify that the installation completed successfully by entering the following:

tail /cms/install/logdir/admin.log

The External Call History package installed successfully when you see the following message.

```
    .
    .
    .
  External Call History package installed <date/time>
```

16. You can now turn *CentreVu* CMS back on. Enter **cmsadm.**

    The CMS Administration menu will appear.

```
  Call Management System Administration Menu
 Select a command from the list below.
    1) acd_create  Define a new ACD
    2) acd_remove  Remove all administration and data for an ACD
    3) backup      Filesystem backup
    4) diskmap     Estimate disk requirements
    5) memory      Estimate memory requirements
    6) realtime    Estimate real-time report refresh rate
    7) pkg_install Install a feature package
    8) pkg_remove  Remove a feature package
    9) run_cms     Turn CMS on or off
 Enter choice (1-9) or q to quit:
```

17. Enter **9.**

    System response:

```
  Select one of the following
    1) Turn on CMS
    2) Turn off CMS
  Enter choice (1-2)
```

18. Enter **1** to turn *CentreVu* CMS on.

    System response:

```
Please wait for initialization
```

When *CentreVu* CMS comes up, the following appears:

```
*** CMS is now up ***
```

Assigning Ports on the *Sun SPARCserver* Computer

If your *CentreVu* CMS computer is a *Sun SPARCserver* 5, 10, or 20, you must install the feature (as previously described), and then set the Network Terminal Server (NTS) port connections as described below.

To address and configure the NTS ports, use the Network Administrator (na) program.

You must log in as *root* at the console terminal.

1. At the system prompt, enter **na** to access the NTS administration software:

```
# na
```

System response:

```
command:
```

2. To associate all subsequent administration with a specific NTS, enter **annex** <name of your NTS> at the command prompt.

```
command: annex <name of your NTS>
```

> **Note** When you enter annex <name of your NTS>, it becomes the default NTS until another NTS is selected using the annex command. The default setting for the NTS ports is 9600 bps, 8 bits, no parity, and 1 stop bit.

System response:

```
# <name of your NTS>: Annex-3-UXR7, 64 ports

command:
```

3. Do Step a. for a **direct connection**.
   Do Step b. for a **modem connection.**

   a. For a **direct connection**, enter the following *set port* string
      command. You must include all the parameters you want to
      change.

```
command: set port=x-y mode slave speed <value> type hardwired
location <value> user_name <value> output_flow_control none
```

   b. For a **modem connection**, enter the following *set port* string
      command. You must include all the parameters you want to
      change.

```
command: set port=x-y mode slave dedicated_address
<Sunaddress> control_lines modem_control speed <value>
type dial_in term_var dial_up broadcast_direction
network location <value> user_name <value>
output_flow_control none
```

| Note | If you prefer, you can break either of these commands down into separate commands to make the entry easier. For example, for the direct connection: |

1. Enter **set port=x mode slave speed** <value>.

2. Press RETURN.

3. Enter **set port=x type hardwired location** <value>.

4. Press RETURN.

5. Continue until the entire command is entered.

The *set port* string command sets the parameters for the serial line ports. The "x" value is the port number on the NTS. You can specify a range of ports. The speed value must be either 19200 or 38400 bps and must match the speed of the receiving computer. You can choose your own values for location and user_name attributes, but they should be port-specific. See Table 4 for other values.

| Note | Be sure to set the *location* and *user_name* (and keep them populated) so that any problems can be traced to the correct port. |

Table 4: Guidelines for Configuring Port Parameters for Modems

Parameter	Recommended Setting
mode	**slave**
dedicated_address	Set to the ip address of the *Sun* host. You can find this by searching (use "grep") the file */etc/host.*
control_lines	Set to **modem_control**.
speed	Set to match the speed of the receiving computer (**19200** or **38400** bps).
type	**dial_in**
term_var	**dial_up**
broadcast_direction	**network**
location	whatever
user_name	whatever

4. When you are finished, use the following command to reset the ports:
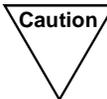
```
command: reset [port number]
```

System response:

```
resetting serial port <number> of annex <your NTS number>
```

5. To quit na, enter the following command:

```
command: quit
```

> **Caution** The following procedure requires the *CentreVu* CMS computer to be rebooted. ***CentreVu* CMS will be down while the system is rebooting, and you will lose *CentreVu* CMS data**.

6. Next you must create a character special device. Do so in the following manner:

   a. At the console terminal, go to the */etc/rc2.d* directory.

   b. Look for a *Speripherals* file. If this file does not exist, create a *Speripherals* file by using an editor such as vi.

```
# vi Speripherals
```

c. Add the following system command to the file. You must add one line per each modem or direct connection. (If the *Speripherals* file already exists, just add the command to it.)

```
rtelnet -fmrt <name of your NTS> 20 /dev/s_pdev220
```

| Note | The 220 in the device name indicates the second NTS and port 20 (as does the parameter 20). You can choose your own names, but the device name should reflect the terminal server and port names.

d. If you used vi to do the above editing, you can exit vi by typing **ZZ** (upper case).

7. Reboot the *CentreVu* CMS computer.

Connecting the *CentreVu* CMS Computer to the Receiving Computer

The port on the *CentreVu* CMS computer is set up for *outgoing data only* during feature installation. The port on the receiving computer must be set up for *incoming data only.*

The receiving computer must be connected to the *CentreVu* CMS computer by an RS-232 connection. This connection uses hardware flow control and runs at 19200 bps or 38400 bps.

The computers can be connected up to 50 feet with RS-232 cabling and connectors. If the two computers cannot be located within 50 feet of each other, limited-distance modems can be used. Contact your account representative for information about modems.

| Note | If you are using a small NTS (8 or 16 ports), you need either a 10-pin or 8-pin straight through connector cable (one end of the cable goes to a port on the small NTS, and other end of the cable goes to the connector; the connector must then attach to a null modem). The connector is an *ANNIXTER* RJ45-DB25 adapter (PEC 69771, Comcode 407361823). |

Setting Up the Receiving Computer

This section contains the requirements for the receiving computer and an explanation of how the call records are transferred.

Consider the following before purchasing or connecting the computer of your choice:

- Processor speed should be as high as practically possible.

- The computer must have uucp capabilities. If your receiving computer is a *UNIX* machine, refer to your *UNIX* documentation to set up uucp. If your receiving computer is an *MS-DOS* computer, see the section "Setting Up uucp Software on an *MS-DOS* Computer."

- The computer must be loaded with software to accept, store, and convert the transferred data.

- Transfer speed must be set to the same speed you choose to use on the *CentreVu* CMS computer (19200 or 38400 bps).

- Certain files (such as System and Devices) and permissions must be set up on the receiving computer. See the documentation that came with the computer for this information.

- Storage capacity should be large enough to meet your needs (based on expected call traffic and the length of time you want to store the data). A **minimum of 20 Mbytes of available space** is required.
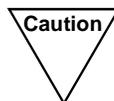
  ▽Caution If the disk on the receiving computer fills up, a message is sent to the *CentreVu* CMS computer and file transfer halts. This condition could cause files to back up in the *CentreVu* CMS computer buffers. If this happens, **you will lose call record data that is waiting to be transferred to the receiving computer** (standard *CentreVu* CMS data is not affected).

  A 189 bytes per record is the capacity needed to store one record in the database. One call record is generated for each *call segment.*

  You can calculate approximately how much storage capacity you need by multiplying the above by the number of records you want to store (based on estimated call traffic and the length of time you want to store the data).

Transferred File Names

The transfer process adds an extension of up to three digits to the call history data file name. Therefore, the file name on the receiving computer is *chrxxxx.x, chrxxxx.xx,* or *chrxxxx.xxx.*

Call Record Transfer

The transferred call history files are placed in the ~/ directory on the receiving computer.

The call history files are sent from *CentreVu* CMS at the end of each interval *or* when a file reaches 20 Mbytes in size. You must set up your receiving application to continously check the ~/ directory for files of the *chrxxxx* format, and then copy these files to your database. The original files in ~/ should then be deleted. If files are not deleted from the ~/ directory after being copied to your database, they will eventually be overwritten.
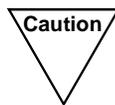
> ▽ **Caution** If the disk on the receiving computer fills up, a message is sent to the *CentreVu* CMS computer and file transfer halts. This condition could cause files to back up in the *CentreVu* CMS computer buffers. If this happens, **you will lose call record data that is waiting to be transferred to the receiving computer** (standard *CentreVu* CMS data is not affected).

If duplicated files are received, refer to the sequence number as previously described in the section "File Header".

Setting Up uucp Software on an MS-DOS Computer

You must provide the uucp software for the receiving computer. The following briefly explains a typical method of setting up uucp software on an *MS-DOS* computer. Refer to your uucp software documentation for more information. (If the receiving computer is a *UNIX* machine, refer to your *UNIX* documentation.)

1. Install the uucp software on the receiving computer by following the installation instructions for the software.

2. Configure the uucp software by following the configuration instructions for the software.

3. Reboot the computer to ensure that no configuration or start-up procedures conflict.

4. Define the site name for the receiving computer. This must match the name that was entered on the *CentreVu* CMS computer for the call history receiving machine during installation of the External Call History Interface feature.

5. Define the *Spool* directory as `C:\uucp`.

6. Define the *Public* directory as `C:\uucp\public`.

7. Define the *UUXQT* path as `C:\bin.`

8. Define the default drive as `C:\.`

9. Define the receiving port as `COM1`.

10. Define the name of the *CentreVu* CMS computer that will be sending data. This needs to be the same as the node name of the *CentreVu* CMS computer. Enter `uname -n,` and press `Return`.

11. Define the nuucp password that will be used by *CentreVu* CMS to log in to the receiving computer and send data. This password must match the nuucp password assigned during the External Call History Interface feature installation.

Testing the Connection and Configuration

Test the connection and configuration by doing the following:

1. Send E-mail from the receiving computer to the *CentreVu* CMS computer.

   a. Enter `mail [cms computer name]!cms,` and press `Return`.

   b. Enter any text. For example, `This is a test from call history receiver to cms,` and press `Return`.

   c. Enter `period (.),` and press `Return`.

2. Send E-mail from the *CentreVu* CMS computer to the receiving computer.

   a. Enter `mail [receiving computer name]!user1,` and press `Return`.

   b. Enter any text. For example, `This is a test from CMS to call history receiver,` and press `Return`.

   c. Enter `period (.),` and press `Return`.

If both machines receive the mail, then the connection is configured and operating properly.

Reading Mail on Either the Receiving or *CentreVu* CMS Computer

To read mail on either computer, enter the following commands from the *UNIX* system:

   a. `mail,` and press `Return`. (to display message)

   b. `?d,` and press `Return`. (to delete message)

   c. `?q,` and press `Return`. (to quit reading mail)