CentreVu® Call Management System
Release 3 Version 8
External Call History Interface

585-210-912
Comcode 108501784
Issue 1
December 1999
to try to correct the interference by one or more of the following measures:

- Where the telephone equipment requires ac power, plug the telephone into a different ac outlet so that the telephone equipment.
- To the extent possible, relocate the receiver with respect to the telephone equipment.
- Reorient the receiving television or radio antenna where this may be done safely.
- To the extent possible, relocate the receiver with respect to the telephone equipment.
- Where the telephone equipment requires ac power, plug the telephone into a different ac outlet so that the telephone equipment and receiver are on different branch circuits.

Part 15: Class A Statement. This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

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- Answered by the called station
- Answered by the attendant
- Answered by the called station
- A call is unanswered
- A busy tone is received
- A reorder tone is received

Canadian Department of Communications (DOC)

Interference Information

This digital apparatus does not exceed the Class A limits for radio noise emissions set out in the radio interference regulations of the Canadian Department of Communications.

Le Présent Appareil Numérique n’émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la class A préscrites dans le reglement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

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- EMC Directive 89/336/EEC
- Low Voltage Directive 73/23/EEC

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**Comments**

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**Acknowledgment**

This document was developed by Lucent Technologies Global Learning Solutions Organization.
# CentreVu® Call Management System
## Release 3 Version 8
### External Call History Interface

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</table>
Introduction

Overview

The External Call History Interface (ECHI) is an optional CentreVu® Call Management System (CMS) feature which allows you to transfer the CentreVu CMS Release 3 Version 8 (R3V8) 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 calls. It allows a much higher volume of call record data to be processed and stored than can be processed and stored on the CMS computer.

NOTE:
If you are upgrading to CentreVu CMS R3V8, any applications associated with the ECHI may have to be rewritten because additional call record database items were added with R3V8 CMS. You need to make sure that the version field (which identifies the CMS version) is correct.

Space Allocation

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).

Call Record File Size

As calls are processed, call records are recorded in a file (one record per call segment) until the file size reaches 20 MB 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 or the designated software (at speeds of up to 38,400 bps if the computers are close) or designated software.

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

Data File Format

This document 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, and so forth, of the data transferred to your computer.
Call Record File Format

Introduction

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 the table in “Record Field Format” on page 3 of this document. 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.)

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.

File Name Format

The call history 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 that the file name on the receiving computer is chrxxxx.x, chrxxxx.xx or chrxxxx.xxx.

File Header

Each call record file has the following header:

<table>
<thead>
<tr>
<th>VERSION</th>
<th>SEQUENCE_NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>(4-byte Integer)</td>
<td>(4-byte Integer)</td>
</tr>
</tbody>
</table>

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 R3V8 software. Therefore, the VERSION field will contain a 5 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).

### Call Record Header

An example of the information contained in a call record header follows. Least significant bytes are stored first and most significant bytes are stored last.

<table>
<thead>
<tr>
<th></th>
<th>VERSION</th>
<th>SEQUENCE_NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decimal</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Binary</td>
<td>00000101 00000000 00000000 00000000</td>
<td>00000001 00000000 00000000 00000000</td>
</tr>
</tbody>
</table>

### Record Field Format

The file header is followed by a file containing a variable number of fixed-length records whose fields appear *in the order shown* in the Field column of the following table (these items are represented by their CMS database equivalents—ECHI does not use CMS database items). 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 call record fields will be populated as “null” or “0” unless the field is measured.

<table>
<thead>
<tr>
<th>Field (CMS Database Equivalent)</th>
<th>Type</th>
<th>Length</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CALLID</td>
<td>integer</td>
<td>4 bytes</td>
<td>A unique number assigned to this call and all its call segments. For conferenced/transferred calls, two (or more) calls are tied together. When the entire call is recorded, one call ID is used to tie together all call segments. In “meet-me” conferences, this may result in a “later” segment of the call starting earlier than the first segment. Call IDs are not necessarily strictly sequential, but will be unique for calls over a day.</td>
</tr>
<tr>
<td>Field (CMS Database Equivalent)</td>
<td>Type</td>
<td>Length</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>-------</td>
<td>--------</td>
<td>-------------</td>
</tr>
<tr>
<td>ACWTIME</td>
<td>integer</td>
<td>4 bytes</td>
<td>The time spent, in seconds, in After Call Work (ACW) associated with this call by the answering agent in this segment.</td>
</tr>
<tr>
<td>ANSHOLDTIME</td>
<td>integer</td>
<td>4 bytes</td>
<td>The total time, in seconds, the call was put on hold by the answering agent in this call segment. In agent-to-agent calls, <strong>ANSHOLDTIME</strong> is accrued for the answering agent if the agent puts the call on hold, but not for the other agent (who continues to accrue talk time). For Generic 2.1 switches, hold time is accrued only for Automatic Call Distribution (ACD) calls. For Generic 2.2 and Generic 3 switches, and <strong>DEFINITY</strong> Enterprise Communications Server (ECS) Release 5 and later, hold time is accrued for any type of call.</td>
</tr>
<tr>
<td>CONSULTTIME</td>
<td>integer</td>
<td>4 bytes</td>
<td>The time an agent talked on any outbound call while in AUX work, ACW, or in Other with a call on hold. This includes the time the originating agent spent talking to the destination party while establishing a conference or transferring a call. (This is the time between presses of the transfer or conference button.) It 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 <strong>DISPTIME</strong> item from <strong>CONSULTTIME</strong>.</td>
</tr>
<tr>
<td>DISPTIME</td>
<td>integer</td>
<td>4 bytes</td>
<td>The wait time (in the vector, in queue, and ringing) until the disposition is recorded in <strong>DISPOSITION</strong> for the segment. For extension calls made directly to agents (not through a VDN), this will always be zero.</td>
</tr>
<tr>
<td>DURATION</td>
<td>integer</td>
<td>4 bytes</td>
<td>The total time the trunk was in use. This is the overall trunk holding time from the beginning of the call 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 (from seized until idle). With a transfer, the original trunk remains associated with both call segments until the call ends.</td>
</tr>
</tbody>
</table>
### CentreVu® CMS R3V8 External Call History Interface

#### Call Record File Format

<table>
<thead>
<tr>
<th>Field (CMS Database Equivalent)</th>
<th>Type</th>
<th>Length</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEGSTART</td>
<td>integer</td>
<td>4 bytes</td>
<td>The UNIX time and date when the call segment started. (UNIX time and date is the number of seconds since midnight, 01/01/70.) Call segments start when CMS receives the first message for the call, since each call segment represents a call. (When an agent transfers or conferences a call, the agent makes another call to bring about the transfer/conference.)</td>
</tr>
<tr>
<td>SEGSTOP</td>
<td>integer</td>
<td>4 bytes</td>
<td>The UNIX time and date when the call segment ended. (UNIX time and date is the number of seconds since midnight, 01/01/70.) A call segment ends when all trunks and agents associated with the call segment have dropped off the call. This means that after call work time for the agent(s) is included when calculating the call segment stop time.</td>
</tr>
<tr>
<td>TALKTIME</td>
<td>integer</td>
<td>4 bytes</td>
<td>The Total talk time for the answering agent in this segment.</td>
</tr>
<tr>
<td>NETINTIME</td>
<td>integer</td>
<td>4 bytes</td>
<td>The time the call spent in a VDN processing at another switch located elsewhere in the network.</td>
</tr>
<tr>
<td>ORIGHOLDTIME</td>
<td>integer</td>
<td>4 bytes</td>
<td>The total time the call was put on hold by the originating agent.</td>
</tr>
<tr>
<td>DISPIVECTOR</td>
<td>integer</td>
<td>2 bytes</td>
<td>The number of the first vector associated with the disposition VDN (DISPVDN).</td>
</tr>
<tr>
<td>DISPSPLIT</td>
<td>integer</td>
<td>2 bytes</td>
<td>The number of the split/skill associated with the call at its disposition in this call segment. Calls that were not queued to a split or skill at the time of disposition will have DISPSPLIT set to null. Calls that were queued to an unmeasured split/skill at the time of disposition will have DISPSPLIT set to zero.</td>
</tr>
<tr>
<td>FIRSTVECTOR</td>
<td>integer</td>
<td>2 bytes</td>
<td>The number of the first vector associated with the first VDN for the call segment. This will be blank if no vector is involved.</td>
</tr>
<tr>
<td>SPLIT1</td>
<td>integer</td>
<td>2 bytes</td>
<td>The first split/skill the call queued to in the first VDN with which it was associated in the call segment.</td>
</tr>
<tr>
<td>Field (CMS Database Equivalent)</td>
<td>Type</td>
<td>Length</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>------</td>
<td>--------</td>
<td>-------------</td>
</tr>
<tr>
<td>SPLIT2</td>
<td>integer</td>
<td>2 bytes</td>
<td>The second split/skill the call was also queued to in the first VDN with which it was associated in the call segment. Applies to Generic 2.2 with Expert Agent Selection (EAS), the ECS, and Generic 3 switches with vectoring only.</td>
</tr>
<tr>
<td>SPLIT3</td>
<td>integer</td>
<td>2 bytes</td>
<td>The third split/skill the call was also queued to in the first VDN with which it was associated in the call segment. Applies to Generic 2.2 with EAS, the ECS, and Generic 3 switches with vectoring only.</td>
</tr>
<tr>
<td>TKGRP</td>
<td>integer</td>
<td>2 bytes</td>
<td>The trunk group number for which data was collected (or for which an exception occurred). This will be null if the trunk group carrying the call is not measured.</td>
</tr>
<tr>
<td>EQ_LOCID</td>
<td>integer</td>
<td>2 bytes</td>
<td>The location ID of the trunk. This ID number is not assigned directly to a trunk, but rather the DEFINITY port network. Therefore, each trunk on the network will have the same location ID number. Valid values are ID numbers from 0 - 44.</td>
</tr>
<tr>
<td>ORIG_LOCID</td>
<td>integer</td>
<td>2 bytes</td>
<td>The location ID of the calling agent. This ID number is not assigned to an agent, but rather to the agent terminal and is associated with the DEFINITY port network ID. An agent may only be associated with a location ID upon login to the ACD. Valid values are ID numbers from 0 - 44.</td>
</tr>
<tr>
<td>ANS_LOCID</td>
<td>integer</td>
<td>2 bytes</td>
<td>The location ID of the answering agent. This ID number is not assigned to an agent, but rather to the agent terminal and is associated with the DEFINITY port network ID. An agent may only be associated with a location ID upon login to the ACD. Valid values are ID numbers from 0 - 44.</td>
</tr>
<tr>
<td>OBS_LOCID</td>
<td>integer</td>
<td>2 bytes</td>
<td>The location ID of the observing agent. This ID number is not assigned to an agent, but rather to the agent terminal and is associated with the DEFINITY port network ID. An agent may only be associated with a location ID upon login to the ACD. Valid values are ID numbers from 0 - 44.</td>
</tr>
<tr>
<td>ASSIST</td>
<td>bit</td>
<td>1 bit</td>
<td>This field indicates whether or not the answering agent in this segment requested supervisor assistance on this call. Valid values for ASSIST are 0=NO, 1=YES.</td>
</tr>
<tr>
<td>AUDIO</td>
<td>bit</td>
<td>1 bit</td>
<td>This field indicates whether or not an agent in this segment reported an audio difficulty problem. Values for AUDIO are 0=NO, 1=YES.</td>
</tr>
<tr>
<td>Field (CMS Database Equivalent)</td>
<td>Type</td>
<td>Length</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>------</td>
<td>--------</td>
<td>-------------</td>
</tr>
<tr>
<td>CONFERENCE</td>
<td>bit</td>
<td>1 bit</td>
<td>This field indicates whether or not the answering agent initiated a conference on this segment. Valid values for CONFERENCE are 0=NO, 1=YES. Available on the ECS, Generic 2.2 and Generic 3 switches.</td>
</tr>
<tr>
<td>DA_QUEUED</td>
<td>bit</td>
<td>1 bit</td>
<td>This field indicates whether or not the call was queued as a direct agent call. Valid values for DA_QUEUED are 0=NO, 1=YES. Applies to the ECS and Generic 3 switches only.</td>
</tr>
<tr>
<td>HOLDABN</td>
<td>bit</td>
<td>1 bit</td>
<td>This field indicates whether or not this call abandoned from hold in this call segment. Valid values for HOLDABN are 0=NO, 1=YES. With the ECS, Generic 2.2, and Generic 3 switches, this applies to all calls the agent put on hold.</td>
</tr>
<tr>
<td>MALICIOUS</td>
<td>bit</td>
<td>1 bit</td>
<td>This field indicates whether or not a malicious call trace was activated for this call segment. Valid values for MALICIOUS are 0=NO, 1=YES. Applies to the ECS, Generic 2, and Generic 3 (except Generic 3i Version 1) switches.</td>
</tr>
<tr>
<td>OBSERVINGCALL</td>
<td>bit</td>
<td>1 bit</td>
<td>This field indicates whether this call represents an agent observing or bridging on to an existing call. Valid values for OBSERVINGCALL are 0=NO, 1=YES.</td>
</tr>
<tr>
<td>TRANSFERRED</td>
<td>bit</td>
<td>1 bit</td>
<td>This field indicates whether or not an answering agent initiated a transfer for this call segment. Valid values are 0=NO, 1=YES. For the ECS, Generic 2.2, and Generic 3 switches, TRANSFERRED includes all calls that are transferred.</td>
</tr>
<tr>
<td>AGT_RELEASED</td>
<td>bit</td>
<td>1 bit</td>
<td>The agent released or dropped the split/skill or direct agent ACD call. This is always true for ACD calls the agent transferred or conferenced. (0=NO, 1=YES). Available on Generic 3 and newer switches.</td>
</tr>
<tr>
<td>ACD</td>
<td>integer</td>
<td>1 byte</td>
<td>The ACD number for which data was collected.</td>
</tr>
</tbody>
</table>
### Call Record File Format

<table>
<thead>
<tr>
<th>Field (CMS Database Equivalent)</th>
<th>Type</th>
<th>Length</th>
<th>Description</th>
</tr>
</thead>
</table>
| DISPOSITION                     | integer | 1 byte | This field represents the call disposition and indicates whether the call in the segment was:  
1=connected (CONN, non-ACD call to a measured agent)  
2=answered (ANS, split/skill or direct agent call answered by an agent)  
3=abandoned (ABAN)  
4=interflowed (IFLOW)  
5=forced busy (FBUSY)  
6=forced disconnect (FDISC)  
7=other (OTHER)  
A connected call is a non-ACD call to a measured agent for which CMS receives an indication that the call was connected. An answered call is any split/skill or direct agent ACD call for which CMS receives an indication that the call was answered by an agent and was not a phantom abandon.  
An abandoned call is any ACD call in which a caller hangs up before receiving an answer from an agent and for which CMS receives notification that the caller abandoned. Phantom abandons (PHANTOMABNS) are included as abandoned calls. Interflowed calls are calls that are interflowed to an off-switch destination.  
Forced busy calls are calls that 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 ECS and G3 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 Generic 2.2, Generic 3 Version 2 and newer Generic 3 switches, and the DEFINITY ECS, forced disconnect calls are VDN calls that are disconnected by the switch due to the execution of a disconnect vector command. |
### Field (CMS Database Equivalent) | Type | Length | Description
--- | --- | --- | ---
DISPOSITION (contd) | integer | 1 byte | For the ECS, and Generic 3 Version 2 and later Generic 3 switches, forced disconnect calls also include calls disconnected because of the vector disconnect timer or because they reached the end of vector processing without being queued. For Generic 3 Version 1 switches, forced disconnect calls are calls that were given a forced disconnect announcement and listening to the entire announcement, then were disconnected by the switch. Other calls include any other calls that do not fall into categories such as answered or abandoned. See definitions for individual tables for OTHERCALLS.

DISPPRIORITY | integer | 1 byte | The priority the call had at its disposition in this segment. Priorities can be 1=NO or 2=YES (without vectoring), or 3=LOW, 4=MED, 5=HIGH, or 6=TOP (with vectoring). If the call never gets queued to a split/skill, the priority will not be set. For the ECS, and Generic 3 switches with vectoring, calls directed to split/skills using “route to” or “messaging split/skill” commands and calls directly routed to splits/skills without going through a vector will have MED (no priority) or HIGH (priority) priority, depending on the class of restriction of the originator of the call (agent, extension, trunk group, or VDN).

HELD | integer | 1 byte | The total number of times this call was placed on hold by the answering agent in this call segment. With agent-to-agent calls, this count is incremented for the agent who puts the call on hold, but not for the calling agent. (For the ECS, Generic 2.2, and Generic 3 switches, this applies to all calls the agent put on hold.)

SEGMENT | integer | 1 byte | The number identifying the call segment. Segment numbers are from 1 up to the number of segments in the call.

ANSREASON | integer | 1 byte | The reason code (0 through 9) associated with the answering agent's mode, if the agent is in the AUX mode. For agents in AUX on switches with releases prior to the ECS or switches that do not have EAS and reason codes active, ANSREASON is always 0.
<table>
<thead>
<tr>
<th>Field (CMS Database Equivalent)</th>
<th>Type</th>
<th>Length</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORIGREASON</td>
<td>integer</td>
<td>1 byte</td>
<td>The reason code (0 through 9) associated with the originating agent’s mode, if the agent is in the AUX mode. For agents in AUX on switches with releases prior to the ECS or switches that do not have EAS and reason codes active, ORIGREASON is always 0.</td>
</tr>
<tr>
<td>DISPSKLEVEL</td>
<td>integer</td>
<td>1 byte</td>
<td>The skill level (1 through 16) associated with the skill for which the agent answered the call or, for calls that abandoned from ringing or from a direct agent queue, with the agent from whom the call abandoned.</td>
</tr>
<tr>
<td>EVENT1-9</td>
<td>integer</td>
<td>1 byte</td>
<td>The number of times each event (stroke count) button (buttons 1 to 9) was entered for this call segment. Available with the ECS, Generic 2, and Generic 3 switches.</td>
</tr>
<tr>
<td>UCID</td>
<td>char</td>
<td>21 bytes</td>
<td>The UCID is the Universal Call Identifier—a unique number assigned to this call segment within the customer network.</td>
</tr>
<tr>
<td>DISPVDN</td>
<td>char</td>
<td>6 bytes</td>
<td>The number of the VDN associated with the call at its disposition for this call segment. DISPVDN will be blank for calls that are not associated with a VDN at their disposition.</td>
</tr>
<tr>
<td>EQLOC</td>
<td>char</td>
<td>10 bytes</td>
<td>The physical equipment location (trunk number) for which data was collected or for which the exception occurred. This will be blank if the trunk is not measured. The value for this field is eight characters followed by two null characters.</td>
</tr>
<tr>
<td>FIRSTVDN</td>
<td>char</td>
<td>6 bytes</td>
<td>The number of the first VDN associated with the call segment. This will be blank for calls not associated with a VDN.</td>
</tr>
<tr>
<td>ORIGLOGIN</td>
<td>char</td>
<td>10 bytes</td>
<td>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.</td>
</tr>
<tr>
<td>ANSLOGIN</td>
<td>char</td>
<td>10 bytes</td>
<td>The login ID of the agent who answered the call in this segment. This field is blank for unmeasured extensions when EAS is not active.</td>
</tr>
<tr>
<td>LASTOBSERVER</td>
<td>char</td>
<td>10 bytes</td>
<td>The login ID of the last agent who service-observed or bridged on to this call.</td>
</tr>
</tbody>
</table>
## Field (CMS Database Equivalent) | Type | Length | Description
--- | --- | --- | ---
DIALED_NUM | char | 25 bytes | The number the caller dialed (up to 24 digits). This will be the VDN for inbound vectoring calls, blank for inbound calls without vectoring, and dialed digits for outbound calls.

CALLING_PTY | char | 13 bytes | The calling party identification, which is the Automatic Number Identification (ANI)/Station Identification (SID) (for Generic 2.2 or Generic 3 Version 4 switches or the ECS with Integrated Services Digital Network (ISDN) ANI delivery), extension or trunk equipment location identifying the originator of the call. This field is blank if the trunk is not measured or, for internal calls, if the originating extension is not measured. (Up to 12 digits in this field.)

LASTDIGITS | char | 17 bytes | The last set of collected digits sent to the CMS by the switch for this call. These are digits the switch sends to CMS when it executes a “collect” vector command. The digits may be digits the caller was prompted to enter, either through the prompting feature on the switch or through network-prompted digits [caller-entered digits (CED)], customer database-provided digits (CDPD from the network), or digits collected through a “converse” vector command. Available on ECS switches.

LASTCWC | char | 17 bytes | The last call work code (up to 16 digits) entered by the answering agent in this segment. This database item applies to Generic 2.2 and Generic 3 switches and the ECS only.

CALLING_II | char | 3 bytes | The Information Indicator (II) digits associated with the call. These digits are a two-digit string provided by ISDN Primary Rate Interface (PRI) to indicate the type of originating line of the caller. These digits supply information about the originator location; for example, payphone, hospital, or prison. The column is blank if the call does not contain II digits. Available on ECS and newer switches.

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Scenario: An inbound vectored call is answered by an ACD agent and is 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. The table in this section 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” command, and then queues to backup Split 2 at low priority via a “backup” command.
3. The call waits 10 seconds, then rings for 5 seconds, and then is answered by agent 5018 in Split 1.
4. The caller and agent talk for 44 seconds. The agent transfers the call to VDN 43712 which points to Vector 37. (The call is held for 4 seconds while transferring.)
5. The agent has 42 seconds of after call work during which the agent enters call work code 12345.

NOTE:

The first column in the following table shows whether the field is part of the header or a record field. See “Record Field Format” on page 3 of this document for the field type (integer, smallint 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 data. This binary data appears in an actual call record file in the order shown in the following table. Spaces are shown between bytes for clarity in the Call Record Entry column.
<table>
<thead>
<tr>
<th>Field</th>
<th>Call Report Entry</th>
<th>Call Record Entry</th>
</tr>
</thead>
<tbody>
<tr>
<td>File Header</td>
<td>VERSION</td>
<td>212</td>
</tr>
<tr>
<td>. SEQUENCE_NUM</td>
<td>1</td>
<td>00000001 00000000 00000000 00000000</td>
</tr>
<tr>
<td>Record Fields</td>
<td>CALLID</td>
<td>212</td>
</tr>
<tr>
<td>. ACWTIME</td>
<td>00:42</td>
<td>00101010 00000000 00000000 00000000</td>
</tr>
<tr>
<td>. ANSHOLDTIME</td>
<td>00:04</td>
<td>00000100 00000000 00000000 00000000</td>
</tr>
<tr>
<td>. CONSULTTIME</td>
<td>00:00</td>
<td>00000000 00000000 00000000 00000000</td>
</tr>
<tr>
<td>. DISPTIME</td>
<td>00:15</td>
<td>00000111 00000000 00000000 00000000</td>
</tr>
<tr>
<td>. DURATION</td>
<td>04:25</td>
<td>00001001 00000001 00000000 00000000</td>
</tr>
<tr>
<td>. SEGSTART</td>
<td>07:37:10 04/16/94</td>
<td>10110110 10111110 01010110 00100110</td>
</tr>
<tr>
<td>. SEGSTOP</td>
<td>07:42:35 04/16/94</td>
<td>10110110 10111110 01010110 11101011</td>
</tr>
<tr>
<td>. TALKTIME</td>
<td>00:44</td>
<td>00101100 00000000 00000000 00000000</td>
</tr>
<tr>
<td>. NETINTIME</td>
<td>98</td>
<td>01100010 00000000 00000000 00000000</td>
</tr>
<tr>
<td>. ORIGHOLDTIME</td>
<td>55</td>
<td>00110111 00000000 00000000 00000000</td>
</tr>
<tr>
<td>. DISPIVECTOR</td>
<td>33</td>
<td>00100001 00000000</td>
</tr>
<tr>
<td>. DISPSPLIT</td>
<td>1</td>
<td>00000001 00000000</td>
</tr>
<tr>
<td>. FIRSTIVECTOR</td>
<td>33</td>
<td>00100001 00000000</td>
</tr>
<tr>
<td>. SPLIT1</td>
<td>1</td>
<td>00000001 00000000</td>
</tr>
<tr>
<td>. SPLIT2</td>
<td>2</td>
<td>00000010 00000000</td>
</tr>
<tr>
<td>. SPLIT3</td>
<td>0</td>
<td>00000000 00000000</td>
</tr>
<tr>
<td>. TKGRP</td>
<td>32</td>
<td>00100000 00000000</td>
</tr>
<tr>
<td>. EQ_LOCID</td>
<td>33</td>
<td>00100001 00000000</td>
</tr>
<tr>
<td>. ORIG_LOCID</td>
<td>13</td>
<td>00001101 00000000</td>
</tr>
<tr>
<td>. ANS_LOCID</td>
<td>23</td>
<td>00010111 00000000</td>
</tr>
<tr>
<td>. OBS_LOCID</td>
<td>42</td>
<td>00101010 00000000</td>
</tr>
<tr>
<td>. ASSIST</td>
<td>N</td>
<td>0</td>
</tr>
<tr>
<td>Field</td>
<td>Call Report Entry</td>
<td>Call Record Entry</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>AUDIO</td>
<td>N</td>
<td>0</td>
</tr>
<tr>
<td>CONFERENCE</td>
<td>N</td>
<td>0</td>
</tr>
<tr>
<td>DA_QUEUED</td>
<td>N</td>
<td>0</td>
</tr>
<tr>
<td>HOLDABN</td>
<td>N</td>
<td>0</td>
</tr>
<tr>
<td>MALICIOUS</td>
<td>N</td>
<td>0</td>
</tr>
<tr>
<td>OBSERVINGCALL</td>
<td>N</td>
<td>0</td>
</tr>
<tr>
<td>TRANSFERRED</td>
<td>Y</td>
<td>1</td>
</tr>
<tr>
<td>AGT_RELEASED</td>
<td>Y</td>
<td>1</td>
</tr>
<tr>
<td>ACD</td>
<td>1</td>
<td>00000001</td>
</tr>
<tr>
<td>DISPOSITION</td>
<td>Ans</td>
<td>00000010</td>
</tr>
<tr>
<td>DISPPRIORITY</td>
<td>4 (MED)</td>
<td>00000100</td>
</tr>
<tr>
<td>HELD</td>
<td>1</td>
<td>00000001</td>
</tr>
<tr>
<td>SEGMENT</td>
<td>1</td>
<td>00000001</td>
</tr>
<tr>
<td>ANSREASON</td>
<td>0</td>
<td>00000000</td>
</tr>
<tr>
<td>ORIGREASON</td>
<td>0</td>
<td>00000000</td>
</tr>
<tr>
<td>DISPSKLEVEL</td>
<td>0</td>
<td>00000000</td>
</tr>
<tr>
<td>EVENT1-9</td>
<td>0</td>
<td>00000000 00000000 00000000 00000000 00000000 00000000 00000000</td>
</tr>
<tr>
<td>UCID</td>
<td>00063000890885813486</td>
<td>00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000</td>
</tr>
<tr>
<td>DISPVDN</td>
<td>43211</td>
<td>00110100 00110011 00110010 00110001 00110001 00110000 00110000</td>
</tr>
<tr>
<td>EQLOC</td>
<td>0101A01</td>
<td>00110000 00110001 00110000 00110001 01000001 00110000 00110001 00110000 00000000 00000000</td>
</tr>
<tr>
<td>Field</td>
<td>Call Report Entry</td>
<td>Call Record Entry</td>
</tr>
<tr>
<td>------------------</td>
<td>-------------------</td>
<td>-----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>. FIRSTVDN</td>
<td>43211</td>
<td>00110100 00110011 00110010 00110001 00110001 00000000 00000000 00000000 00000000 00000000</td>
</tr>
<tr>
<td>. ORIGLOGIN</td>
<td>0</td>
<td>00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000</td>
</tr>
<tr>
<td>. ANSLOGIN</td>
<td>5018</td>
<td>00110101 00110000 00110001 00110000 00000000 00000000 00000000 00000000 00000000</td>
</tr>
<tr>
<td>. LASTOBSERVER</td>
<td>0</td>
<td>00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000</td>
</tr>
<tr>
<td>. DIALED_NUM</td>
<td>43211</td>
<td>00110100 00110011 00110010 00110001 00110001 00000000 00000000 00000000 00000000</td>
</tr>
<tr>
<td>. CALLING_PTY</td>
<td>0101A0102</td>
<td>(eqloc for Generic 3 V3 and earlier) ANI for Generic 2.2, Generic 3 V4, and the ECS</td>
</tr>
<tr>
<td>. LASTDIGITS</td>
<td>1</td>
<td>00000001 00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000</td>
</tr>
<tr>
<td>. LASTCWC</td>
<td>12345</td>
<td>00110001 00110010 00110011 00110100 00110101 00000000 00000000 00000000 00000000</td>
</tr>
<tr>
<td>. CALLING_II</td>
<td>0</td>
<td>00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000</td>
</tr>
</tbody>
</table>
Second Call Segment and Call Record

The scenario continues with the second call segment of the inbound vectored call being transferred to a VDN. The call was transferred by agent 5018 to a VDN. The following table 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. The caller is transferred to VDN 43712 which points to Vector 37.
2. The call is queued to Splits 4 and 5 at high priority using a “queue to” step to queue to Split 4, and a “check” step to queue to Split 5.
3. The call waits 1 second and then rings for 2 seconds before being answered by agent 2139 in Split 5.
4. The caller and agent talk for 3 minutes, 19 seconds, and then the agent releases the call.
5. The 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:**

The first column in the following table shows that all fields in this record are record fields. See “Record Field Format” on page 3 of this document for the field type (integer, smallint or character), length, and 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 data. This binary data appears in an actual call record file in the order shown in the following table. Spaces are shown between bytes for clarity in the Call Record Entry column.

<table>
<thead>
<tr>
<th>Field</th>
<th>Call Report Entry</th>
<th>Call Record Entry</th>
</tr>
</thead>
<tbody>
<tr>
<td>CALLID</td>
<td>212</td>
<td>11010100 00000000 00000000 00000000</td>
</tr>
<tr>
<td>ACWTIME</td>
<td>01:00</td>
<td>00111100 00000000 00000000 00000000</td>
</tr>
<tr>
<td>ANSHOLDTIME</td>
<td>00:00</td>
<td>00000000 00000000 00000000 00000000</td>
</tr>
<tr>
<td>CONSULTTIME</td>
<td>00:00</td>
<td>00000000 00000000 00000000 00000000</td>
</tr>
<tr>
<td>DISPTIME</td>
<td>00:03</td>
<td>00000011 00000000 00000000 00000000</td>
</tr>
<tr>
<td>DURATION</td>
<td>03:22</td>
<td>11001010 00000000 00000000 00000000</td>
</tr>
<tr>
<td>Field</td>
<td>Call Report Entry</td>
<td>Call Record Entry</td>
</tr>
<tr>
<td>--------------------</td>
<td>-------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>Record Fields</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SEGSTART</td>
<td>07:38:13 04/16/94</td>
<td>10110110 10111110 01010111 00100101</td>
</tr>
<tr>
<td>SEGSTOP</td>
<td>07:42:35 04/16/94</td>
<td>10110110 10111110 01011010 11101011</td>
</tr>
<tr>
<td>TALKTIME</td>
<td>03:19</td>
<td>11000111 00000000 00000000 00000000</td>
</tr>
<tr>
<td>NETINTIME</td>
<td>98</td>
<td>01100010 00000000 00000000 00000000</td>
</tr>
<tr>
<td>ORIGHOLDTIME</td>
<td>55</td>
<td>00110111 00000000 00000000 00000000</td>
</tr>
<tr>
<td>DISPIVECTOR</td>
<td>37</td>
<td>00100101 00000000</td>
</tr>
<tr>
<td>DISPSPLIT</td>
<td>5</td>
<td>00000101 00000000</td>
</tr>
<tr>
<td>FIRSTIVECTOR</td>
<td>37</td>
<td>00100101 00000000</td>
</tr>
<tr>
<td>SPLIT1</td>
<td>4</td>
<td>00000100 00000000</td>
</tr>
<tr>
<td>SPLIT2</td>
<td>5</td>
<td>00000101 00000000</td>
</tr>
<tr>
<td>SPLIT3</td>
<td>0</td>
<td>00000000 00000000</td>
</tr>
<tr>
<td>TKGRP</td>
<td>32</td>
<td>00100000 00000000</td>
</tr>
<tr>
<td>EQ_LOCID</td>
<td>33</td>
<td>00100001 00000000</td>
</tr>
<tr>
<td>ORIG_LOCID</td>
<td>23</td>
<td>00010111 00000000</td>
</tr>
<tr>
<td>ANS_LOCID</td>
<td>23</td>
<td>00010111 00000000</td>
</tr>
<tr>
<td>OBS_LOCID</td>
<td>42</td>
<td>00101010 00000000</td>
</tr>
<tr>
<td>ASSIST</td>
<td>N</td>
<td>0</td>
</tr>
<tr>
<td>AUDIO</td>
<td>N</td>
<td>0</td>
</tr>
<tr>
<td>CONFERENCE</td>
<td>N</td>
<td>0</td>
</tr>
<tr>
<td>DA_QUEUED</td>
<td>N</td>
<td>0</td>
</tr>
<tr>
<td>HOLDABN</td>
<td>N</td>
<td>0</td>
</tr>
<tr>
<td>MALICIOUS</td>
<td>N</td>
<td>0</td>
</tr>
<tr>
<td>OBSERVINGCALL</td>
<td>N</td>
<td>0</td>
</tr>
<tr>
<td>TRANSFERRED</td>
<td>N</td>
<td>0</td>
</tr>
<tr>
<td>AGT_RELEASED</td>
<td>Y</td>
<td>1</td>
</tr>
<tr>
<td>ACD</td>
<td>1</td>
<td>00000001</td>
</tr>
<tr>
<td>DISPOSITION</td>
<td>Ans</td>
<td>00000010</td>
</tr>
<tr>
<td>Field</td>
<td>Record Fields</td>
<td>Call Report Entry</td>
</tr>
<tr>
<td>---------------</td>
<td>---------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>DISPPRIORITY</td>
<td>5 (HIGH)</td>
<td>000000100</td>
</tr>
<tr>
<td>HELD</td>
<td>0</td>
<td>000000000</td>
</tr>
<tr>
<td>SEGMENT</td>
<td>2</td>
<td>000000010</td>
</tr>
<tr>
<td>ANSREASON</td>
<td>1</td>
<td>000000001</td>
</tr>
<tr>
<td>ORIGREASON</td>
<td>9</td>
<td>00001001</td>
</tr>
<tr>
<td>DISPSKLEVEL</td>
<td>0</td>
<td>000000000</td>
</tr>
<tr>
<td>EVENT1-9</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>UCID</td>
<td>00063000890</td>
<td>000000000 0000000 0000000 00000000 00000110 00000001 00000000 00000000 00001000 00001001 00000000 00001000 00001001 00001000 00000001 00000001 00000011 00000100 00001000 00000110 00000000</td>
</tr>
<tr>
<td>DISPVDN</td>
<td>43712</td>
<td>00110100 00110011 00110111 00110001 00110010 00000000</td>
</tr>
<tr>
<td>EQLOC</td>
<td>0101A01</td>
<td>00110000 00110001 00110000 00110001 01000001 00110000 00110001 00110000 00000000 00000000</td>
</tr>
<tr>
<td>FIRSTVDN</td>
<td>43712</td>
<td>00110100 00110011 00110111 00110001 00110010 00000000</td>
</tr>
<tr>
<td>ORIGLOGIN</td>
<td>5018</td>
<td>00110101 00110000 00110001 00110000 00000000 00000000 00000000 00000000 00000000 00000000</td>
</tr>
<tr>
<td>ANSLOGIN</td>
<td>2139</td>
<td>00110010 00110001 00110011 00111001 00000000 00000000 00000000 00000000 00000000 00000000</td>
</tr>
<tr>
<td>LASTOBSERVER</td>
<td>0</td>
<td>00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000</td>
</tr>
<tr>
<td>Field</td>
<td>Call Report Entry</td>
<td>Call Record Entry</td>
</tr>
<tr>
<td>---------------</td>
<td>-------------------</td>
<td>-----------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| DIALED_NUM    | 43712             | 00110100 00110011 00110111 00110001
|               |                   | 00110010 00000000 00000000 00000000 00000000
|               |                   | 00000000 00000000 00000000 00000000 00000000
|               |                   | 00000000 00000000 00000000 00000000 00000000
|               |                   | 00000000 00000000 00000000 00000000 00000000
|               |                   | 00000000 00000000 00000000 00000000 00000000
| CALLING_PTY   | 0101A0102 (eqloc for Generic 3 V3 and earlier) ANI for Generic 2.2, Generic 3 V4, and the ECS | 00110000 00110001 00110000 00110001
|               |                   | 01000001 00110000 00110001 00110000 00110010 00000000 00000000 00000000
|               |                   | 00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 |
| LASTDIGITS    | 0                 | 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 00000000
| CALLING_II    | 0                 | 00000000 00000000 00000000 00000000 |

Field Call Report Entry
Field Call Record Entry
Record Fields

Field Call Report Entry
Field Call Record Entry
Setup Information

Introduction

This section describes External Call History Interface installation, connecting the CentreVu CMS computer to the receiving computer, and selecting and setting up the receiving computer.

Customer Responsibilities

You must perform the following steps to be able to transfer call history data.

- Purchase the External Call History Interface package.
- Contact the Technical Service Center (TSC) to authorize the feature. (If you are an international customer, contact your Lucent Technologies representative).
- 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 applications that will:
  - Allow the receiving computer to receive data via uucp or another file transfer utility of your choosing.
  - 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.

Installing the External Call History Interface Feature

The following procedure describes installing and setting up the External Call History Interface on a Sun server/computer.

You must install the External Call History Interface feature after it has been purchased and authorized.

⚠️ 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. CentreVu

*Sun is a registered trademark of Sun Microsystems, Inc.
Explorer is an optional package that will allow you to view external call history data. Contact your Lucent Technologies representative for more information.

Ports

At installation, the ECHI feature will automatically select the port it will use if your CentreVu CMS computer is a Sun computer/server.

For further information on setting up ports, see “Assigning Ports on the Sun Computer” section of this manual.

Installation Procedure

To install the External Call History feature package, perform the following procedure.

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.
The system responds as follows:

<table>
<thead>
<tr>
<th>Capability/Capacity</th>
<th>Authorization</th>
</tr>
</thead>
<tbody>
<tr>
<td>vectoring</td>
<td>authorized</td>
</tr>
<tr>
<td>forecasting</td>
<td>authorized</td>
</tr>
<tr>
<td>graphics</td>
<td>not authorized</td>
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<td>external application</td>
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<tr>
<td>Maximum number of agents</td>
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<tr>
<td>Maximum number of ACDs</td>
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<tr>
<td>Simultaneous CentreVu (R) Supervisor logins s</td>
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</table>

NOTE:

If External Call History is not authorized but needs to be, call the Lucent Technologies National Customer Care Center at 1-800-242-2121. International customers please contact your local Lucent distributor or representative.

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.
5. Enter 7.

The system responds as follows:

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.

The system responds as follows:

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

CentreVu CMS turns off and the following information displays on the screen:

*** CMS is now off ***

7. Access the CentreVu CMS Administration menu by entering cmsadm.
The CentreVu CMS Administration menu displays.

CentreVu(R) 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) pkg_install Install a feature package
5) pkg_remove Remove a feature package
6) run_pkg Turn a feature package on or off
7) run_cms Turn CentreVu (R) CMS on or off
8) port_adm Administer Modems, Terminals, and Printers

Enter choice (1-9) or q to quit:

The CMS Features that can be installed are

1) forecasting
2) external call history

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

8. Enter 4 to select the pkg_install option.

The system responds as follows:

The CMS Features that can be installed are

1) forecasting
2) external call history

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

\[\text{ NOTE:}\]

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. (The number depends upon what has been installed.)

The system responds as follows:

Enter the name of the computer to which to send call records (up to 256 characters):
10. Enter the name of the receiving computer.

The system responds as follows:

Enter the full path of the program to transfer call history files (default: /cms/dc/chr/uucp_copy):

![NOTE:]

Currently, CMS uses uucp to transfer external call history files to a designated remote machine and uustat to check that the files were transferred successfully. You may optionally change these default programs to be customer-specified file transfer and check programs such as Transmission Control Protocol/Internet Protocol (TCP/IP), or the UNIX commands remote copy (rcp) or copy (cp) using a remote file system (RFS), by entering a different full file path instead of the default uucp/uustat interface path.

11. Enter the full path of the default file transfer utility (/cms/dc/chr/uucp_copy) or optionally enter the full path of your specific file transfer program.

The system responds as follows:

Enter the full path of the program to check the external call history file transmission (default: /cms/dc/chr/uucp_check):

12. Enter the full path of the default file transmission check program (/cms/dc/chr/uucp_check), or optionally enter the full path of your specific transmission checking program.

![NOTE:]

If you have chosen to enter your own file transfer and transmission checking programs, continue with step 16, entering the number of call records in the buffer.

If you have chosen the CMS defaults, continue with the following step.
The system responds as follows:

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

13. Enter the nuucp password for the receiving computer.

The system responds as follows:

Enter CMS port for connection to xxxxxxxx (s-pdevxxx):

14. Enter the port on the CentreVu CMS computer to be used by the receiving computer. (For a Sun computer, s_pdevxxx will display instead.)

The system responds as follows:

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

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

The system responds as follows:

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

16. 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 MB). This step reserves disk space; therefore, sufficient disk space must be available.
NOTE:

The range (0-99999) specified in the prompt represents the total allowed over all ACDs. If you expend the entire allotment on ACD 1, you will have no more space available to other ACDs.

CAUTION:

You will lose external call record data if all 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.

If you want to change the buffer size you need to change the Number of call records field in the System Setup: Data Storage Allocation window. (See Data Storage Allocation in Chapter 8, “System Setup,” in the CentreVu® CMS Administration document (585-210-910) for more information).

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

NOTE:

Repeat Step 16 for each administered ACD.

The system responds as follows:

Start ECH in the on or off state: (default off)

17. Select whether ECH will start in the on or off state (default is off).
The system responds as follows:

Computing space requirements and file system space availability.

External Call History package installed

18. 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>

19. You can now turn CentreVu CMS back on. Enter `cmsadm`.

The CMS Administration menu will display as follows:

```
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) pkg_install Install a feature package
5) pkg_remove Remove a feature package
6) run_pkg Turn a feature package on or off
7) run_cms Turn CentreVu (R) CMS on or off
8) port_adm Administer, Modems, Terminals, and Printers
Enter choice (1-9) or q to quit:
```
20. Enter 7.

The system responds as follows:

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

21. Enter 1 to turn CentreVu CMS on.

The system responds as follows:

Please wait for initialization

When CentreVu CMS comes up, the following information displays:

*** CMS is now up ***
In a CMS High Availability environment, the installed ECHI package may be turned on or off while CMS is running or not. Use the following procedure.

**NOTE:**
When ECHI is off, records are still being collected in files, except that the files are not sent to the receiving computer. The purpose for this is because the receiving computer can only receive files from one machine at a time.

1. First access the *CentreVu* CMS Administration menu by entering `cmsadm`.

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

   ```plaintext
   CentreVu(R) 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 File system backup
   4) pkg_install Install a feature package
   5) pkg_remove Remove a feature package
   6) run_pkg Turn a feature package on or off
   7) run_cms Turn CentreVu (R) CMS on or off
   8) port_adm Administer, Modems, Terminals, and Printers
   Enter choice (1-8) or q to quit:
   ```

2. Enter 6 to run the ECHI program.

   The system responds with the following:

   The CMS features that can be run are

   ```plaintext
   1. external call history
   Enter choice (1-1) or q to quit
   ```

3. Enter 1 for External Call History Interface.
The system responds by listing the package status (on or off) and asking if you would like to turn it on or off:

4. Enter on or off, depending on what you want to do with the package. If you turn ECHI on, the system responds as follows:

Do you wish to send the full call record buffer?

5. Enter yes or no.

**CMS is Not Running**

If CMS is not running and if ECHI is off, the system responds as follows:

External Call History is off.
Do you wish to turn it on? (default: yes)

Select **Return** to turn ECHI on. The system responds as follows:

External Call History package turned on successfully
CMS is Running and ECHI is Off

If CMS is running and if ECHI is off, the system responds as follows:

External Call History is off.
   Do you wish to turn it on? (default: yes)

Select Return to turn ECHI on. The system responds as follows:

Do you wish to transmit the full buffer of call records?:
   (default: yes)

Select Return. The system responds as follows:

External Call History package turned on successfully

CMS is Either Running or Not Running and ECHI is On

If CMS is either running or not running and if ECHI is on, the system responds as follows:

External Call History is on.
   Do you wish to turn it off? (default: yes)

Select Return to turn ECHI off. The system responds as follows:

External Call History package turned off successfully
Assigning Ports on the Sun Computer

If your CentreVu CMS computer is a Sun server/computer, you must install the previously described feature, and then either set the Network Terminal Server (NTS) port connections, or use a Multiport card.

Use the Network Administrator (na) program to address and configure the NTS ports.

To set the NTS port connections, perform the following procedure.

NOTE:

You must log in as root at the console terminal.

1. At the system prompt, enter `na` to access the NTS administration software as shown below:

```
# na
```

The system responds as follows:

```
command:
```

2. To associate all subsequent administration with a specific NTS, enter `annex <name of your NTS>` at the command prompt as shown below:

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

*Multiport is a registered trademark of Aurora Technologies, Inc.*
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.

The system responds as follows:

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

command:
```

3. Perform one of the following depending upon whether you have a direct connection or 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.

```
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
```

You must include all the parameters you want to change. 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 the following table for other values.
Be sure to set the location and user_name (and keep them populated) so that any problems can be traced to the correct port.

### 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 | <your location>
user_name | <your user name>

You can break down either of these commands to make the entry easier. For example, for the direct connection, you could perform the following steps.

1. Type `set port=x mode slave speed <value>`.
2. Press RETURN.
3. Type `set port=x type hardwired location <value>`.
4. Press RETURN.
5. Continue until the entire command is entered.
4. When you are finished, use the following command to reset the ports:

```
command: reset [port number]
```

The system responds as follows:

```
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. 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).

6. 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.

**Cabling**

The computers can be connected up to a distance of 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 the other end of the cable goes to the connector. The connector must then attach to a null modem.
Selecting and Setting Up the Receiving Computer

This section contains the receiving computer requirements. This section also explains how call records are transferred.

Consider the following points before purchasing or connecting the receiving computer:

- Processor speed should be as high as practically possible.
- The computer must have file transfer capabilities (the default is uucp, but you may choose another file transfer utility). If your receiving computer is a UNIX machine, refer to your UNIX documentation to set up uucp. If your receiving computer is a Windows* computer, see the section “Setting Up uucp Software on a Windows Computer” in this document.
- If you are also using CentreVu Explorer, you must use uucp as the file transfer utility. Select the default settings when installing ECHI.
- The computer must be loaded with software in order 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 MB 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 files back up, the call record data that has already been collected up to that moment will eventually be transferred to the receiving computer, but no new data will be collected. (Standard CentreVu CMS data is not affected.)

*Windows is a registered trademark of Microsoft, Inc.
The capacity needed to store one record in the database is 233 bytes per record. One call record is generated for each call segment.

Multiply 233 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) to calculate approximately how much storage capacity you need.

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. (The `~`/ directory is the default uucp directory that you can administer 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 MB in size. You must set up your receiving application to continuously 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 files back up, the call record data that has already been collected up to that moment will eventually be transferred to the receiving computer, but no new data will be collected. (Standard CentreVu CMS data is not affected.)

The purpose of the sequence numbers is to be able to detect duplicate files. If you receive two files with the same sequence number, those files are duplicates. If duplicated files are received, refer to the sequence number as previously described in the "File Header" section.
Setting Up uucp Software on a Windows Computer

You must provide the uucp software for the receiving computer. During setup, the site names (which may be identified by other terms such as node names or host names) must match for configuration on both machines. For assistance, call the Lucent Technologies National Customer Care Center at 1-800-242-2121. International customers may contact your local Lucent distributor or representative.

**NOTE:**

The following steps briefly describe a typical method of setting up uucp software on a Windows computer. Specific details will vary from machine to machine. 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 verify that no configuration or startup 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 feature.

5. Define the Spool directory as \ucp.

6. Define the Public directory as \ucp\public.

7. Define the UUXQT path as \bin.

8. Define the default drive as \.

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. Type `uname -n`, and press Return on the CentreVu CMS at the UNIX prompt and run the name.

**NOTE:**

For the following step, the login ID is nuucp. The password is that which was created during the feature installation.

---

*Windows is a registered trademark of Microsoft, Inc.*
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.

The software is now set up. Use the following section to test the setup.

**Testing the Connection and Configuration**

Test the connection and configuration by performing the following procedure.

1. Send e-mail from the receiving computer to the CentreVu CMS computer.
   a. Type `mail [cms computer name]!cms,` and press Return.
   b. Type any text. For example, `This is a test from call history receiver to cms,` and press Return.
   c. Type a period (.), and press Return.

2. Send e-mail from the CentreVu CMS computer to the receiving computer.
   a. Type `mail [receiving computer name]!user1,` and press Return.
   b. Type any text. For example, `This is a test from CMS to call history receiver,` and press Return.
   c. Type a period (.), and press Return.

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

NOTE:

The *UNIX* command `uutry <machine name>` will test the machine and provide a log of actions for tracing problems.

**Reading Mail on *UNIX* Computers**

To read mail on *UNIX* computers, perform the following steps.

1. Type `mail` and press Return. to display the message.
2. Type `?d` and press Return. to delete the message.
3. Type `?q` and press Return. to quit reading mail.
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Lucent Technologies welcomes your feedback on this document. Your comments are of great value in helping us to improve our documentation.

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- Improve the overview/introduction
- Improve the table of contents
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- Include more figures
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- Add more troubleshooting information
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