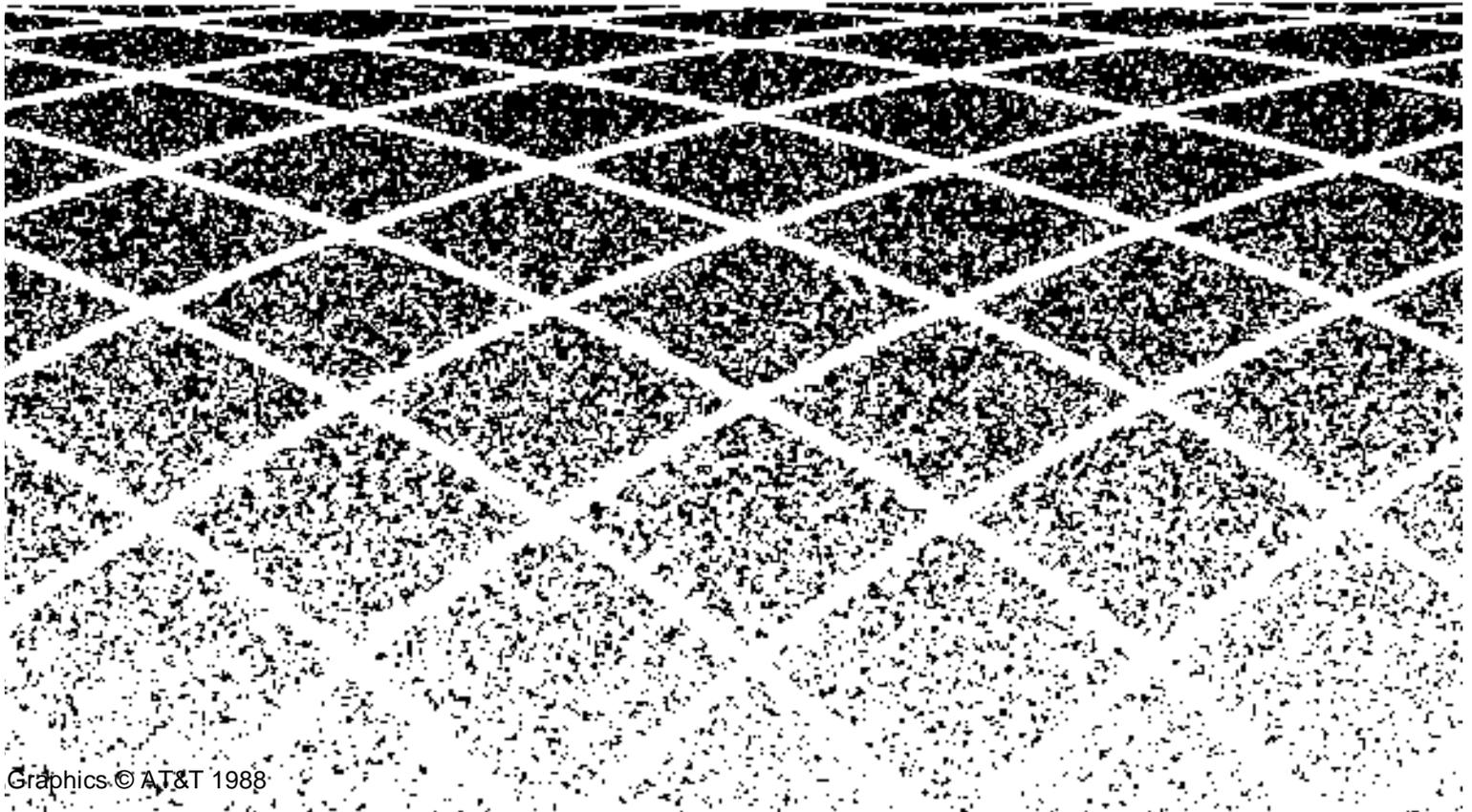




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# Call Management System Release 3 Version 2 Custom Reports





# Call Management System

## Release 3 Version 2

### Custom Reports

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## General Information

A custom report is a report that you create and design using the Custom Reports subsystem. Like standard CMS reports, a custom report displays information about Automatic Call Distribution (ACD) activity in your call center. For a custom report, you determine what specific ACD information is displayed and how it is displayed.

Like standard reports, custom reports fall into two categories: real-time and historical. A single custom report can contain either real-time data or historical data, but **not** both.

Also, you run a custom report via the `Custom Reports Main Menu` option, **not** via the `Reports` option.

---

## Reports that Cannot be Customized

The following reports **cannot** be customized *on any type of CMS*:

- Real-time: Multi-ACD report
- Historical: Split/Skill: Status
- Historical: VDN: Status
- Historical: System: Multi-ACD by Split/Skill (daily, weekly, monthly)
- Historical: Trunk Group: Busy Hour
- Historical: VDN: Busy Hour

## Custom Report Design Options

You design your custom reports on a window called the Screen Painter. The Screen Painter is a powerful tool that gives you the following design options:

- Copying existing report designs, including standard report designs. You can then modify the design you copied.
- Defining ACD data for report fields.
- Defining ACD data for bar graphs.



You must have purchased the CMS Graphics feature to include bar graphs in a custom report.

- Arranging report fields and bars the way you want them.
- Entering text for field labels, column headers, row headers, or special instructions.
- Emphasizing or de-emphasizing text and fields with a variety of highlighting options.
- Editing report designs using block moves, copies, and deletions.
- Defining stationary (no-scroll) areas.

In addition, the historical part of the Custom Reports subsystem taps many of the capabilities of INFORMIX<sup>\*</sup> Relational Database Query Language (RDSQL). Therefore, Custom Reports offers additional advanced design options for historical reports, such as:

- Merging data in a report field to include data from different ACD entities (for example, defining a field that represents the percentage of calls an agent answered when compared to all calls handled by that agent's split or skill).
- Merging data in a report field to include data with different time frames (for example, defining a field that represents the percentage of calls answered in an intrahour interval when compared to all calls answered in the day).

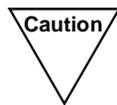


You can not, however, merge real-time data with historical data.

- Including data from custom data tables that you create and populate within the CMS database.

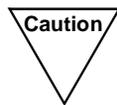
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\*INFORMIX is a registered trademark of Informix Software, Inc.



CMS does not automatically check the database for disk space used by data in custom tables. As a result, you can inadvertently fill up your disk with custom data. When this happens, you can lose or damage custom data and ACD data. Therefore, if you create custom data tables, be careful to check the amount of disk space available from time to time.

See AT&T585-215-521, *CMS Administration* for more information about disk storage.



Also, **do not** tamper with standard ACD data in the CMS database. Though you can access the data and change it via INFORMIX, doing so can cause you to lose data.

Both the basic and advanced options are described in detail in later chapters of this document.

# How CMS Stores and Retrieves Data

The most important and difficult part of designing a custom report is defining the data that goes in the report. To define custom report data, you must first understand how CMS stores and retrieves data.

## How CMS Stores Data

CMS stores data in the CMS database. The database is divided into 52 different tables. A **table** is an array of columns and rows that stores data for a type of ACD element (split/skill, agent, trunk, trunk group, VDN, vector, call work code, forecasting, agent trace, call records, or exceptions) and for a specific time frame (for the current intrahour interval, for past intrahour intervals, for past days — summarized by day, and so on). Figure 1-1 shows how a small piece of a table (the Current Interval Agent table, in this case) might look in the database.

ACD	LOGID	SPLIT	EXTENSION	WORKMODE*	ACDCALLS	ACDTIME
1	1001	1	3201	1	21	988
1	1002	1	4440	1	19	777
1	1003	1	3002	2	15	400
1	1004	1	3003	2	9	58
1	1005	1	4003	2	11	644
<b>1</b>	<b>1006</b>	<b>1</b>	<b>5671</b>	<b>4</b>	<b>20</b>	<b>245</b>
1	1007	5	7835	3	7	851
1	1008	1	6666	3	18	603
1	1010	1	3241	1	18	203
1	2001	2	7762	4	13	789
1	2002	5	5642	2	14	549
1	2003	2	2221	2	10	402
1	2004	2	2242	4	19	452
1	2005	2	2287	1	21	616
1	2006	2	3982	3	19	569
1	2007	2	6543	2	15	745
1	2008	2	2345	2	9	109
1	2009	5	2022	2	11	367
1	2010	2	4323	4	20	322
1	3001	3	7655	1	7	188
1	3002	3	3425	1	18	704
1	3003	3	4563	1	18	256
1	3004	5	8885	2	13	980
1	3005	3	5544	2	14	589
1	3006	3	3789	2	10	340
1	3007	3	8675	2	19	299
1	3008	6	3009	1	21	688
1	3009	3	4477	2	19	901

\* The numeric values for WORKMODE represent agent states that appear in reports. For example, 1 = AVAIL, 2 = ACD, 3 = ACW, and 4 = AUX.

Figure 1-1: Sample CMS Table (Current Interval Agent Table)

**Note** The example in Figure 1-1 shows data for the current intrahour interval for agents 1001 to 3009. Because data in this table is in real time, data changes second by second. Therefore, the example represents a snapshot (or the most recent update) of the table.

Figure 1-2 shows how a small piece of the Historical Intrahour Interval Split table looks.

ROWDATE	STARTTIME	ACD	SPLIT	ACDCALLS	ABANDONS	ACDTIME	ABNTIME	
070193	0800	1	1	443	48	36898	988	...
070193	0800	1	2	234	37	20012	777	...
070193	0800	1	3	111	20	13111	400	...
070193	0900	1	1	652	59	53442	1058	...
070193	0900	1	2	451	32	27635	644	...
070193	0900	1	3	93	11	15321	245	...
<b>070193</b>	<b>1000</b>	<b>1</b>	<b>1</b>	<b>509</b>	<b>43</b>	<b>35401</b>	<b>851</b>	...
070193	1000	1	2	391	31	19768	603	...
070193	1000	1	3	142	10	9786	203	...
070193	1100	1	1	480	39	33389	789	...
070193	1100	1	2	491	22	26789	549	...
070193	1100	1	3	297	15	12530	402	...
070293	0800	1	1	399	36	37651	1452	...
070293	0800	1	2	299	20	29602	7616	...
070293	0800	1	3	138	13	11523	2569	...
070293	0900	1	1	400	46	36178	1745	...
070293	0900	1	2	300	33	24303	1109	...
070293	0900	1	3	225	12	15628	367	...
070293	1000	1	1	394	40	40002	1322	...
070293	1000	1	2	323	34	29881	1188	...
070293	1000	1	3	105	14	12115	704	...
070293	1100	1	1	418	41	34819	1256	...
070293	1100	1	2	246	30	21173	980	...
070293	1100	1	3	100	18	10281	589	...
070393	0800	1	1	417	34	37856	1340	...
070393	0800	1	2	247	24	26308	1299	...
070393	0800	1	3	141	14	12567	688	...
070393	0900	1	1	444	43	39003	1001	...
070393	0900	1	2	301	31	27034	809	...
070393	0900	1	3	206	8	14230	445	...
070393	1000	1	1	420	51	39045	1733	...
070393	1000	1	2	299	39	29562	1303	...
070393	1000	1	3	198	24	12400	899	...
070393	1100	1	1	403	50	30990	1812	...
070393	1100	1	2	320	31	25410	904	...
070393	1100	1	3	99	21	10222	587	...

Figure 1-2: Sample CMS Table (Historical Intrahour Interval Split Table)

**Note** The example in Figure 1-2 shows data from July 1 to July 3, 1993, and simulates data for an ACD that has only three splits, 60-minute intrahour intervals, and activity each day from 8:00 a.m. to 12:00 p.m. only.

The CMS database uses names to refer to columns of data in a table. These names are called **database items** in CMS. In Figure 1-1 and Figure 1-2, database items are indicated with arrows pointing to their associated columns. The Current Interval Agent and Intrahour Interval Split tables actually contain many more columns (and hence many more database items) than are shown in the figures. For a complete listing of database items, see Appendix A, "Database Items and Calculations".

Each **row** in a table contains data that is related by the value(s) of one or more of the columns. In Figure 1-1, each row in the Current Interval Agent table contains data related by agent login ID. Thus, if you look at the row for login ID 1006 (displayed in bold), you will see that the agent is logged into Split 1 on extension 5671 and is currently in AUX work mode. In addition, up to this point in the current interval, the agent has had:

- 20 ACD calls (ACDCALLS).
- 245 seconds of ACD talk time (ACDTIME).

A column that causes the values in a row to be related is called an **index**. An index stores data sequentially and adds structure for the storage of data in the other columns. For each value in an index column, the remaining values in the corresponding row are related to that value. Thus, in Figure 1-1, the LOGID database item is an index.

In Figure 1-2, each row in the Intrahour Interval Split table contains data related by date, interval, and split. Thus, if you look at the row for Split 1 for the 10 o'clock interval on July 1, 1993 (displayed in bold), you will see that Split 1 had:

- 509 ACD calls (ACDCALLS).
- 43 abandoned calls (ABANDONS).
- 35,401 cumulative seconds of ACD talk time for all ACD calls (ACDTIME).
- 851 cumulative seconds of wait time for all calls that abandoned before being answered (ABNTIME).

## How CMS Retrieves Data

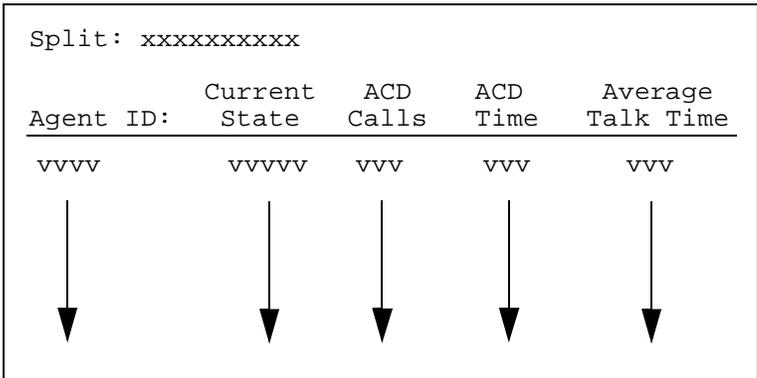
CMS retrieves data from the database based on three types of information you supply when you design a custom report:

- The name of the table
- The database items in the table
- The rows of data in the table.

For example, say that you want a custom real-time agent report that lists the agents in a split. The report design might appear as follows:

**Note** Each series of v's in the illustration represents a report field for which it is expected that CMS will find multiple values (in this case, values for more than one agent) and will display the values vertically in a column.

The x's by the Split: label represent the fact that only one value (in this case, a single split's name or number) is expected for the field.



To tell CMS how to retrieve data, you must tell CMS to access the `cagent` (Current Interval Agent) table. Then, for each report field, you assign the appropriate database items. When you run the report, CMS will find, in the `cagent` table, the columns of data associated with the database items (shaded columns in Figure 1-3).

**Note** For the report field `Average Talk Time`, you actually assign a calculation, `ACDTIME/ACDCALLS`.

ACD	LOGID	SPLIT	EXTENSION	WORKMODE	ACDCALLS	ACDTIME
1	1001	1	3201	1	21	988
1	1002	1	4440	1	19	777
1	1003	1	3002	2	15	400
1	1004	1	3003	2	9	58
1	1005	1	4003	2	11	644
1	1006	1	5671	4	20	245
1	1007	5	7835	3	7	851
1	1008	1	6666	3	18	603
1	1010	1	3241	1	18	203
1	2001	2	7762	4	13	789
1	2002	5	5642	2	14	549
1	2003	2	2221	2	10	402
1	2004	2	2242	4	19	452
1	2005	2	2287	1	21	616
1	2006	2	3982	3	19	569
1	2007	2	6543	2	15	745
1	2008	2	2345	2	9	109
1	2009	5	2022	2	11	367
1	2010	2	4323	4	20	322
1	3001	3	7655	1	7	188
1	3002	3	3425	1	18	704
1	3003	3	4563	1	18	256
1	3004	5	8885	2	13	980
1	3005	3	5544	2	14	589
1	3006	3	3789	2	10	340
1	3007	3	8675	2	19	299
1	3008	6	3009	1	21	688
1	3009	3	4477	2	19	901

**Figure 1-3: Sample 1 of Selection of Database Item**

Next, you identify the appropriate rows that supply data. If you want agents in Split 1, you must tell CMS to find rows that have the value 1 for the SPLIT database item. When you run the report, CMS will find the appropriate rows of data in the `cagent` table (see rows with arrows in Figure 1-4).

	ACD	LOGID	SPLIT	EXTENSION	WORKMODE	ACDCALLS	ACDTIME
→	1	1001	1	3201	1	21	988
→	1	1002	1	4440	1	19	777
→	1	1003	1	3002	2	15	400
→	1	1004	1	3003	2	9	58
→	1	1005	1	4003	2	11	644
→	1	1006	1	5671	4	20	245
→	1	1007	5	7835	3	7	851
→	1	1008	1	6666	3	18	603
→	1	1010	1	3241	1	18	203
	1	2001	2	7762	4	13	789
	1	2002	5	5642	2	14	549
	1	2003	2	2221	2	10	402
	1	2004	2	2242	4	19	452
	1	2005	2	2287	1	21	616
	1	2006	2	3982	3	19	569
	1	2007	2	6543	2	15	745
	1	2008	2	2345	2	9	109
	1	2009	5	2022	2	11	367
	1	2010	2	4323	4	20	322
	1	3001	3	7655	1	7	188
	1	3002	3	3425	1	18	704
	1	3003	3	4563	1	18	256
	1	3004	5	8885	2	13	980
	1	3005	3	5544	2	14	589
	1	3006	3	3789	2	10	340
	1	3007	3	8675	2	19	299
	1	3008	6	3009	1	21	688
	1	3009	3	4477	2	19	901

Figure 1-4: Sample 1 of Selection of Table Rows

The data that CMS plugs into the report is the data found in the intersection of the selected database items and rows. Thus, the report shows data as follows:

Split: 1				
Agent ID:	Current State	ACD Calls	ACD Time	Average Talk Time
1001	AVAIL	21	988	47:00
1002	AVAIL	19	777	40:09
1003	ACD	15	400	26:07
1004	ACD	9	58	6:44
1005	ACD	11	644	58:54
1006	AUX	20	245	12:25
1008	ACW	18	603	33:50
1010	AVAIL	18	203	11:28

Figure 1-5: Sample Custom Report 1

**Note** Actually, when you design a custom report, you normally set up the row selection so that the users running the report can choose the rows in the report's input window. For example, to run the report in Figure 1-5, you would set up the row selection so users would fill out a Report Input window that asked them for a Split number. See "Defining Fields for the Report Input Window" in Chapter 4, "Defining the Data for a Custom Report" of this manual for more information.

As mentioned earlier, CMS uses indexes to create a structure for storing data. Similarly, CMS uses these indexes to search for data. Indexes allow CMS to find data much faster than if data were stored more randomly. Therefore, when you design a custom report, the rows of data for the report should be defined on the basis of index values. See "Defining the Rows of Data for a Report" in Chapter 4, "Defining the Data for a Custom Report" of this manual.

**Note** The indexes for each standard table are fixed and can not be changed, deleted or added to. However, if you define a custom table in the CMS database via INFORMIX SQL, you may define any indexes desired for that new table.

As another example of how CMS retrieves report data, say that you want a custom intrahour interval split report that lists, by intrahour interval, data for a split in a single day. The report design might appear as follows:

Split: xxxxxxxxxxxx		
Date: xxxxxxxx		
	ACD	
<u>Interval</u>	<u>Calls</u>	<u>Abandons</u>
vvvvvvv	vvvv	vvvv

To tell CMS how to retrieve data, you must tell CMS to access the `hsplit` (Intrahour Interval Split) table. You must then assign the appropriate database items to the fields. When you run the report, CMS will find the columns of data associated with the database items in the `hsplit` table (see Figure 1-6).

ROWDATE	STARTTIME	ACD	SPLIT	ACDCALLS	ABANDONS	ACDTIME	ABNTIME
070193	0800	1	1	443	48	36898	988
070193	0800	1	2	234	37	20012	777
070193	0800	1	3	111	20	13111	400
070193	0900	1	1	652	59	53442	1058
070193	0900	1	2	451	32	27635	644
070193	0900	1	3	93	11	15321	245
070193	1000	1	1	509	43	35401	851
070193	1000	1	2	391	31	19768	603
070193	1000	1	3	142	10	9786	203
070193	1100	1	1	480	39	33389	789
070193	1100	1	2	491	22	26789	549
070193	1100	1	3	297	15	12530	402
070293	0800	1	1	399	36	37651	1452
070293	0800	1	2	299	20	29602	7616
070293	0800	1	3	138	13	11523	2569
070293	0900	1	1	400	46	36178	1745
070293	0900	1	2	300	33	24303	1109
070293	0900	1	3	225	12	15628	367
070293	1000	1	1	394	40	40002	1322
070293	1000	1	2	323	34	29881	1188
070293	1000	1	3	105	14	12115	704
070293	1100	1	1	418	41	34819	1256
070293	1100	1	2	246	30	21173	980
070293	1100	1	3	100	18	10281	589
070393	0800	1	1	417	34	37856	1340
070393	0800	1	2	247	24	26308	1299
070393	0800	1	3	141	14	12567	688
070393	0900	1	1	444	43	39003	1001
070393	0900	1	2	301	31	27034	809
070393	0900	1	3	206	8	14230	445
070393	1000	1	1	420	51	39045	1733
070393	1000	1	2	299	39	29562	1303
070393	1000	1	3	198	24	12400	899
070393	1100	1	1	403	50	30990	1812
070393	1100	1	2	320	31	25410	904
070393	1100	1	3	99	21	10222	587

**Figure 1-6: Sample 2 of Database Item Selection**

Next, you must identify the appropriate rows that supply data. You might want data for the following:

- Split 1, which means you must identify rows that have the value 1 for the SPLIT database item.
- The date 07/02/93, which means you must identify rows with the value 070293 for the ROWDATE database item.
- The intrahour intervals 8:00 a.m. to 11:00 a.m., which means you must identify rows with the values 0800 through 1100 for the one database item.

CMS then finds the appropriate rows of data (see the boxed rows in Figure 1-7).

	ROWDATE	INTERVAL	ACD	SPLIT	ACDCALLS	ABANDONS	ACDTIME	ABNTIME
	070193	0800	1	1	443	48	36898	988
	070193	0800	1	2	234	37	20012	777
	070193	0800	1	3	111	20	13111	400
	070193	0900	1	1	652	59	53442	1058
	070193	0900	1	2	451	32	27635	644
	070193	0900	1	3	93	11	15321	245
	070193	1000	1	1	509	43	35401	851
	070193	1000	1	2	391	31	19768	603
	070193	1000	1	3	142	10	9786	203
	070193	1100	1	1	480	39	33389	789
	070193	1100	1	2	491	22	26789	549
	070193	1100	1	3	297	15	12530	402
→	<b>070293</b>	<b>0800</b>	<b>1</b>	<b>1</b>	<b>399</b>	<b>36</b>	<b>37651</b>	<b>1452</b>
	070293	0800	1	2	299	20	29602	7616
	070293	0800	1	3	138	13	11523	2569
→	<b>070293</b>	<b>0900</b>	<b>1</b>	<b>1</b>	<b>400</b>	<b>46</b>	<b>36178</b>	<b>1745</b>
	070293	0900	1	2	300	33	24303	1109
	070293	0900	1	3	225	12	15628	367
→	<b>070293</b>	<b>1000</b>	<b>1</b>	<b>1</b>	<b>394</b>	<b>40</b>	<b>40002</b>	<b>1322</b>
	070293	1000	1	2	323	34	29881	1188
	070293	1000	1	3	105	14	12115	704
→	<b>070293</b>	<b>1100</b>	<b>1</b>	<b>1</b>	<b>418</b>	<b>41</b>	<b>34819</b>	<b>1256</b>
	070293	1100	1	2	246	30	21173	980
	070293	1100	1	3	100	18	10281	589
	070393	0800	1	1	417	34	37856	1340
	070393	0800	1	2	247	24	26308	1299
	070393	0800	1	3	141	14	12567	688
	070393	0900	1	1	444	43	39003	1001
	070393	0900	1	2	301	31	27034	809
	070393	0900	1	3	206	8	14230	445
	070393	1000	1	1	420	51	39045	1733
	070393	1000	1	2	299	39	29562	1303
	070393	1000	1	3	198	24	12400	899
	070393	1100	1	1	403	50	30990	1812
	070393	1100	1	2	320	31	25410	904
	070393	1100	1	3	99	21	10222	587

rs where  
 JT = 1,  
 FE = 07/02/93,  
 RTIME from  
 o 11:00am.

Figure 1-7: Sample 2 of Selection of Table Rows

The data that CMS plugs into the report is the data found in the intersection of the selected database items and columns. Thus, the report shows data as follows:

Split: 1		
Date: 07/02/93		
	ACD	
Interval	Calls	Abandons
08:00am	399	36
09:00am	400	46
10:00am	394	40
11:00am	418	41

**Figure 1-8: Sample Custom Report 2**

Defining data is the central task of creating and designing a custom report. However, you must do many other tasks to create a custom report. These tasks are listed in the following section, "Basic Tasks in Creating a Custom Report".

---

## Basic Tasks in Creating a Custom Report

The following lists the basic tasks of creating a custom report. Each of these tasks are explained in detail in the following chapters of this document.

	Task	Purpose
1.	<b>Defining the Report's Name, Access, and Type (Chapter 2)</b>	You define the <i>name</i> that you use both to run the report and to access the report design if you want to change the design. You define <i>access</i> to determine whether other users can run the report and copy the report's design to create their own custom reports. You define <i>type</i> as either real-time or historical.
2.	<b>Accessing the Screen Painter (Chapter 3)</b>	You access the Screen Painter so that you can design the report. You use the Screen Painter for all tasks in designing a custom report. You can access the Screen Painter only after you have defined the report's name, access, and type.
3.	<b>Copying an Existing Report Design (Chapter 3)</b>	You copy an existing design so that you start with existing report headings, data fields, bars, and other report features. While this is an optional step, you normally save a lot of time and trouble by copying, and then modifying, an existing report design. You can copy both standard and custom report designs.
4.	<b>Editing the Report With Blocks (Chapter 3)</b>	You can edit a report design using block moves, copies, and deletions. Editing with blocks lets you rearrange and delete sections of a report design quickly and easily. Block editing is particularly convenient when you have just copied an exiting report design.
5.	<b>Entering Report Text (Chapter 3)</b>	You normally enter text to provide headings for the data fields in the report. Entering report text should be one of the first things you do so that: <ul style="list-style-type: none"><li>• The text will provide a skeleton layout for positioning your data fields.</li><li>• The text will help you remember what data is supposed to go in the data fields.</li></ul>

If you copy a report design, the text of that report is copied as well. You can then modify the text as required.

Task	Purpose
6. <b>Defining the Report Input Window (Chapter 4)</b>	<p>You define fields for the Report Input window so that users can run the report using parameters they choose (that is, what split, agent, time, date, and so on, the report is for).</p> <p>If you copy a report design, the definition of that report's input window is copied as well. You can then modify the input fields as required.</p>
7. <b>Defining Report Data Fields and Bars (Chapter 4)</b>	<p>You define the location of fields and bars in the report, as well as the field length, bar height/length, and the data that should appear in the fields/bars. Defining data consists primarily of specifying which database items supply data to the fields/bars. Your definition of report data is not complete, however, until you complete Task 8, "Selecting Rows of Data from the Database Tables."</p> <p>If you copy a report design, the definition of that report's data fields/bars is copied as well. You can then modify the data fields/bars as required.</p>
8. <b>Selecting Rows of Data from the Database Tables (Chapter 4)</b>	<p>You define which rows of data in a table will supply data for the fields and bars you defined in Task 7.</p> <p>If you copy a report design, the definition of that report's rows of data will be copied as well. You can then modify the selection of rows as required.</p>
9. <b>Defining Run Time/Date and User Input Fields (Chapter 4)</b>	<p>You can define fields on the report to show when the report was run and to show what items the report covers (as defined by the user's inputs when running the report).</p> <p>If you copy a report design, these field are copied as well. You can then modify them as required.</p>
10. <b>Highlighting Fields (Chapter 5)</b>	<p>You can emphasize or de-emphasize individual fields and text in the report by changing brightness levels (or color if you have a color terminal) and by using underlines and reverse video.</p> <p>If you copy a report design, the highlighting and other video attributes will be copied as well. You can then modify them as required.</p>

	<b>Task</b>	<b>Purpose</b>
11.	<b>Defining No-Scroll Areas (Chapter 5)</b>	<p>You can define parts of the report that will stay in the same place in the report window even when you are scrolling up and down or right and left. You will normally define no-scroll areas for column headers, column totals, and row identifiers.</p> <p>If you copy a report design, no-scroll areas will be copied as well. You can then modify them as required.</p>
12.	<b>Saving the Design (Chapter 5)</b>	<p>After doing any work on the design of a custom report, you must save the design. Otherwise, any work you did will be lost.</p>
13.	<b>Testing the Design (Chapter 5)</b>	<p>You can test your report immediately after designing and saving it. Testing helps eliminate wasted time in running a report whose design still has errors.</p>

In addition to the basic tasks, you may perform tasks in Dictionary. See Chapter 7, "Dictionary" for a description of these tasks.

You will also need to perform tasks in INFORMIX RDSQL if you want to create custom data tables. See Chapter 6, "Advanced Report Design" for a description of these tasks.

---

## General Information

This chapter tells you how to:

- Define a custom report's name, access, and type. (This is the **first** task in designing a custom report.)
- Change a custom report's access or description.
- Delete a custom report.

You do these tasks via the Edit Report: Report Select window.

To complete the design of a custom report, you must also follow the procedures in Chapter 3, Chapter 4, and Chapter 5, and, optionally, Chapter 6 and Chapter 7.

---

### Prerequisite System Administration

- To create, change, or delete a custom report, you must have **read** and **write** permission for the Custom Reports subsystem.

---

# Define a Report's Name, Access, and Type

Use the steps in this section to define a new custom report's:

- Name
- Access
- Type.

These are the first steps in designing a new custom report.

**Note** If you are a CMS administrator, you can also specify the owner of the report you are defining (see "Step 4: Define the User ID" of this procedure). If you are not a CMS administrator, you can define a report with only you as the owner.

You can not define a custom report with a timetable.

---

## Step 1: Access the Report Select Window

- 1a. Select the Custom Reports option on the Main Menu and press the **Return** key. → *The Custom Reports submenu displays.*

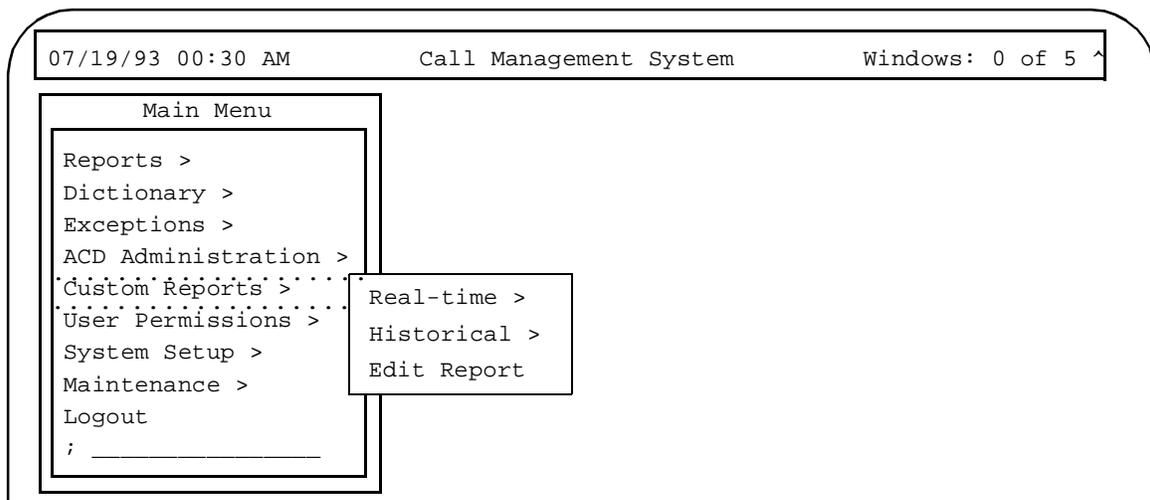
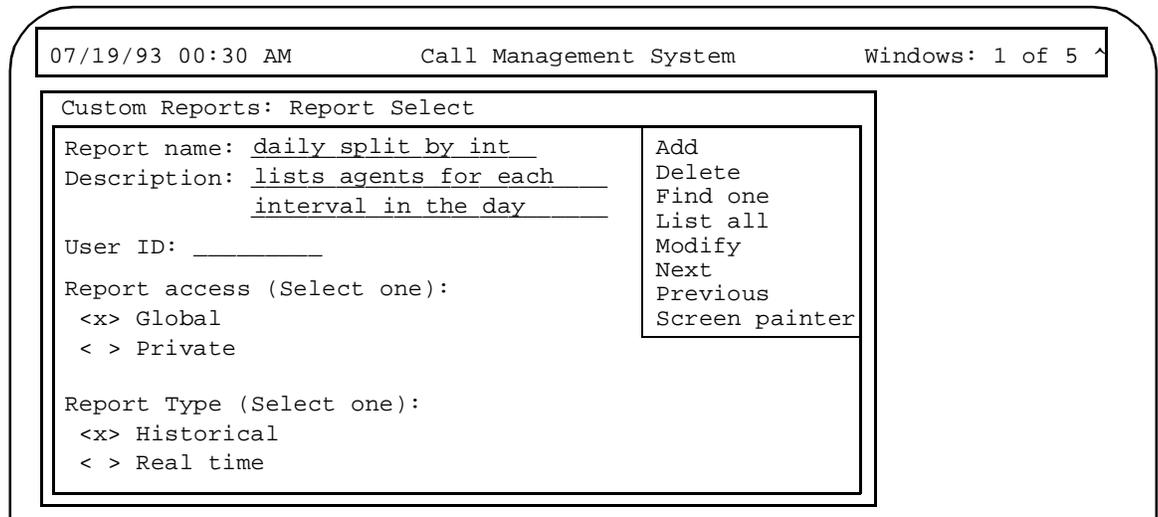


Figure 2-1: Custom Reports Main Menu

**1b.** Select the `Edit Reports` submenu option.

→ *The Report Select window displays.*



**Figure 2-2: The Report Select Window**

## Step 2: Assign a Name to the Report

Enter a name for your report in the `Report name` field. The name can have up to 20 characters, including blanks.

Because, in most cases, the name you give your report must be unique, you may want to look at existing custom report names before entering a name for your report.

Use the following steps to list existing report names.

**2a.** Enter an `x` to select a report access — either `global` or `private`.

**2b.** Enter an `x` to select a report type — either `Historical` or `Real-time`.

**2c.** Press the `Return` key, select `List all`, and press the `Return` key again.

→ *The List All window displays, listing all global or private custom report names for the specified report type.*

- 2d.** Check the list to ensure that the name you want to give your report has not already been used. If you are creating a *global* report (see “Step 5: Define Access to the Report”), its name must be different from any name in the list. If you are creating a *private* report (see “Step 5: Define Access to the Report”), its name must be different from names of any existing global reports and names of your existing private reports.

**Note** Your private report names can be the same as another user's private report names.

- 2e.** Press the **Exit** key to return to the Report Select window → *The List All window disappears, and the cursor returns to the Report Select window.*
- 2f.** Enter the name you want for your report.

**Note** You may do a `List all` of reports based on different combinations of field entries. You must always select a report type, `Historical` or `Real-time`.

### Step 3: Enter a Report Description

If desired, enter a description of the report in the `Description` field. The description can have up to 50 characters, including blanks.

Your description should be detailed enough to describe the report's contents accurately. You **can not** enter the following characters:

\	backslash
;	semicolon
'	grave accent
~	tilde
"	double quotes
	pipe
*	asterisk
?	question mark

---

### Step 4: Define the User ID

Enter the user ID of the owner of the report. The default is your user ID. If you are a CMS administrator, you can enter another user's ID if you wish to create a custom report for that user. This might be the case if you want only that user to be able to run the report.



You can enter another user's ID, even if you are not the CMS administrator, if you want to do a `List All` of that user's existing custom reports.

---

### Step 5: Define Access to the Report

Enter an `x` to select a report access option, either `global` or `private`.



It is a good idea *initially* to make your reports private until they have been debugged and run successfully. This prevents the possibility of other users running reports you have saved but might not run properly yet.

`Global` access to the report gives other users the following capabilities:

- Other users can run the report.
- Other users can copy the report design when designing their own custom report (see "Copying an Existing Report Design" in Chapter 3, "Using Screen Painter Editing Tools" of this manual).

If you select `global`, your report's name must be different from the name of any other custom report — `global` or `private`.

`Private` access to the report means that only you (and the CMS administrator(s)) can run the report. In addition, no other users, except for CMS administrators, can copy the report design for use in their own custom reports.

If you select `private`, your report's name must be different from the names of the following:

- Any other private report you have created of the same type
- Any user's global custom report of the same type.



No other CMS user other than a CMS administrator can modify a report design you create, regardless of whether the report is `global` or `private`. A CMS administrator always has the ability to modify your report design, even if you make it `private`.

---

### Step 6: Define the Report as Real-time or Historical

Enter an `x` to select a report type option, `Real-time` or `Historical`.

When you design the report on the Screen Painter, you are able to access data only for the category you select here. For example, if you select `Real-time`, you are not able to specify historical data in the report design.

Also, when you go to run the report, CMS lists the report under the appropriate submenu, `Real-time` or `Historical`.

You **must** select the `Historical` option if you want to include:

- Exceptions data
- Forecast data
- Call work code data
- Agent trace data
- Call record data.

---

### Step 7: Save the Report Name

1. Press the **Return** key, select Add, and press the **Return** key again. → Successful *appears on the status line. If CMS will not add the report name because the name is not unique, do a List all to see what names already exist, and go back to Step 2 in this procedure.*

After you have added the report name, you may access the Screen Painter to begin designing the report (see Chapter 3, "Using Screen Painter Editing Tools").

## Changing a Report's Access or Description

**Note** You can not change a report's name, type, or owner once you have added the report. Instead, you must create a new report with the desired name, type, or owner, and then copy the design of the old report to the new report.

1. On the Report Select window, complete the fields you wish to search on. (Report type is a required field.) Press the **Return** key, and select the List all option. Press the **Return** key again. → *A List All window displays containing a list of all custom reports for the specified type and user ID.*

**Note** You may change the User ID field to list another user's custom reports. You **can not** change the user ID of a report that already exists.

2. Find the report you want to change, and press **Exit** to return to the Report Select window. → *The cursor returns to the first field of the Report Select window.*
3. In the Report name field on the Report Select window, enter the name of the report whose description or access you want to change.
4. If necessary, change the default Report type selection. Then, press the **Return** key, select Find one, and press the **Return** key again. → *CMS fills in all fields with the report's characteristics.*
5. Change the description or report access as desired. Then press the **Return** key, select Modify, and press the **Return** key again. → *Successful appears on the status line.*

**Note**

You can not change a report's name or user ID using `Modify`. To change a report name or user ID, you must add a new report name (with the desired user ID), access the Screen Painter, copy the old report's design to the new report, and finally delete the old report name. **Also, you can only change the user ID if you are a CMS administrator.**

## Deleting a Custom Report

**Note**

You can not delete another user's custom reports unless you are a CMS administrator.

1. On the Report Select window, complete the fields you wish to search on, and select the `List all` option. (`Report type` is a required field.) → *A List All window displays containing a list of all global and private custom reports for the specified type and user ID.*

**Note**

You may change the `User ID` field to list another user's custom reports. However, you can not delete another user's report unless you are a CMS administrator.

2. In the List All window, find the report you want to delete, and press `Exit` to return to the Report Select window → *The List all window disappears, and the cursor returns to the first field of the Report Select window.*
3. In the `Report name` field on the Report Select window, enter the name of the report you want to delete.
4. Press the `Return` key, select `Find one`, and press the `Return` key again. → *CMS fills in all fields with the report's characteristics.*



If more than one report has the same name, you may have to use `Next` to find the report you want.

5. Press the `Return` key, select `Delete`, and press the `Return` key again.

→ `Successful` *appears on the status line.*

## Accessing the Screen Painter

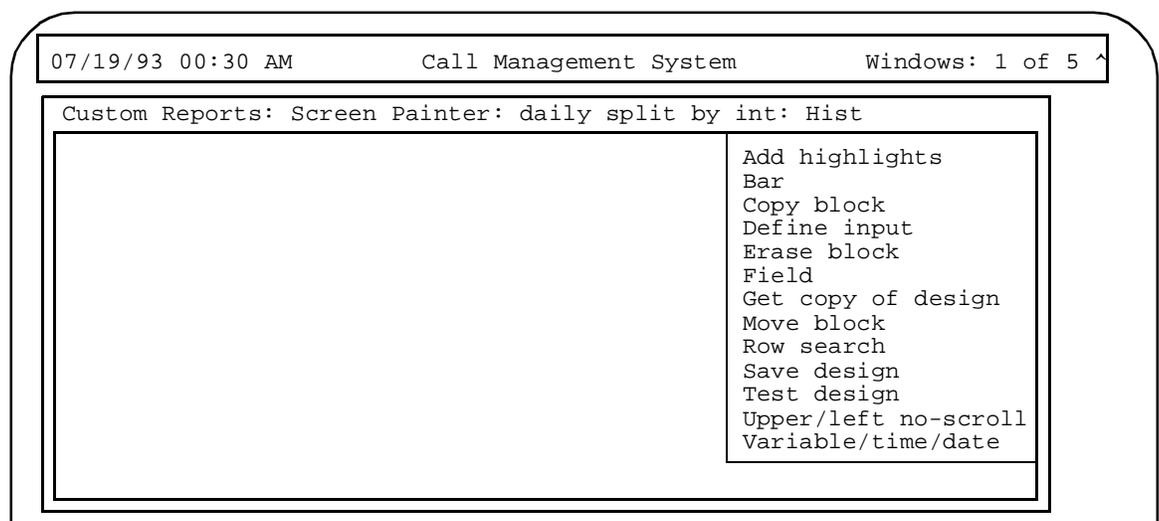
To design your custom report, use the Screen Painter (Figure 3-1). On the Screen Painter, you can enter report text, data fields, and data bars in a layout that closely resembles the layout of the actual report.

**Note** You must define the report name and its select characteristics in the Edit Report: Report Select window before you can access the Screen Painter for that report.

**Note** You can access the Screen Painter for a report that someone else designed only if you are a CMS administrator. However, if another user's report has global access, you may add your own report name and then copy that user's report design on the Screen Painter (see the "Copying an Existing Report Design" section in this chapter).

Access the Screen Painter using the following steps.

1. On the Report Select window, enter the name of the report in the Report name field, and select Find one. → *The select characteristics of the report appear.*
2. Select the Screen painter action list option. → *The Screen Painter appears.*



**Figure 3-1: The Screen Painter**

## Special Properties of the Screen Painter

On the Screen Painter, cursor movement, scrolling, and data entry all differ from those operations in normal CMS windows.

### Moving the Cursor on the Screen Painter

Since the Screen Painter has no predefined fields, you can freely move the cursor around the interior of the Screen Painter with the following keys:

Arrow keys (↓, ↑, →, ←) Move the cursor one space in the direction of the arrow.

**Tab** Moves the cursor eight spaces to the right. You can also use **Tab** when you are defining blocks (see the "Editing a Report with Blocks" section in this chapter).

**Shift Tab** This means you must **press and hold the Shift** key; then press the **Tab** key. This convention applies throughout this document when any set of two keys are shown side by side.

Moves the cursor eight spaces to the left. You can also use **Shift Tab** when you are defining blocks (see the "Editing a Report with Blocks" section in this chapter).

**Note** **Shift Tab** may not be available on some terminals.

**Back Space** Moves the cursor one space to the left.

**Ctrl f** (Forward) Moves the cursor to the far right edge (132nd column) of the Screen Painter.

**Ctrl b** (Back) Moves the cursor to the left edge (1st column) of the Screen Painter.

**Ctrl d** (Down) Moves the cursor to the bottom (Line 25) of the Screen Painter.

**Ctrl u** (Up) Moves the cursor to the top (Line 1) of the Screen Painter.

## The Screen Painter Size

The Screen Painter allows you to create a report design with maximum dimensions as follows:

- A horizontal size of 132 columns (character spaces).
- A vertical size of 25 lines.

For most terminals, CMS will display (in the lower right border of the Screen Painter) the exact position of the cursor within the Screen Painter's 25 x 132 grid (see Figure 3-2). However, because the interior of the Screen Painter window is only 54 columns wide and 20 lines high, you may need to scroll the Screen Painter horizontally or vertically to access areas that do not fit within the window.



The widest custom report that you can display on your terminal without scrolling is 78 columns wide. The terminal actually displays 80 columns, but the side borders of the report window use two of the columns.

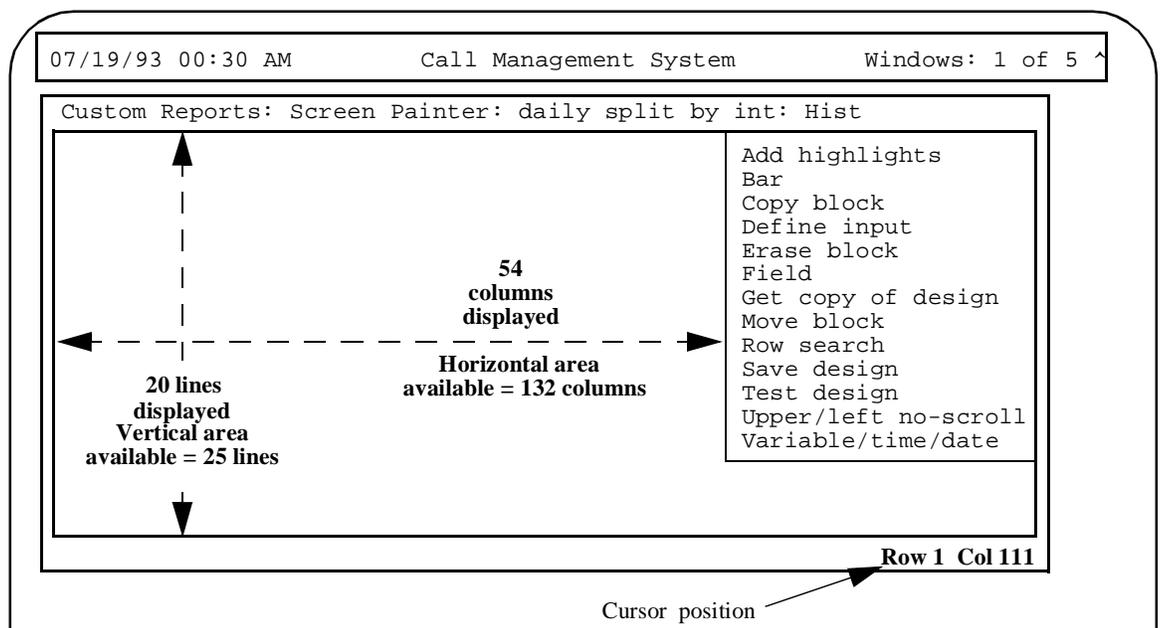


Figure 3-2: Screen Painter Size and Cursor Position

## Scrolling the Screen Painter

The Screen Painter will scroll automatically when the cursor hits the left, right, top, or bottom border. The Screen Painter scrolls one column or one line at a time when you use the arrow keys, but will scroll eight columns at a time when you use **Tab** for horizontal scrolling. Right scrolling will beep when the 132nd column appears. Left scrolling will beep when the first column reappears. Down scrolling will stop when the 25th line appears. Up scrolling will stop when the top line reappears.

## Properties of Secondary Windows

For most tasks on the Screen Painter, you must complete a secondary window. These secondary windows pop up after you select an action list option. Some secondary windows automatically disappear when you are finished entering data and select an action list option. However, for some secondary windows, you must press the **Exit** SLK to close the window and return to the Screen Painter.

If you use the **Current** SLK to leave a secondary window and return to the Screen Painter, the secondary window will remain open. However, until you close the secondary window, the Screen Painter will be locked such that you can not enter text or select any other action list options.

## Editing Keys in Secondary Windows

In the secondary windows only, you can use the standard field editing keys. These keys, which offer you considerable convenience, are as follows:

- Ctrl e** Turns insert mode on or off. With insert mode on, you insert characters at the cursor's current position in the field.
- Ctrl x** Erases characters in a field from the current position to the end of the field.
- Ctrl y** Erases all characters in a field.
- Ctrl z** Erases inputs in all fields in a window.

**Note** These keys are **not** available on the Screen Painter itself.

---

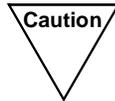
# Copying an Existing Report Design

---

## General Information

In the majority of cases, you should begin your design of a custom report by copying an existing report design, then making desired changes. Copying, then modifying, an existing report design is usually the quickest, easiest method for designing a custom report.

You can copy standard report designs or custom report designs. You can also copy more than one report design into a single custom report. However, if your report is an historical report, you can not copy a real-time report onto the Screen Painter. Likewise, if your report is a real-time report, you can not copy an historical report onto the Screen Painter.



It is a good idea to run test design on a report copy before modifying it. This will ensure the copy is working before you do any modification to it.



Items in the report you are copying may overlap text, fields, or bars you previously entered on the Screen Painter. If items in the copied report overlap existing items, CMS will copy to the Screen Painter only those parts of the report that **do not** overlap.

To prevent overlapping, you may need to clear the area in the upper left portion of the Screen Painter before copying a report design. You can clear the area easily by moving or deleting all data as a block (see the "Editing a Report with Blocks" section in this chapter). Be sure the cleared space is large enough to contain the report design you are copying.



You **can not** copy the Multi-ACD By Split/Skill and Busy Hour By Trunk Group standard reports.

To copy an existing report design, do the following:

## Step 1: Access the Get Copy Window

On the Screen Painter, select the Get copy of design action list option. → *The Get Copy window appears.*

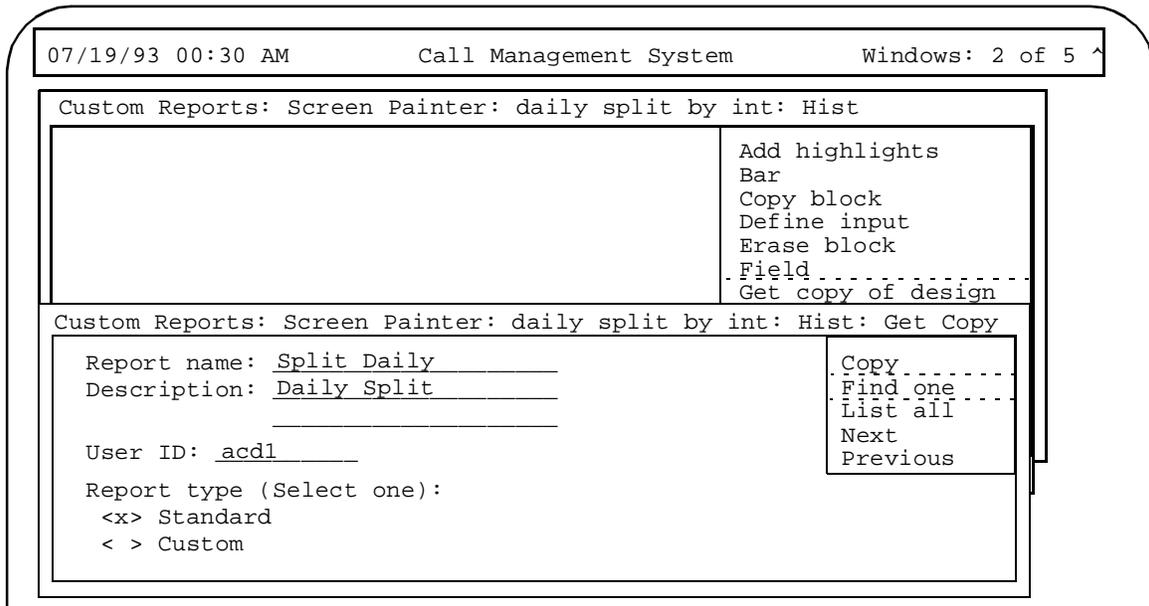


Figure 3-3: The Get Copy Window

## Step 2: Enter a Report Name

In the Report name field, enter the name of the report you want to copy. You can copy standard report designs, global report designs, and private report designs. However, you **can not** copy another user's private report designs unless you are a CMS administrator.

If you do not know the report name, first select List all. For List all, you may leave the Report name blank, but you **must** complete the Report type field, described later. After the List all, you can go back and enter the report name.

**Note** Because of the need to shorten names of standard reports for this window, the name you must enter in this window will not always exactly match actual names of standard reports.

### Step 3: Enter a User ID

In the `User ID` field, enter a user ID only if one of the following is true:

- You are a CMS administrator and you want to copy another user's private report.
  - You want to list the custom reports of a specific user only.
- 

### Step 4: Select a Report Type

Enter `x` to select the `Report type` option — either `standard` or `custom` — for the type of report you want to copy. If the wrong option is selected, CMS may not find or copy the report you actually want.

---

### Step 5: Verify the Report

Select `Find one` to verify the report is the one you want to copy. → *The user ID appears in the User ID field and, if it exists, the report description appears in the Description field.*

---

### Step 6: Copy the Report

Select `Copy` to copy the report's design to the Screen Painter. → *The Get Copy window disappears and the report design appears on the Screen Painter, starting in the upper left corner.*

If you want to copy another report design, clear the upper-left area by deleting or moving any existing block of text and fields (see the "Editing a Report with Blocks" section in this chapter). Then, repeat Steps 1 through 5.

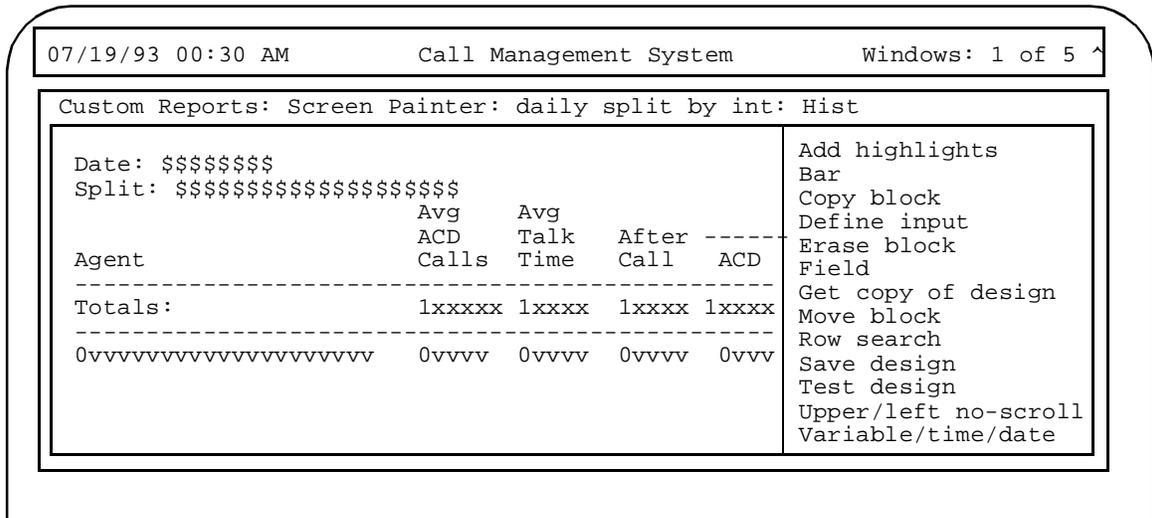


Figure 3-4: Case Study Sample — Copy of a Report Design (Using Get copy)

**Note** The sample report design copy in Figure 3-4 is actually much wider than the Screen Painter. If the Screen Painter were big enough to show the complete report design, the design would look like the following illustration.

Daily Split

Date: \$\$\$\$\$\$ Printed: mm/dd/yy hh:mm AM  
 Split: \$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$ ACD: \$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$

	Avg	Avg		-----Agent Time-----										Avg
Agent	ACD	Talk	After	ACD	ACW	Ring	AUX	Avail	Staff	Assists	Trans	Calls	Hold	
	Calls	Time	Call								Out	Held	Time	
Totals	1xxxxx	1xxxx	1xxxx	1xxxxxxxx	1xxxxxxxx	1xxxxxxxx	1xxxxxxxx	1xxxxxxxx	1xxxxxxxx	1xxxxx	1xxxxx	1xxxxx	1xxxx	
0vvvvvvvvvvvvvvvvvvvv	0vvvv	0vvvv	0vvvv	0vvvvvvv	0vvvvvvv	0vvvvvvv	0vvvvvvv	0vvvvvvv	0vvvvvvv	0vvvv	0vvvv	0vvvv	0vvvv	

**Note** If part of the report you are copying overlaps existing text or fields on the Screen Painter, CMS will not copy that part of the report to the Screen Painter.

---

# Editing a Report with Blocks

---

## General Information

A **block** is a rectangular area on the Screen Painter that you define and use to quickly rearrange fields and text. You can erase blocks, copy blocks, or move blocks.

You define a block with the cursor by marking two opposite corners of a rectangle. The block so defined becomes highlighted. A block may contain a single character of text, a single field or bar, several words of text, several fields/bars, a combination of fields/bars and text, or a whole report design.



If a block includes any part of a field/bar, then CMS automatically includes the entire field in the block. You should therefore use care when deleting blocks to avoid unintentionally deleting a field/bar.

You can edit a report in blocks using the steps described in the following pages.

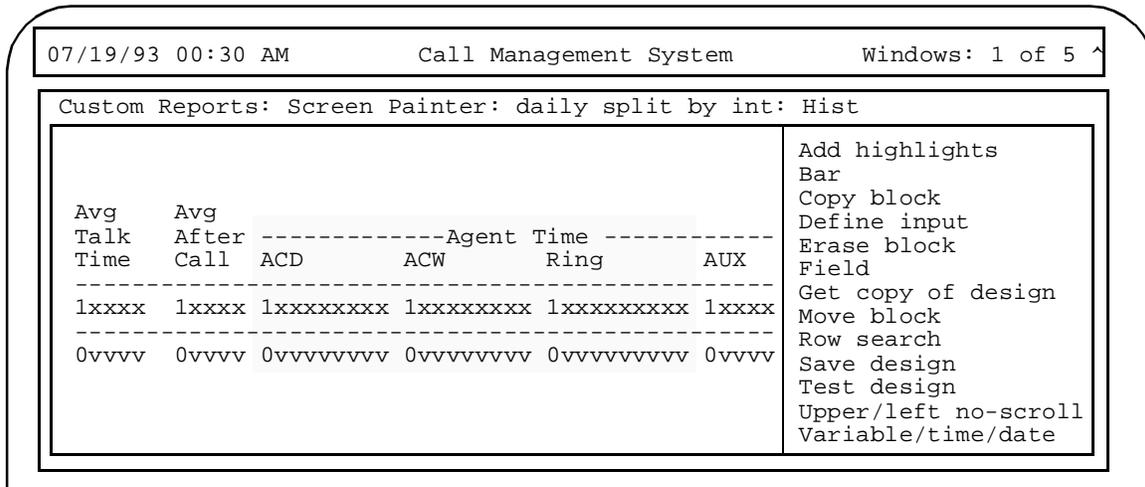
---

## Erasing a Block



Prior to completing a block erase, you may press **Ctrl** **c** to cancel the erasure.

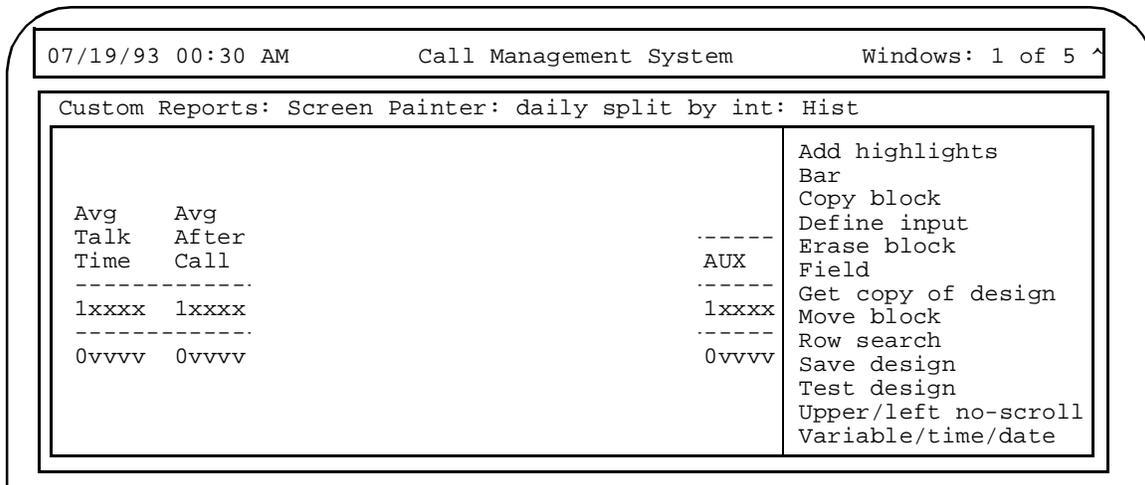
1. On the Screen Painter, place the cursor in a position where you want one corner of the block to be, and select `Erase block`. → *The cursor returns to its original position, and the following message appears on the status line: Move cursor to define opposite corner of block, press RETURN.*
2. Move the cursor to a position where you want the opposite corner of the block to be. The block should include all fields and text you want to erase. → *The block you are defining becomes highlighted as you move the cursor.*



**Figure 3-5: Sample Case Study — Defining a Block to Erase**

**Note** In our case study sample, we want to erase the middle section of the copied report design. Therefore, in Figure 3-5, we have scrolled horizontally to the middle section and defined the block we want to erase.

3. Press **Return** . → *An Acknowledgment window appears.*
4. Enter **y**, and press **Return** . → *All fields and text within the block disappear.*



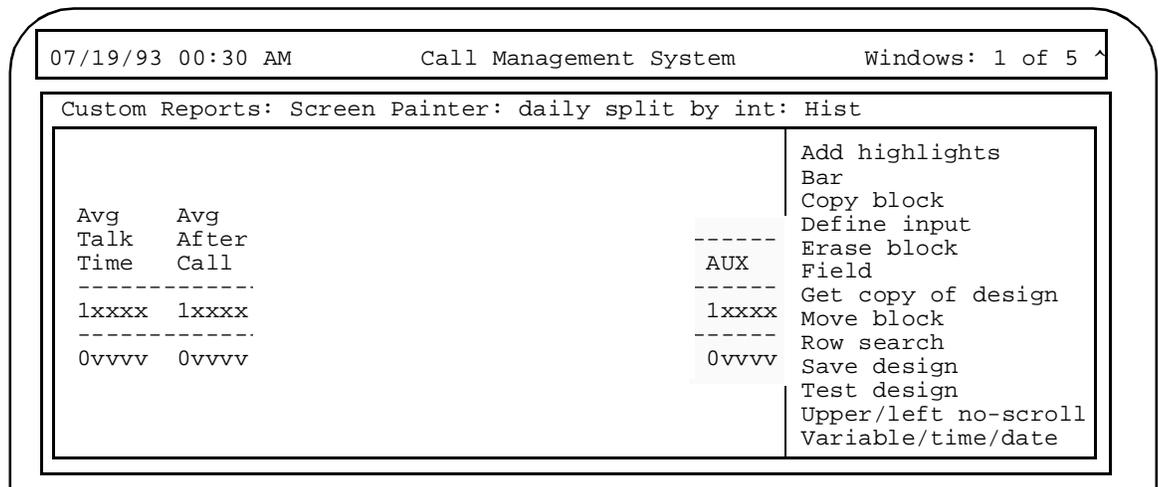
**Figure 3-6: Sample Case Study — Erasing the Block**

## Moving a Block

**Note**

Prior to completing a block move, you may press **Ctrl** **c** to cancel the move.

1. On the Screen Painter, place the cursor in a position where you want one corner of the block to be, and select `Move block`. → *The cursor returns to its original position, and the following message appears on the status line: Move cursor to define opposite corner of block, press RETURN.*
2. Move the cursor to a position where you want the opposite corner of the block to be. The block should include all fields and text you want to move. → *The block you are defining becomes highlighted as you move the cursor.*

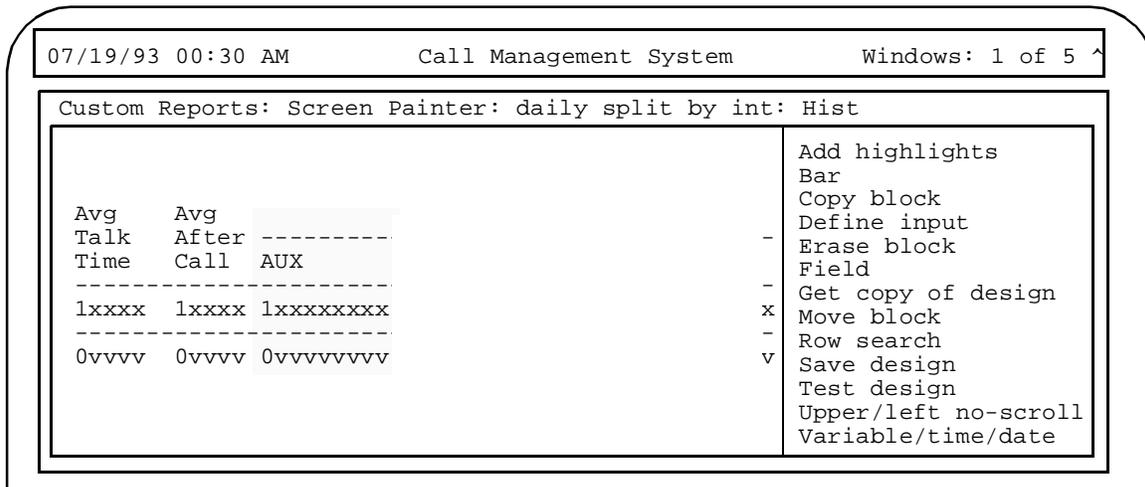


**Figure 3-7: Sample Case Study — Defining a Block to Move**

**Note**

In our case study, we want to keep the AUX time column, but we want to move it over to the left next to the other report items we want to keep.

3. Press **Return** . → *The following message appears in the status line:  
Move cursor to locate upper left corner of move, press RETURN.*
  
4. Move the cursor to a new position for the upper left corner of the block, and press **Return** . → *All fields and text within the block move to the new location.*



**Figure 3-8: Case Study Sample — Completing a Block Move**

When the block moves to its new location, the block's text or fields **can not overlap** any other text or fields.

---

## Copying a Block

**Note**

Prior to completing a block copy, you may press **Ctrl** **c** to cancel the copy.

1. On the Screen Painter, place the cursor in a position where you want one corner of the block to be, and select `Copy block`.  
→ *The cursor returns to its original position, and the following message appears on the status line: Move cursor to define opposite corner of block, press RETURN.*
2. Move the cursor to a position where you want the opposite corner of the block to be. The block should include all fields and text you want to copy.  
→ *The block you are defining becomes highlighted as you move the cursor.*
3. Press **Return** .  
→ *The following message appears in the status line: Move cursor to locate upper left corner of copy, press Return.*
4. Move the cursor to a new position for the upper left corner of the block, and press **Return** .  
→ *All fields and text within the block are copied to the new location.*

When you copy a block, the block's text or fields **can not** overlap any other text or fields. If you try to copy in a way that overlapping is going to occur, an error message will appear informing you of this.

---

## Entering Report Text

You can enter text on the Screen Painter to label your fields, enter a report title, or include special instructions for the report. You should normally enter text to label each data field so that when you run the report, you will know what data the field is showing.

You should enter text **before** defining the data fields for two reasons:

- The text will provide a skeleton layout to help you position your data fields.
- The text will help you remember what each data field represents. If you have to change fields, the accompanying text will save you a lot of time.

To enter text, simply position the cursor where you want the text and type the characters. You can use the space bar to create spaces and to delete text. You can also simply overwrite existing text with new text.

Note You can not overwrite a data field.

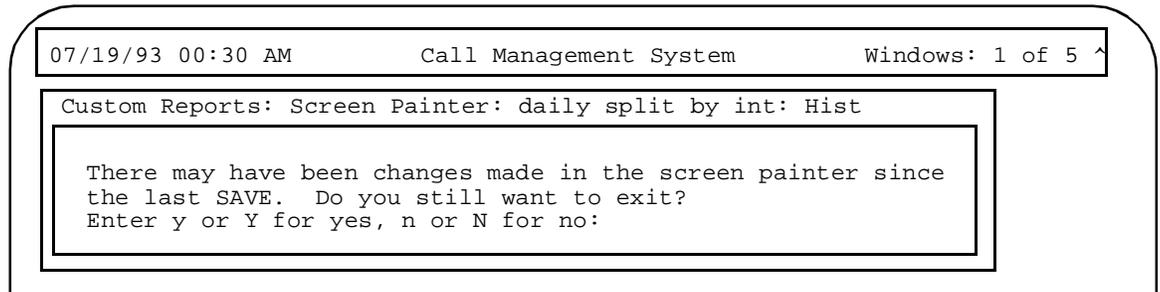
To delete large portions of text, use the `Erase block` action list option (see the "Erasing a Block" section in this chapter).

---

## Saving Your Work

If you want to save your work up to this point, select the `Save design` action and press the `Return` key.

If you press `Exit` at this point, the following message appears:



If you enter `n` (or `N`), you will be returned to the screen painter without saving any changes. If you enter `y` (or `Y`), you will be returned to the report select screen.



## Defining Fields for the Report Input Window

### General Information

To run a standard report, you first access a Report Input window (see Figure 4-1). The Report Input window gives you control over what data (which splits/skills, trunks, dates, intrahour intervals, and so on) is included in the report.

The image shows a terminal window titled "Reports: Historical: daily split by int" with a "Run" button in the top right corner. The window contains the following text and input fields:

```

Date: _____
Interval(s): _____

Report destination (Select one:)
<x> Terminal
< > Printer, Printer name: _____
< > File,
    File name: _____
  
```

Three arrows point to specific parts of the window: "Prompt" points to the title bar, "Input Field" points to the "Date:" field, and "Destination Fields" points to the "Report destination" menu options.

**Figure 4-1: Sample Report Input Window**

To define report input fields, use the Define Input window (Figure 4-2). You must complete a Define Input window for each input field. When you are done, you will have created a Report Input window. When you or another user prepares to run your custom report, this input window will appear with the field prompt(s) and the input field(s) you defined (like those shown in Figure 4-1).

You define fields for the Report Input window using the steps described in the following pages.

### Step 1: Access the Define Input Window

On the Screen Painter, select the Define input action list option. → *The Define Input window appears.*

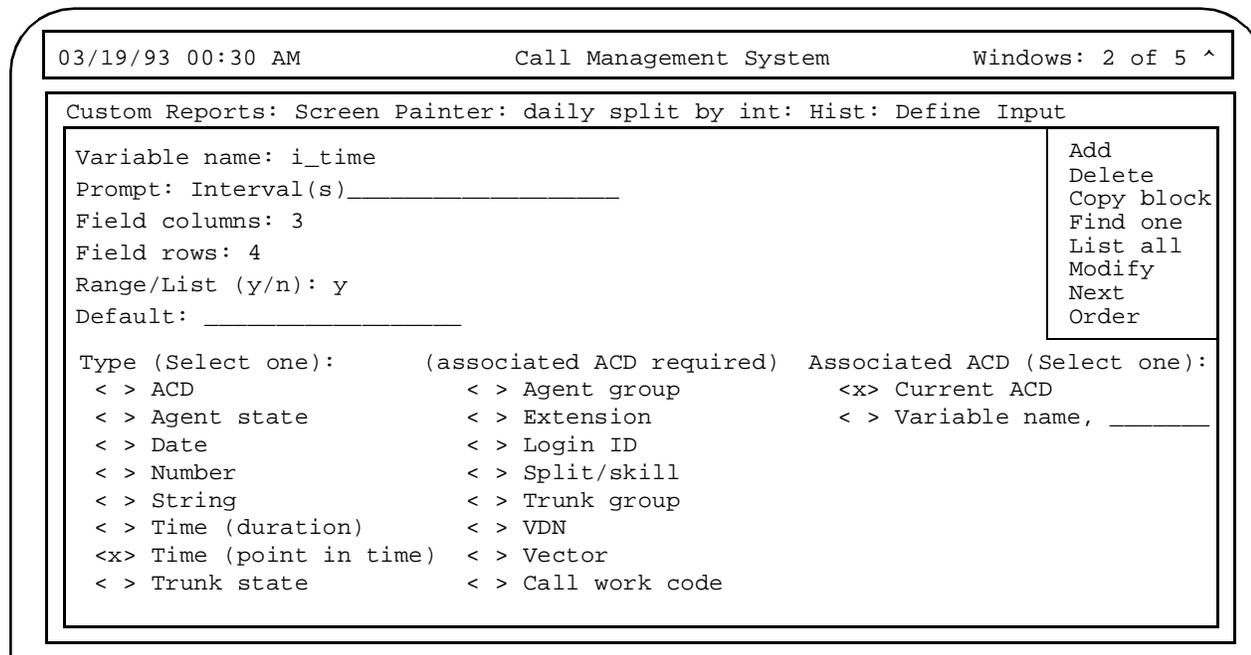


Figure 4-2: The Define Input Window (with Sample Inputs)

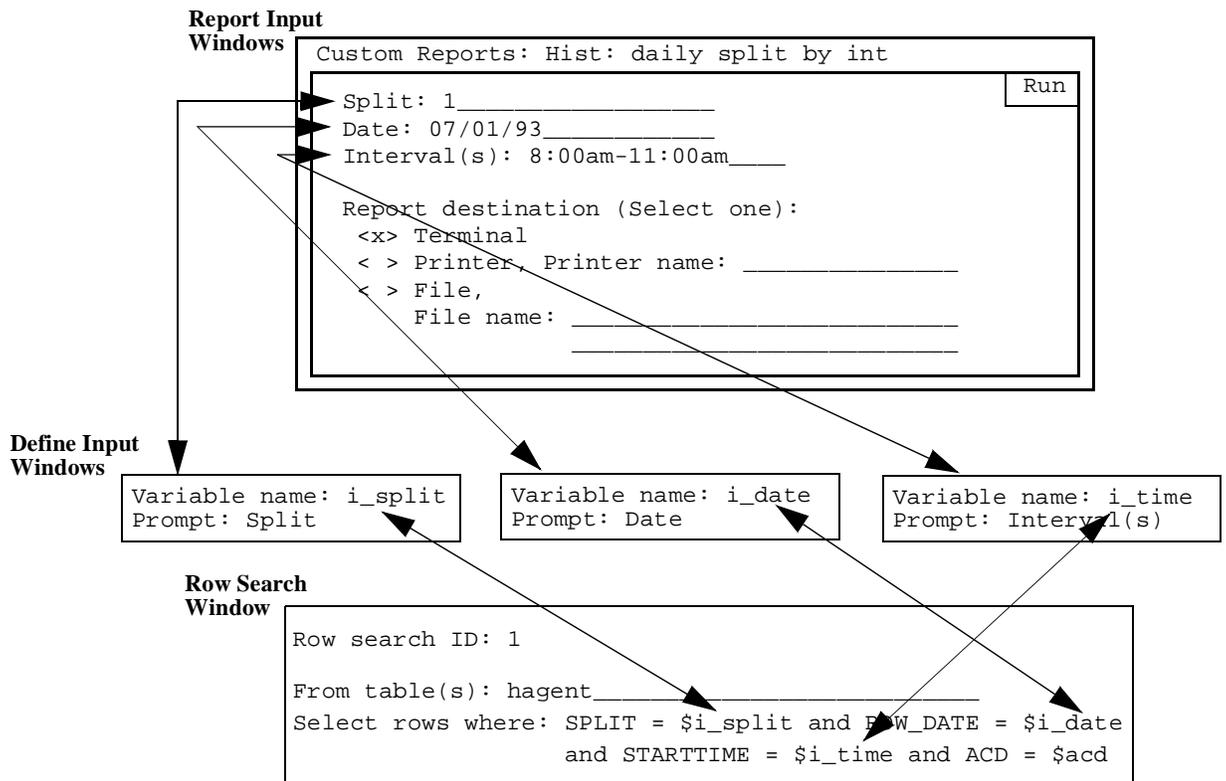
## Step 2: Define the Variable Name

Enter a name of up to eight alphanumeric characters in the `Variable name` field. You must use this exact variable name again in the Row Search window when you define your row search conditions (see the "Defining the Rows of Data for a Report" section in this chapter). The variable name links the report input field to the row search conditions. This link enables CMS to use the value(s) a user enters when running the report to search the database for appropriate report data. See Figure 4-3.

**Note** If you copy a report (via Get Copy), that report's input fields and row search conditions are also copied. Before entering any variable names, you may first want to do a "List all" to see the report input fields that are already defined and the variable names they use. If you then add, delete, or change a variable name for a report input field, you must also add, delete, or change that variable name in the row search conditions.

**Note** You can not do a “List all” nor a “Find one” in the Define Input window by searching on multiple fields. For a “Find one” search, CMS uses only the entry in the Variable name field. CMS ignores the other fields. For a “List all” search, CMS ignores all fields.

The following illustration shows an example of how the report input fields are linked to a report's search conditions.



**Figure 4-3: How a Variable Links the Report Input and Row Search**

In the illustration, the user enters a split number of 1, a date of 07/01/93, and intrahour intervals from 8:00 a.m. to 11:00 a.m. CMS identifies 1 as the value for variable name `i_split`, 07/01/93 as the value for variable name `i_date`, and 8:00 a.m. to 11:00 a.m. as the values for variable name `i_time`. CMS then searches the specified database items (SPLIT, ROW\_DATE, and STARTTIME) in the Intrahour Agent (hagent) table for rows that have those values. Finally, CMS extracts data from those rows and displays the data in the report's fields.

### Step 3: Enter a Field Prompt

In the `Prompt` field, enter a name of up to 30 characters to appear next to the input field on the Report Input window. Because you can use blanks, your prompt can be more than one word.

This name should describe the information (what split, what date, what time, etc.) a user must enter in the field when ordering the report. For example, if you want the user to enter a date, "Date" would be an appropriate prompt. However, if the user can enter more than one date in the field, "Date(s)" would be more appropriate.

### Step 4: Define the Number of Field Columns and Rows

The size of the input field is determined by the *product* of the numbers entered in the `Field columns` and the `Field rows` fields on the Report Input window. The maximum *product* of the two numbers you enter here can not exceed 50. If the user will order the report with names (for example, split names) instead of numbers, make sure the field is large enough for the user to enter the complete name (up to 20 characters). If the user can enter a range of values, make sure the field is large enough for any range the user might possibly enter.

### Step 5: Define the Field as Single Value or Range/List

Enter `y` in the `Range/List` field to allow the user to enter a range or list of values in the input field. If you enter `n`, the user will be able to enter only one value in the input field when ordering the report. For example, if you define a "Date" input field, so that the report will show data for only one day, type `n`. If you define a "Times" or "Intervals" input field so the report can show data for multiple intrahour intervals in a day, type `y`.

**Note**

If you specify a range/list for a variable name in the Define Input window, then, in the Row Search window, you **must** use the equals (=) sign in the "where" clause for that variable name. See the "Defining the Rows of Data for a Report" section in this chapter.

### Step 6: Provide a Default Value for the Field

Enter a value in the `Default` field of up to 50 characters. This value will appear in the input field when the user first accesses the Report Input window. The user can then choose to overtype this value with another value or order the report with this value.

You may also leave the `Default` field blank. In this case, the input field will be blank when the user accesses the Report Input window.

### Step 7: Select a Field Type

Enter an `x` to select an item in the `Type` list. The field type tells CMS what kind of values it should expect the user to enter. If CMS knows what to expect, CMS can do the following:

- Check that the user's entries are valid system values and are values CMS can use to search the database tables.
- Check that the user has permissions to run a report for the entries.
- Allow the user to enter names defined in Dictionary.

For example, say that you define an input field for the user to select a split for the report. If you assign the "Split/Skill" field type to the input field, the following would be possible:

- If the user enters a number, CMS can check, **before searching the database**, to see that the number is within system limits (for example, 1 to 60 for System 85/G2).
- The user can enter the name of the split/skill as defined in Dictionary. CMS can check the `Dictionary: Split/Skill Names` list to find the split/skill number associated with the name.
- CMS can check to see that the user has read permission for the split/skill.

Similarly, if your variable's input field requires a date, by specifying a "Date" field type, CMS can check that the user does not enter a date like `070193` — which is not in a format that CMS can use.

The field types are as follows:

**Table 4-1: Report Input Field Types**

Type	Description	Type	Description
ACD	The user must enter an ACD number or name.	Agent group	The user must enter an agent group name (as defined in Dictionary).

**Table 4-1: Report Input Field Types (Contd)**

Type	Description	Type	Description
<b>Agent state</b>	The user must enter an agent state name (standard or new name as defined in Dictionary). Standard names are ACD, AUX, ACW, and so on.	<b>Extension</b>	The user must enter an extension number of one to five digits (as administered for System 75/Generic 1/Generic 3) or three to five digits (as administered for System 85/Generic 2).
<b>Date</b>	The user must enter a date in mm/dd/yy format or as a relative number (for example, -7 for 7 days ago).	<b>Login ID</b>	The user must enter a login ID of one to nine digits (as administered for System 75/Generic 1/Generic 3) or four digits (as administered for System 85/Generic 2).
<b>Number</b>	The user enters a number, which may include digits to the right of the decimal point. This type applies if your variable field asks for specific values about ACD performance (for example, number of ACD calls or percent within service level).	<b>String</b>	The user enters a character string. Select this type only if one of the following is true:  <ol style="list-style-type: none"> <li>1. Your variable field is linked to a custom database item that you identify in INFORMIX as a CHAR column.</li> <li>2. Your variable field is linked to a standard database item that is a CHAR column, <b>AND</b> you want to allow the user to do pattern searching when running the report. See the following section, "Input Fields That Allow Pattern Matching".</li> </ol>
<b>Split/Skill</b>	The user must enter a split/skill number or name.	<b>Trunk group</b>	The user must enter the number or name of a trunk group.
<b>Time (duration)</b>	The user enters a number, including decimals, of seconds. This type only applies if your variable field asks for specific values regarding ACD performance (for example, time in AUX work, average speed of answer, or average talk time).	<b>VDN</b>	The user must enter a Vector Directory Number of one to five digits (as administered for System 75/Generic 1/Generic 3) or three to five digits (as administered for System 85/Generic 2).
<b>Time (point in time)</b>	The user enters a specific time of day in hh:mm format, either as military time or with am or pm appended.	<b>Vector</b>	The user must enter a vector number or name.
<b>Trunk state</b>	The user must enter a trunk state name (standard name or new name as defined in Dictionary). Standard names are IDLE, SEIZED, QUEUED, and so on.	<b>Call Work Code</b>	The user must enter a call work code name or number.

**Note**

If you select a `String` or `Number` field type, CMS will **not** accept any names (for VDNs, splits/skills, login IDs, agent groups, and so on) defined in Dictionary. In addition, CMS will **not** check permissions or system limits.

Basically, the `Number` type allows the user to enter any number. The `String` type allows the user to enter any number, letter of the alphabet, or keyboard symbol in any format.

**Note**

The field type **does not** determine what database item(s) the variable represents. The database item(s) linked to the variable are specified in the Row Search window.

## Input Fields That Allow Pattern Matching

CMS can search for values in certain database items according to wildcard search patterns. As a result, you can create a custom report that allows report inputs based on character strings, plus either `*` (matches on blank and all characters) or `?` (matches on any single character). CMS then includes data for all items that match the character strings the user entered.

The standard database items that allow this type of searching are:

VDN (the value is a VDN number)

EXTENSION (the value is an extension number)

LOGID (the value is an agent login ID)

EQLOC (the value is a 9-digit trunk location number)

CWC (the value is a call work code)

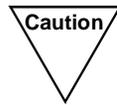
ROW\_DATE (the value is a date)

In addition, any custom database items that you define as CHAR columns in INFORMIX\* will also allow this type of searching.

As an example of matching with `*`, if an input field were a `String` type and were associated with the LOGID database item, the user could enter `1*`, and CMS would include data for all agents with login IDs that start with 1 (1, 10, 1238, 190, and so on, depending on the switch's administered login length). As an example of matching with `?`, if an input field were a `String` type and were associated with the VDN database item, the user could enter `21?0`, and CMS would include data for all VDNs that start with 21, end with 0, and have any single character appearing between the 21 and the 0 (2100, 2110, 2120, 2130, and so on).

---

\*INFORMIX is a registered trademark of Informix Software, Inc.



If you select `String` for an input field, CMS will not check a user's inputs in that field for appropriate read permissions or valid switch parameters. If you want CMS to check permissions for a VDN input field, you must select the `VDN` field type. If you want CMS to check switch parameters for a VDN, login ID, extension, or call work code input field, you must select that field type, **not** `String`. In addition, if you select `String` for a field, the user will not be able to enter Dictionary names. So, again, if you want to let the user enter VDN, login ID, or call work code names to run a report, you must select that specific field type, **not** `String`.

---

## Step 8: Associate an ACD with the Variable Field

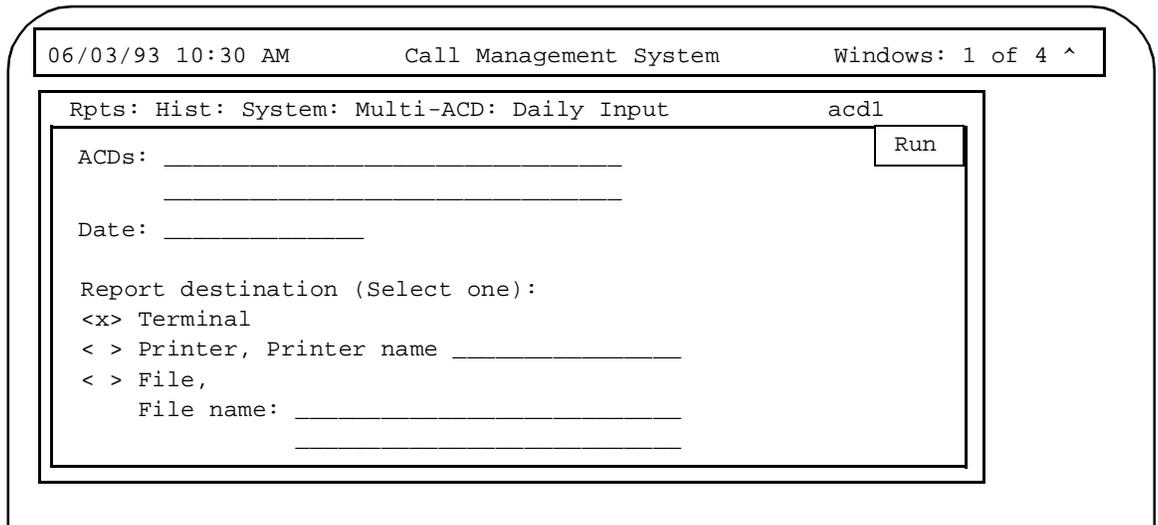
Enter an `x` in the `Associated ACD` list to associate the variable field with either the current ACD or a user-selected ACD. You **must** select an associated ACD if the input field you are defining is a type listed under the heading (`associated ACD required`). These field types require an associated ACD because they are administered for each ACD. For other field types not administered per ACD, CMS ignores any selection of an associated ACD.

Select `Current ACD` if either of the following conditions is true:

- You have only one ACD.
- You always want the report to show data for the user's current ACD.

Select `Variable name` if you want to let the user select the ACD. If you select `Variable name`, you must also enter a name of up to eight characters in the field next to the `Variable name` list item.

Using a variable name for the associated ACD is most useful when you are creating a multi-ACD report. For example, the Report Input window in Figure 4-4 is for a multi-ACD system report.



**Figure 4-4: Sample Multi-ACD Report Input Window**

**Note** Select Variable name only if the user(s) who will run the report has read permission for more than one ACD.

**Note** Before you can select Variable name for an input field's associated ACD, you must define a separate report input field for the ACD number/name. This field must have:

- An assigned field type of ACD
- The same variable name you are assigning to the associated ACD.

## Step 9: Save a Variable Input Field

Select the Add action list option to save the definition of the variable input field.

**Note** Add saves newly defined input fields. If you have previously saved an input field definition and you are changing it, you must use Modify instead.

To define more input fields, press **Ctrl** **Z** to clear the Define Input window, and repeat steps 2 through 9.

**Note** If you are defining a real-time report, you **can not** and **do not need to** define an "Update Rate in Seconds" input field. CMS will put this field in the Report Input window automatically.

If you are defining an historical report, you **can not** and **do not need to** define fields for "Report Destination." CMS will put this field in the Report Input window automatically.

## Defining the Order in Which Input Fields Appear

On the Report Input window, CMS will display your input fields in the same order you defined them in. However, you have the option of changing this order. To change the order in which the input fields appear, do the following steps.

1. **After** you have defined (**and saved**) all of your input fields, select the `Order` action list option.

→ *The Define Input: Order window appears. The window displays the prompts for each input field you have defined.*

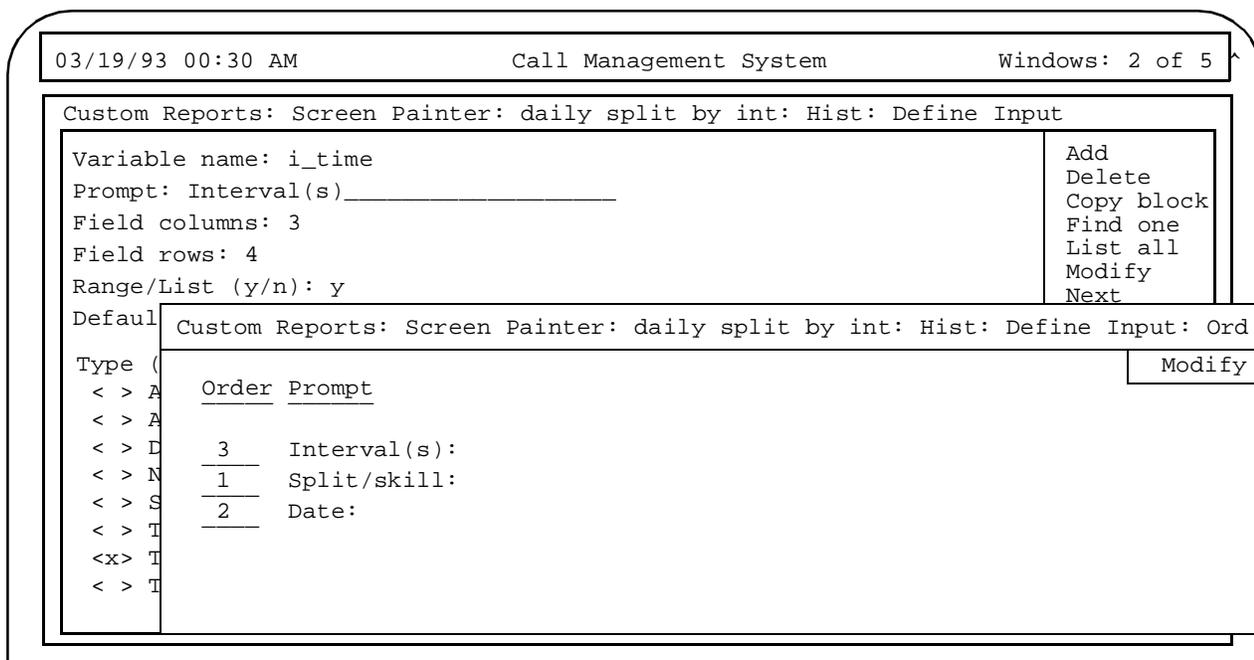


Figure 4-5: The Define Input: Order Window

2. Enter **1** next to the prompt you want to appear first on the Report Input window. Enter **2** for the second prompt, **3** for the third, and so on.
3. Select the `Modify` action list option to save the display order. → *The Define Input: Order window disappears, and the cursor returns to its previous position on the Define Input window.*

## Changing Report Input Fields

1. On the Screen Painter, select the `Define input` action list option. → *The Define Input window appears.*
2. Enter the desired name in the `Variable name` field, and select `Find one`. → *The defined characteristics of the variable name appear.*

Before entering any variable names, you may first want to do a “List all” to see what report input fields you have already defined. If you copied an existing report design, report input fields defined for that report will also be copied and available in the Define Input window.

**Note** You can not do a “List all,” nor a “Find one” search, on multiple fields in the Define Input window. For a “Find one” search, you can only have an entry in the `Variable name` field. The other fields are ignored. For a “List all” search, all fields are ignored.

3. Change data in any field(s) except `Variable name`, and select the `Modify` action list option. → *The message Successful appears in the window's status line to indicate the input field definition has been changed.*

**Note** If you wish to change a variable name, you must delete the variable and then add a new one.

---

# Defining Report Fields

---

## General Information

A report consists of fields of data. Defining those fields is the central task of creating a custom report.

To define a field, you must specify the following items:

- The position of the field
- The length of the field
- The format of the field's data
- **Most importantly**, the specific data that goes in the field.

You do all of these tasks in a predefined sequence described in the following pages.

## What the x's, v's, and h's Mean in a Field

If you copy the design of an existing report, the field(s) on the Screen Painter will appear filled with x's, v's, or h's.

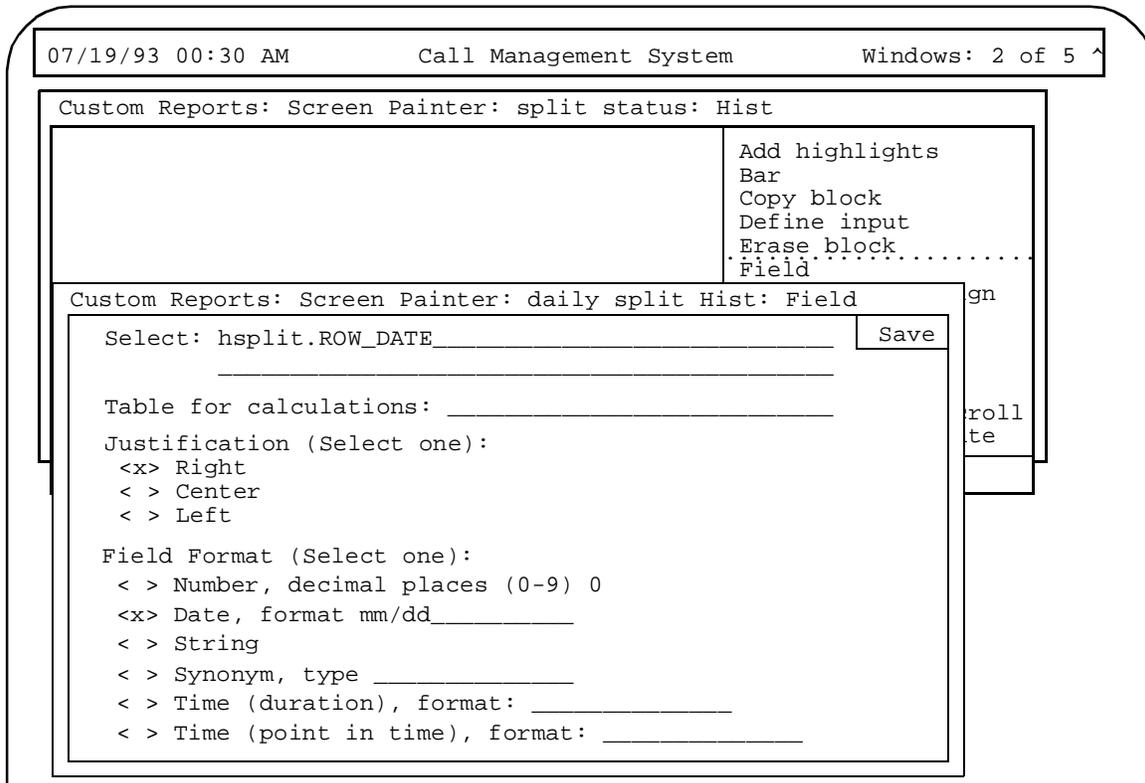
- x's indicate that the field is *discrete*. That is, the field will appear as a single field in the report because, based on the row search conditions assigned to the field, CMS will find only one value.
- v's indicate that the field is repeated *vertically* in the report. That is, the field will appear as a column of fields because, based on the row search conditions assigned to the field, CMS will find multiple values.
- h's indicate that the field is repeated *horizontally* in the report. That is, the field will appear as a row of fields because, based on the row search conditions assigned to the field, CMS will find multiple values.

See the "Assign a Row Search ID to Report Field(s) and Bar(s)" section in this chapter for illustrations of discrete and repeated fields.

---

## Step 1: Define the Position and Length of a Field

- 1a.** On the Screen Painter, position the cursor where you want a field to begin, and select the Field action list. → *The cursor returns to its original position, and the following message appears: Move cursor to define opposite corner of field and press RETURN.*
- 1b.** Move the cursor using the arrow keys to define a field length, and press **Return**. Be sure the field is long enough to contain the data. If the field is too short for a value, the report will show asterisks (\*) in the field or, if the data is a word, cut letters off. → *The field appears as a question mark (?) followed by x's. The question mark indicates that you have not yet assigned a Row Search ID to the field. The Field window also appears.*



**Figure 4-6: The Field Window**

## Step 2: Define the Field's Data Expression

In the `select` field (shown in Figure 4-6), enter a data expression to tell CMS two things:

- What table column(s) should supply data to the field.
- How to manipulate that data.

CMS actually picks out values from a table with both row and column identifiers. CMS identifies rows of data according to the user's inputs and the row search conditions you define (see the "Defining the Rows of Data for a Report" section in this chapter). CMS identifies columns according to the data expression you define here.

You can enter the following types of data expressions:

### Database items

A database item is the name of a column of data in a table, either standard or custom. When you enter a database item, you must always add the name of a table and a period (.) as a prefix. The format is as follows:

```
<table name>.<database item>
```

Examples:

```
dsplit.ACDCALLS
```

```
hagent.STARTTIME
```

```
ctkgrp.NUMINUSE
```

### Standard database items

Standard database items are listed in Dictionary as having all upper-case letters (as in the preceding examples).

A standard database item can store:

- Identifiers (for example, `SPLIT`, `VDN`, `LOGID`, and so on).
- Timed data (for example, `ACDTIME`, `ABANTIME`, `AUXOUTIME`, and so on).
- Event counts (for example, `ACDCALLS`, `INTERFLOWCALLS`, `ABNCALLS`, and so on).
- **For real-time and agent trace reports**, current state data (for example, `WORKMODE`, `DURATION`, `NUMINUSE`, and so on).

See Appendix A, "Database Items and Calculations" for a description of database tables and items including the exceptions, forecast, and login/logout tables. See Chapter 6, "Advanced Report Design" for more

information about custom reports that include exceptions and forecast data.

**Remember**—Standard database items are often shared by more than one table. For example, ABNCALLS can identify a column in the Current Interval Split, Daily Split, or Intrahour Agent tables (or many other tables). Thus, CMS can determine the exact database item only when it is identified with a table.

### Custom database items

You must enter a custom database item, with the custom table name as a prefix, exactly as you defined it in Dictionary. The data identified by a custom database item depends entirely on the data you entered for the item in the custom table (see Chapter 6, "Advanced Report Design").

## Constants

A constant is the name of a fixed numerical value (whole number or decimal) that you define in Dictionary (see Chapter 7, "Dictionary"). Constant names may be up to 20 characters long. A constant could represent a per-minute usage rate for trunks, a daily or hourly wage rate, or a service objective (like number of abandons, number of ACD calls, or percent within service level). A constant could also represent an average for the estimated dollar loss of an abandoned call, which could then be used to calculate daily loss of revenue due to abandoned calls. No standard constants exist in CMS when it is first installed. Therefore, you must define every constant you want to use.

Using constants only makes sense if you have a fixed value that you want to use under one or both of the following conditions:

- The constant is a value that you will use in a number of different custom reports (for example, an average wage rate).
- You would not be able to remember the numerical value, but could remember a name assigned to the value (for example, for the \$9.50 hourly wage rate for an agent called Smith, you could have a constant called Smithwage).

## Calculations

A calculation is a combination of database items and arithmetic operators. You may also include constants in a calculation. The arithmetic operators are:

+	add
-	subtract
*	multiply

/ divide  
 () perform first

Some examples of calculations are:

```
dsplit.ACDCALLS/dsplit.ACETIME
```

```
hagent.AUXOUTTIME+hagent.ACWOUTTIME
```

```
100*((cagent.I_ACETIME+cagent.I_ACWTIME)/
cagent.I_STAFFTIME)
```

Arithmetic operations are generally performed in order from left to right. However, multiplication and division operations are performed before addition and subtraction operations, unless the addition or subtraction operations are enclosed in parentheses. Operations in parentheses are always performed first. If more than one set of parentheses is used, the operation in the set farthest to the left is performed first. If one set of parentheses is inside of another set, the operation of the inner set is performed first.

## Calculation names

A calculation name is a name, as defined in Dictionary, that can substitute for the actual calculation. The calculation name can be a standard name (used in standard reports) or a name you define. You can not append a table name to a calculation name. Therefore, you must specify a table name in the `Table for calculations` field.

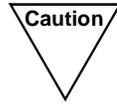
**Note**

CMS differentiates between upper-case and lower-case letters in calculation names. Therefore, be sure you enter the desired calculation name *exactly* as it appears in Dictionary.

A calculation name normally reflects the purpose of the calculation. As a result, entering a name is an easier, more meaningful way to define data for a report field. More importantly, if you use a calculation name in many custom reports and later decide to change the calculation, you can simply make your changes once in Dictionary. CMS will then apply those changes to every report that uses the calculation name.

For example, say that you have several different custom split reports, and in each report, a field uses the standard calculation name `PERCENT_ACD_TIME`. `PERCENT_ACD_TIME` represents the calculation `100*((I_ACETIME+I_ACWTIME)/I_STAFFTIME)`. This calculation, when assigned to the Intrahour Split table, finds the percentage of time a split's agents spent on ACD calls while logged in. The calculation includes talk time (`I_ACETIME`) and after-call-work time (`I_ACWTIME`). If you no longer wish to include after-call-work time in the calculation, you can change the calculation in Dictionary such that `PERCENT_ACD_TIME`

represents  $100 * (I\_ACD\_TIME / I\_STAFF\_TIME)$ . Then, any custom report that uses the calculation name `PERCENT_ACD_TIME` will reflect the new calculation.



If you change the calculation for a standard calculation name, the change will affect any standard report, as well as any custom report, that uses that calculation name.

At times, using calculation names helps save space in the `Select` field so you can create more complex calculations. For example, if you wanted the average time agents spent on all extension calls (both incoming and outgoing), you might have to add the following calculation:

```
(csplit.ACWINTIME+csplit.AUXINTIME+csplit.ACWOUTTIME+csplit.AUXOUTTIME)/(csplit.ACWINCALLS+csplit.AUXINCALLS+csplit.ACWOUTCALLS+csplit.AUXOUTCALLS)
```

Unfortunately, the `Select` field is not long enough to enter the complete calculation. However, you could define in Dictionary two separate calculation names for each half of the calculation.

That is, for:

```
(csplit.ACWINTIME+csplit.AUXINTIME+csplit.ACWOUTTIME+csplit.AUXOUTTIME),
```

you could enter, in Dictionary, the calculation name:

```
TIME_ON_NON-ACD_SUM with the assigned calculation (ACWINTIME+AUXINTIME+ACWOUTTIME+AUXOUTTIME).
```

Likewise, for:

```
csplit.ACWINCALLS+csplit.AUXINCALLS+csplit.ACWOUTCALLS+csplit.AUXOUTCALLS),
```

you could enter the calculation name:

```
NON-ACD_CALLS_SUM with the assigned calculation (ACWINCALLS+AUXINCALLS+ACWOUTCALLS+AUXOUTCALLS).
```

As a result, you can enter the following calculation in the `Select` field:

```
TIME_ON_NON-ACD_SUM/NON-ACD_CALLS_SUM
```

Then, you can enter the table name `csplit` in the `Table for calculation` field.

## Note

You **should not** add table names to your custom calculations in Dictionary. Doing so makes the assigned calculation name less flexible for use in custom reports. Also, if you append table names to the Dictionary calculation and then also assign a table name to the calculation name in the Field window, the report will fail.

## Aggregate Functions

An aggregate function is a prefix attached to a database item, a calculation, parts of a calculation, or a calculation name. When you define an aggregate function, you must place the database item or calculation in parentheses (as in the following example).

```
max(dsplit.ACDTIME/dsplit.ACDCALLS)
```

## Note

In real-time reports, fields with aggregate functions **can not** share a set of row search conditions with non-aggregate fields. And for historical reports, special considerations exist when you assign the same row search conditions to both aggregate functions and other types of data expressions. See "Repeating Aggregate Function Values in Historical Reports" in Chapter 6, "Advanced Report Design" of this manual.

An aggregate function can be one of four types. Each type retrieves a different value from the data.

- **max**

The **max** aggregate function retrieves the highest value for a calculation or database item over the time frame of the report.

For example, say that your Intrahour Split table contained data as shown in Figure 4-7 and you entered **max(hsplit.ACDCALLS)** for a field in a report. If you ran the report for Split 1 for all intervals on 07/02/93, CMS would find all rows shown in bold. However, CMS would display only the value **418** (shown in the box), which is the maximum ACD calls in any single interval on 07/02/93. Likewise, if you entered **max(ACDTIME/ACDCALLS)** for the field, CMS would display the value **101.53** (which is the highest average talk time in any single interval on 07/02/93).

DATE	STARTTIME	SPLIT	ACDCALLS	ABANDONS	ACDTIME	ABNTIME		
070193	1000	2	391	31	19768	603	.	.
070193	1000	3	142	10	9786	203	.	.
070193	1100	1	480	39	33389	789	.	.
070193	1100	2	491	22	26789	549	.	.
070193	1100	3	297	15	12530	402	.	.
<b>070293</b>	<b>0800</b>	<b>1</b>	<b>399</b>	<b>36</b>	<b>37651</b>	<b>1452</b>	.	.
070293	0800	2	299	20	29602	7616	.	.
070293	0800	3	138	13	11523	2569	.	.
<b>070293</b>	<b>0900</b>	<b>1</b>	<b>400</b>	<b>46</b>	<b>36178</b>	<b>1745</b>	.	.
070293	0900	2	300	33	24303	1109	.	.
070293	0900	3	225	12	15628	367	.	.
<b>070293</b>	<b>1000</b>	<b>1</b>	<b>394</b>	<b>40</b>	<b>40002</b>	<b>1322</b>	.	.
070293	1000	2	323	34	29881	1188	.	.
070293	1000	3	105	14	12115	704	.	.
<b>070293</b>	<b>1100</b>	<b>1</b>	<b>418</b>	<b>41</b>	<b>34819</b>	<b>1256</b>	.	.
070293	1100	2	246	30	21173	980	.	.
070293	1100	3	100	18	10281	589	.	.
070393	0800	1	417	34	37856	1340	.	.
070393	0800	2	247	24	26308	1299	.	.

Figure 4-7: Sample Intrahour Split Table Data

- **min**

The **min** aggregate function retrieves the lowest value for a calculation or database item over the time frame of the report.

For example, say that in the previous example, you entered **min(hsplit.ACDCALLS)** instead of **max(hsplit.ACDCALLS)** for the field. If you ran the report for Split 1 for all intervals on 07/02/93, CMS would display only the value **394** which is the smallest number of ACD calls in any single interval on 07/02/93.

- **sum**

The **sum** aggregate function retrieves the sum of all values for a calculation or database item over the time frame of the report.

For example, say again that the Intrahour Split table contained data as shown in Figure 4-7. You enter **sum(hsplit.ACDCALLS)** for a field in a report. For Split 1 and all intervals on 07/02/93, CMS would take the values for **hsplit.ACDCALLS** and add them up to display only the value **1611**. Likewise, if you entered **sum(hsplit.ABANDONED+hsplit.ACDCALLS)** for the field, CMS would display only the value **1774** which is the total of all ACD calls and abandons for Split 1 on 07/02/93.

- **avg**

The **avg** aggregate function retrieves the average of all values found over the time frame of the report. Thus, using the sample table in Figure 4-7, if you enter **avg(ACDCALLS)** for a field and run the report for Split 1 for all intervals on 07/02/93, CMS would display the value **402.75** which is the average of **399**, **400**, **394**, and **418**.

## count(\*)

The **count(\*)** expression tells CMS to count the number of rows in a table that match certain row search conditions (as defined in the Row Search window). For example, say that you want the number of agents in a split that had more than five extension-out calls. In this case, the Row Search window would have a row search statement like the following:

```
Select rows where: SPLIT = 1 and
                    (ACWOUTCALLS+AUXOUTCALLS) > 5
```

This statement means, "Find rows of data where the SPLIT value is 1 and total extension-out calls, for both ACW and AUX states, is greater than 5." Then, by entering **count(\*)** in the **Select:** field in the Field window, the report field would count the number of rows that match and display the number in your report.

Note
------

**Do not** append a table name to the beginning of **count(\*)**.

**count(\*)** is always a number of matching rows and only makes sense if you want to track some specific measure of performance by ACD elements (for example, the number of agents currently logged into a split, the number of trunks that were occupied for more than 80% of the time, the number of VDNs that had over 30 abandoned calls in an intrahour interval).

Thus, **count(\*)** actually allows you to create fields that act as exception counts.

## Data from More Than One Table

A calculation can merge data from more than one table in a report field.

For example, you may want the percentage of a split's ACD calls an agent handled in a day. Thus, you may enter a calculation that merges data from the Daily Agent and Daily Split tables, as in the following example.

```
dagent.ACDCALLS/dsplit.ACDCALLS
```

When you merge data from two tables, you must define your row search conditions in a special way. See "Selecting Rows from More Than One Table" in Chapter 6, "Advanced Report Design" of this manual.

**Note** You can not use calculation names for a field in which you merge data from two tables.

---

### Step 3: Define the Table(s) for Calculation Names

Enter a table name in the `Table for calculations` field **only** if you entered a calculation name in the `Select` field. The table name tells CMS in what table to look for the database items in the calculation.

**Note** The `Table for calculations` field is necessary because you **can not** append a table name to a calculation name in the `Select` field.

For example, look at the following entries:

```
Select: AVG_POS_STAFF
Table for calculation: hsplit
```

These entries mean “Take the calculation defined in Dictionary for `AVG_POS_STAFF`, which is `I_STAFFTIME/(INTERVAL*60)`, and apply the `hsplit` table name to the database items.” In effect, the two fields make the calculation `hsplit.I_STAFFTIME/(hsplit.INTERVAL*60)`.

---

### Step 4: Justify Data in the Field

Select, from the `Justification` list, the way you want CMS to line up data when the data appears in the field. Normally, numerical data is right-justified so that the right hand side lines up in a column. Names are normally left-justified so that the first character of each name is lined up. However, you may choose any of the three options for any type of data.

---

### Step 5: Define the Format for the Field

Enter an `x` to select an item in the `Field Format` list. You must also complete the field associated with the list item.

The format type and the format you specify in the associated field tell CMS how to display the values it finds for the field. However, the format

you select depends on the type of data CMS will display. The format options are as follows:

**Number** Select `Number` if the field will display a number of events, an average, or a percentage. You must also specify a number of decimal places for the field. Enter `0` if you do not need decimal places displayed. If the field's expression were `ACDCALLS`, you would select `Number` and enter `0` in the field. However, if the field expression were to generate an average (for example,  $I\_STAFFTIME / (INTERVAL * 60)$  – the average staffed positions per interval), you may want to include decimal places.

When you run the report, the decimal point and the decimal places will use up spaces in the field. For example, if the field contains six spaces and you specify three decimal places for the field, then data will appear with two characters to the left and three characters to the right of the decimal point (for example, `12.344`).

**Date** Select `Date` if the field expression is `ROW_DATE`. You must also specify a date format, with appropriate punctuation. You may select a single format or a combination of formats. The available formats are as follows:

**Table 4-2: Data Formats for Report Fields**

<b>mm</b>	The numerical month (for example, <code>12</code> for December)
<b>MMM</b>	The month represented by three letters (for example, <code>APR</code> for April).
<b>yy</b>	The year as two digits (for example, <code>94</code> ).
<b>YYYY</b>	The year as four digits (for example, <code>1994</code> ).
<b>dd</b>	The numerical day of the month (for example, <code>31</code> ).
<b>jjj</b>	The day of the year in the Julian calendar (for example, <code>151</code> for May 31).
<b>www</b>	the day of the week as three letters (for example, <code>THU</code> ).

**String** Select `String` for those database items whose data CMS identifies as character strings, not numbers. (Each of these items is identified as being a CHAR column type in INFORMIX terminology.) Even though these items store numbers, CMS searches for values as if the items stored nonnumeric symbols and alphabetic words, as well as numbers.

Database items for which you might select `String` are as follows:

- VDN1 (the value is a VDN number)
- EXTENSION (the value is an extension number)
- LOGID (the value is an agent login ID)
- EQLOC (the value is a 9-digit trunk location number)
- CWC (the value is a call work code)
- Custom database items with the **CHAR** column type.

String here **does not** have the same meaning as string-value database item, as defined for Dictionary. For the purposes of custom report design, Dictionary names for string-value database items are referred to as **synonyms**, and include names for agents, splits, VDNs, trunk groups, and vectors. In fact, for the VDN and LOGID database items, you may wish to select `Synonym`, not `String`, since you may have assigned names to VDNs and login IDs in Dictionary.

**Synonym** Select `Synonym` to display a name defined in Dictionary, instead of the value stored in the database table(s). You must also enter the Dictionary name type.

The type must correspond to the database item you enter in the `Select` field. The types you enter are as follows:

**Table 4-3: Synonym Types for Report Fields**

Names of ACD Entities		Agent States	
Type	Database Item	Type	Database Item
acd	ACD	workmode <sup>‡</sup>	WORKMODE
agname	LOGID	ag_orig <sup>**</sup>	ORIGIN
tkgrp	TKGRP	ag_dir	DIRECTION
split	SPLIT <sup>†</sup>	ag_dest	DESTINATION
vdn <sup>*</sup>	VDN		
vector <sup>*</sup>	VECTOR		
Trunk States		Split States	
Type	Database Item	Type	Database Item
tkstate	TKSTATE	slvlchg	SVCLEVELCHG
tk_pri	PRIORITY	per_chg	PERIODCHG
tk_qtype	QUETYPE		
tk_vpri <sup>*</sup>	PRIORITY		
tk_dir	DIRECTION		
tk_allbusy	ALLINUSE		

\* Available only with the CMS Vectoring feature.

† Contains skill or split values.

‡ Applies to the WORKMODE database item in both the Agent and Agent Trace tables.

\*\* Available only with adjunct routing on a Generic 3.

See Chapter 7, "Dictionary" for a complete description of synonym types.

**Time (duration)** Select Time (duration) if the field expression will display a length of time. You must also enter a time format with the appropriate punctuation.

CMS stores durations (for example, ACDTIME) as a number of seconds. However, you may choose to display time as minutes and seconds, or even hours, minutes, and seconds.

The time formats available are as follows.

<b>ss</b>	Display time only as the number of seconds. You must enter as many s's as needed to display the seconds. If the number of seconds can reach six digits, enter <b>ssssss</b> .
<b>mm</b>	Display time only as the number of minutes. You must enter as many m's as needed to display the minutes. If the number of minutes can reach six digits, enter <b>mmmmmm</b> .

<b>hh</b>	Display time only as the number of hours. You must enter as many h's as there are digits needed to display the hours. If the number of hours can reach three digits, enter <b>hhh</b> .
<b>mm:ss</b>	Display time as minutes and seconds. In this format, CMS will increase the minutes count by one and reset the seconds count to 00 when the seconds count reaches 60. The two digits for minutes will count minutes up to 99. You can specify more than two digits for minutes if the minutes will exceed 99. For example, if you enter <b>mmmm:ss</b> , CMS might display 2822:35 (2822 minutes and 35 seconds) in the report.
<b>hh:mm</b>	Display time as hours and minutes. In this format, CMS will increase the hours count by one and reset the minutes count to 00 when the count reaches 60. The two digits for hours will count hours up to 99. You can specify more than two digits for hours if hours will exceed 99. For example, if you enter <b>hhh:mm</b> , CMS could possibly display 333:35 (333 hours and 35 minutes) in the report.
<b>hh:mm:ss</b>	Display time as hours, minutes, and seconds. In this format, CMS will increase the minutes count by one when the seconds count reaches 60. CMS will also increase the hours count by one when the minutes count reaches 60. With this format, you may increase the digits for hours if necessary, but <b>not</b> the minutes digits.

**Time  
(point in  
time)**

Select Time (point in time) if the field expression will display a point in time (for example, **10:34am**). You must also enter a time format with the appropriate punctuation.

You can use one of the following formats:

<b>HH</b>	The hour only, in military time (24-hour clock). For example, 15 equals 3:00 p.m.
<b>hh</b>	The hour only, according to a 12-hour clock. For example, 3 could mean 3:00 a.m. or 3:00 p.m. For this reason, if you use hh, you should also add am (hham).
<b>mm</b>	The number of minutes after the hour only.
<b>ss</b>	The number of seconds into the minute.
<b>HH:mm:ss</b> or <b>HH:mm</b>	Military time, either to the second or to the minute.
<b>hh:mm:ssam</b> or <b>hh:mmam</b>	12-hour clock time, with AM or PM attached, either up to the second or up to the minute.

---

## Step 6: Save the Field Definition

Select the `Save` action list option. → *The Field window disappears, and the message Successful appears in the Screen Painter's status line to indicate the field definition has been added.*

To define additional fields, repeat steps 1 through 6.

**Note** You must assign a Row Search ID to the field before your field definition is truly complete. When you do, the question mark (?) will change to that ID number. See the "Defining the Rows of Data for a Report" section in this chapter.

---

## Changing a Field Definition

1. On the Screen Painter, place the cursor on the field you want to change, and select `Field`. → *The cursor returns to the field and rests on the last space of the field. The following message appears on the Screen Painter status line: Move cursor to define opposite corner of field, press RETURN.*
2. If desired, move the cursor using the arrow keys to either make the field longer or shorter, and press `Return`. → *The Field window appears.*

3. Overtyping any data in fields you want to change, and selecting Save. → *The Field window disappears, the message Successful appears in the Screen Painter status line, and the cursor returns to the field you just changed.*

---

# Defining Bars in a Report

---

## General Information



You may define bars in a custom report **only if** you have purchased the CMS Graphics feature. If you have not purchased the Graphics feature, the `Bar` action list option will **not** be available.

You may want a report to display data as bar graphs instead of numbers. Defining a bar or bars in a report is similar to defining fields, except in the way you define the format. To define a bar's format, you must specify the following items:

- The position and length of the bar.
- The direction of the bar — horizontal or vertical.
- The thresholds that cause the bar to change color.
- The scale of the bar.

## What the x's, v's, and h's Mean in a Bar

If you copy the design of an existing bar graph, the bar(s) will appear filled with `x`'s, `v`'s, or `h`'s.

- `x`'s indicate that the bar is *discrete*. That is, the bar will appear as a single bar in the report because, based on the row search conditions assigned to the bar, CMS will find only one value.
- `v`'s indicate that the bar is repeated *vertically* in the report. That is, the bar will appear as a series of bars, one over the other, because, based on the row search conditions assigned to the bar, CMS will find multiple values.
- `h`'s indicate that the bar is repeated *horizontally* in the report. That is, the bar will appear as a series of bars, side by side, because, based on the row search conditions assigned to the bar, CMS will find multiple values.

See the "Assign a Row Search ID to Report Field(s) and Bar(s)" section in this chapter for illustrations of discrete and repeated bars.

## Step 1: Define the Position and Length of a Bar

- 1a. On the Screen Painter, position the cursor where you want a bar to begin, and select the Bar action list option. → *The cursor returns to its original position, and the following message appears: Move cursor to define opposite corner of bar and press RETURN.*
- 1b. Move the cursor using the arrow keys to define the length and width of the bar, and press **Return**. → *A question mark (?) appears in the upper left corner of the bar. The question mark indicates that you have not yet assigned a Row Search ID to the bar.*
- The Bar window also appears.*

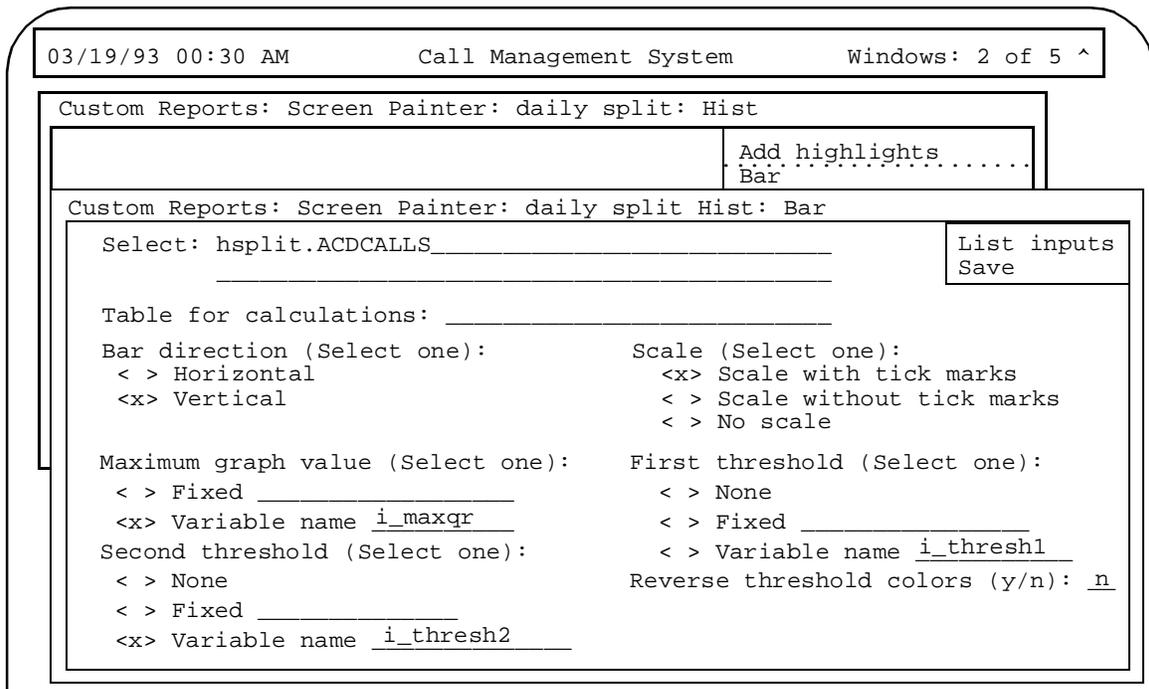


Figure 4-8: The Bar Window (with Sample Input)

## Step 2: Define the Bar's Data Expression

Enter a data expression in the `Select` field to tell CMS two things:

- What table column(s) should supply data to the bar.
- How to manipulate that data.

The rules for this `Select` field are identical to those of the `Select` field for the Field window. However, the following types of database items do not make sense for bars:

- Identifiers (for example, `SPLIT`, `VDN`, `LOGID`, and so on).
- Current state data (for example, `WORKMODE`, or `DURATION`.)
- Constants (unless they are part of a calculation).

Also, if a bar's expression is a database item that stores a number of seconds, the bar will normally show time as seconds. However, you can make the bar represent minutes by dividing the database item by 60.

In addition, to complete your definition of bar data, you must, as for field data, define row search conditions for the bar(s). This includes whether a bar you define will be repeated to display multiple bars for multiple values. See the "Defining the Rows of Data for a Report" section in this chapter.

---

## Step 3: Define the Table(s) for Calculation Names

Enter a table name in the `Table for calculations` field **only** if you entered a calculation name in the `Select` field. The table name tells CMS in what table to look for the database items in the calculation.

Note

The `Table for calculations` field is necessary when using calculation names because you **can not** append a table name to a calculation name in the `Select` field.

---

## Step 4: Define the Direction of the Bar

Enter an `x` in the `Bar direction` list to select either a horizontal or vertical format for the bar. `Vertical` means the bar will go up and down as values change. `Horizontal` means the bar will go left and right as values change.

## Step 5: Define the Bar Scale

Enter an **x** to select an option in the `Scale` list.

- **Scale without tick marks**

The scale will automatically appear in the report as a line parallel to the bar (see Figure 4-9). The line will be a fixed length equal to the maximum length of the bar. In this way, the end of the scale always represents the maximum graph value you define.

- **Scale with tick marks**

The scale will appear in the report as a line, segmented by evenly spaced marks (see Figure 4-9). For a vertical scale, a tick mark appears for each vertical character space. For a horizontal scale, a tick mark appears at every fifth horizontal character space.

- **No scale**

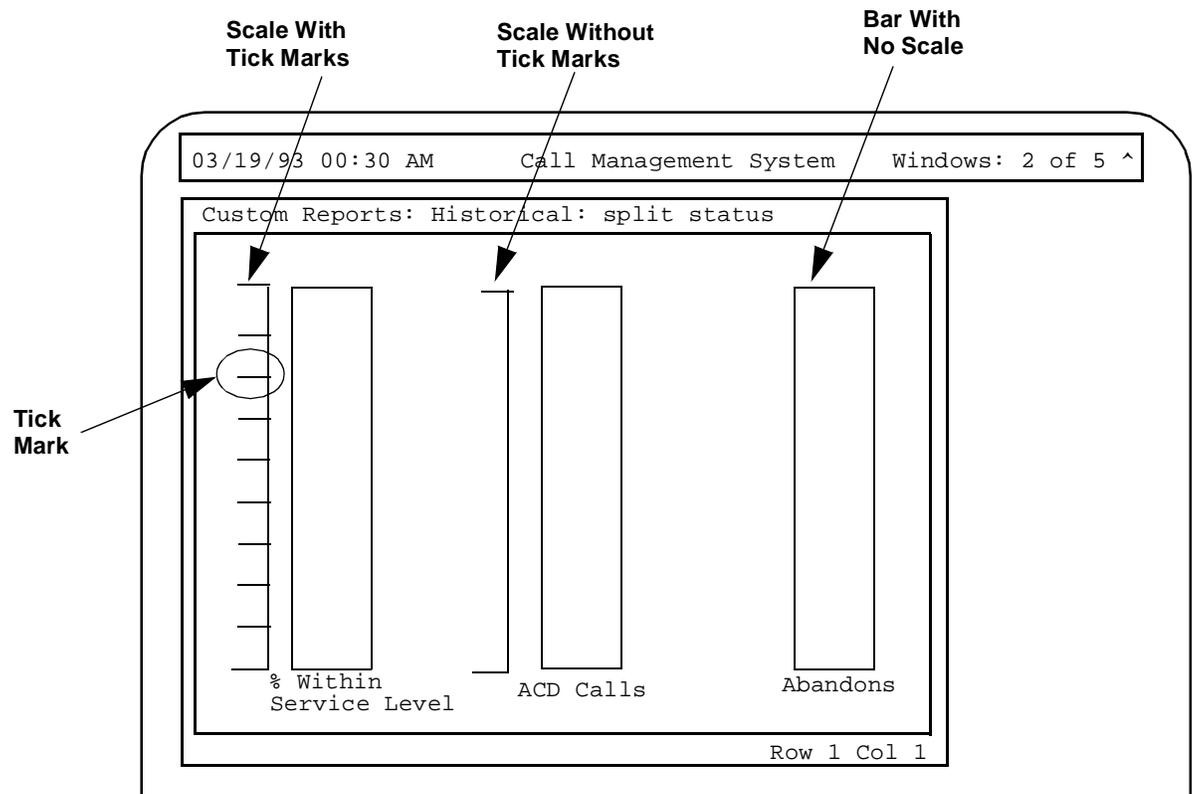
The bar will not have a scale (see Figure 4-9). You may want this option if the scale defined for another bar applies to the bar you are currently defining. For example, in Figure 4-9, the scale for the `ACD Calls` bar could apply to the `Abandons` bar.

A scale defined for one bar will appear in correct relation to other bars only if the following are true:

- All bars are parallel, have the same maximum length, and have the same starting points.
- All bars have the same maximum graph value.
- All bars display the same units (number of calls, averages, percentages, number of seconds, and so on).

Note

**Do not** enter any text or fields in the column immediately to the left of a vertical bar. And, **do not** enter any text or fields in the row immediately above a horizontal bar.



**Figure 4-9: Bars — With and Without Scales**

## Step 6: Define the Maximum Graph Value

Enter an  $\times$  in the Maximum Graph Value list to select either a fixed or variable maximum graph value. The maximum graph value is the value that the bar represents when the bar is at its maximum length or height (see Figure 4-10). The value must always be a whole number or decimal.

If you select *Fixed*, you must also enter, in the accompanying field, the value the bar should represent when the bar is at its maximum length or height.

If you select *Variable name*, you must also enter, in the accompanying field, a variable name that references a report input field. Thus, selecting *Variable name* allows the user to enter a maximum graph value for the bar when ordering the report. The variable name you enter must be identical to a variable name defined in the Define Input window.

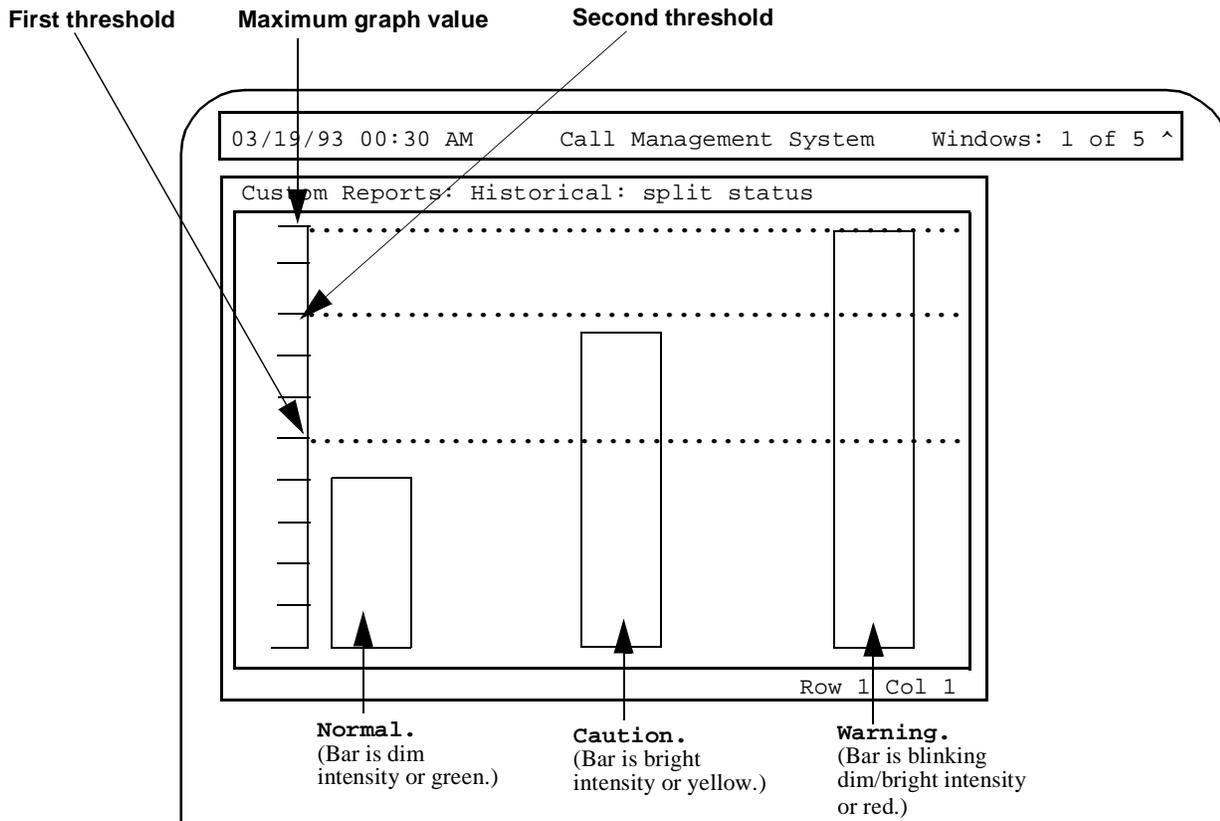


Figure 4-10: Bar Graph Thresholds

## Step 7: Define the First Threshold

Enter an **x** in the `First threshold` list to select a fixed threshold, variable threshold, or no threshold. The first threshold identifies the point at or above which the bar will change color — normally to indicate a caution condition (see Figure 4-10). The first threshold should have the lower value of the two thresholds. The value must always be a whole number or decimal.

If you select `None`, the bar will not have a first threshold at which the bar will change color.

If you select `Fixed`, you must also enter, in the accompanying field, the value at or above which the bar will change color.

If you select `Variable name`, you must also enter, in the accompanying field, a variable name. The variable name, which will reference a report input field, allows the user to enter a first threshold value for the bar when ordering the report. The variable name you enter must be identical to the variable name you assign to a report input field (see "Defining Fields for the Report Input Window" in this chapter).

## Step 8: Define the Second Threshold

Enter an **x** in the `Second threshold` list to select a fixed threshold, variable threshold, or no threshold. The second threshold identifies the point at or above which the bar will again change color — normally to indicate a warning condition (see Figure 4-10). The second threshold should have the higher value of the two thresholds. The value must always be a whole number or decimal.

If you select `None`, the bar will not have a second threshold at which the bar will change color.

If you select `Fixed`, you must also enter, in the accompanying field, the value at or above which the bar will change color.

If you select `Variable name`, you must also enter a variable name in the accompanying field. The variable name, which will reference a report input field, allows the user to enter a maximum graph value for the bar when ordering the report. The variable name you enter must be identical to the variable name you assign to a report input field (see the "Defining Fields for the Report Input Window" section in this chapter).

---

## Step 9: Select Normal or Reversed Thresholds

Enter a **y** or **n** to select reversed threshold colors or normal threshold colors. **n** means the bar will change to a caution color at the first threshold and change to a warning color at the second threshold.

Enter **y** if you want to reverse the meanings of the thresholds. With meanings reversed, the bar will be a normal color when it is **above** the second threshold. The bar will change to a caution color when the bar shrinks to or below the second threshold but remains above the first threshold. The bar will change to a warning color when the bar shrinks to or below the first threshold.

Reversed colors would be appropriate for a bar that represents the percentage of calls answered within service level (see Figure 4-11). In this case, you would want the bar to be a normal color when the percentage is high, a caution color when the percentage goes down, and a warning color when the percentage is very low.

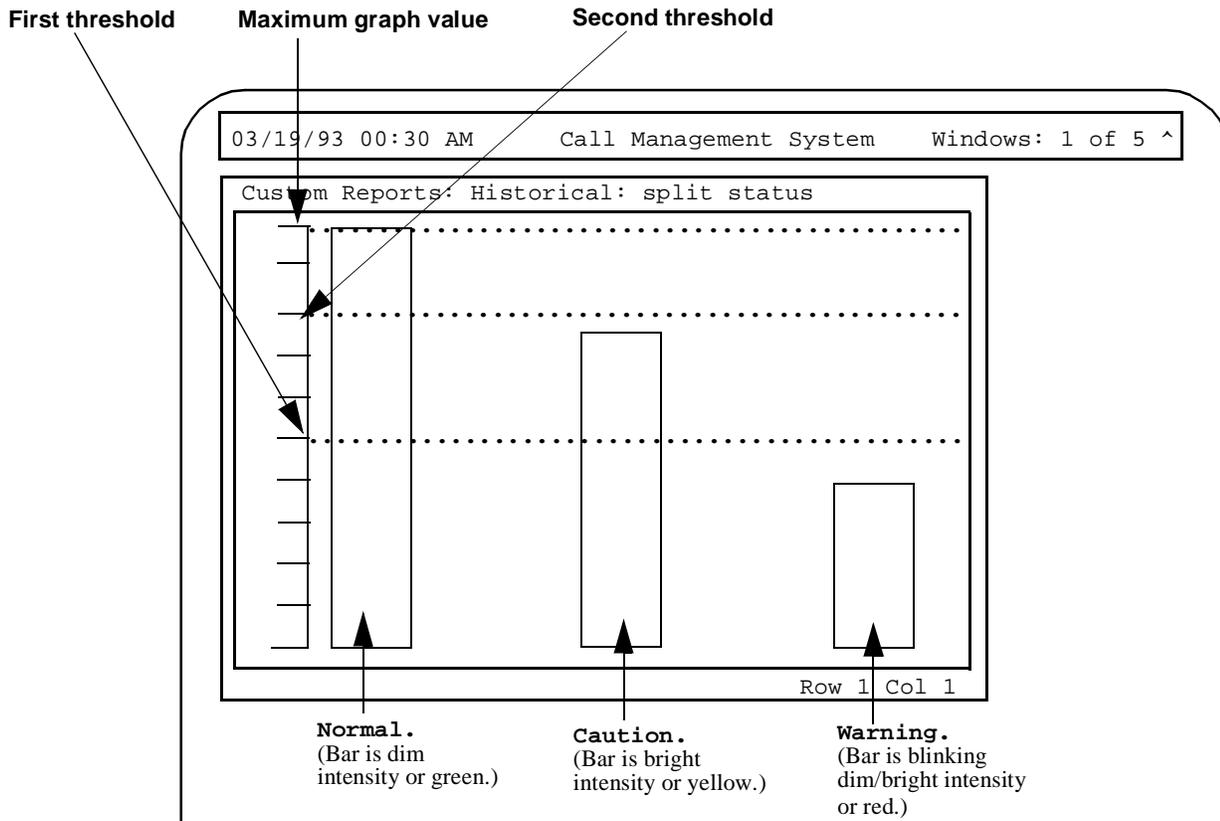


Figure 4-11: Reversed Bar Graph Thresholds

## Step 10: Save the Bar Definition

Select the **Save** action list option. → *The Bar window disappears, and the message Successful appears in the Screen Painter's status line to indicate the bar definition has been added.*

To define additional bars, repeat steps 1 through 10.

**Note** You must assign a Row Search ID to the bar before your field definition is truly complete. When you do, the question mark (?) will change to that ID number. See the "Defining the Rows of Data for a Report" section in this chapter.

**Note**

If a bar will be a repeated bar (as defined with the Row Search window), you can not define any other bars in the direction that the bar will repeat. That is, if the bar will be repeated vertically, no other bars (or text or fields) can appear directly below the bar. If the bar will be repeated horizontally, no other bars (or text or fields) can appear directly to the right of the bar.

## Changing a Bar Definition

1. On the Screen Painter, place the cursor on the bar you want to change, and select `Bar`. → *The cursor returns to the bar and rests on the lower right corner of the bar. The following message appears on the Screen Painter status line: Move cursor to define opposite corner of bar and press RETURN.*
2. If desired, move the cursor using the arrow keys to either make the bar bigger or smaller, and press `Return`. → *The Bar window appears.*
3. Overtyping any data in fields you want to change, and select `Save`. → *The Bar window disappears, the message Successful appears in the Screen Painter status line, and the cursor returns to the bar you just changed.*

---

# Defining the Rows of Data for a Report

---

## General Information

To complete the definition of a report's fields/bars, you must define the rows of the table(s) that supply data to the fields/bars. To do this, you must:

- Using the Row Search window (Figure 4-12), define the criteria needed to find the appropriate rows of data. Each set of criteria is stored by row search ID.
- Assign the row search ID(s) to the appropriate fields/bars.

Row search criteria are values for either **database items** or **calculations**. In most cases, however, your criteria will specify variable names, rather than specific values, for the database items or calculations. These variable names allow CMS to use the values entered in the Report Input window as its row search criteria. From the rows CMS finds, CMS then retrieves report data for the report fields. See "How CMS Stores and Retrieves Data" in Chapter 1, "Introduction to CMS Reports" for a description of this process.

**Note** If you copy the design of an existing report, the row search criteria will be copied, as will the report's input fields (as defined in the Define Input window). If you then delete or change a variable name in the Row Search window, you must delete or change that variable name in the Define Input window.

The task of defining the rows of data for report fields/bars is described in the following pages.

---

## Step 1: Access the Row Search Window

On the Screen Painter, select the Row search action list option. → *The Row Search window appears.*

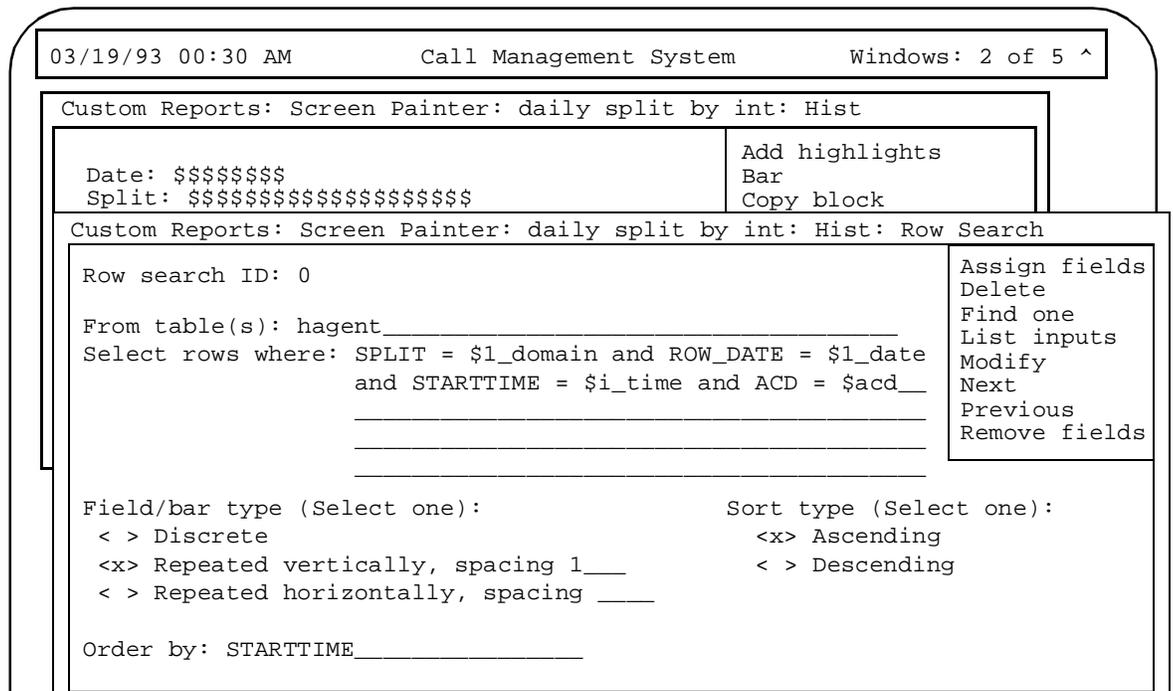


Figure 4-12: The Row Search Window

## Step 2: List the Report Input Variables

- 2a. Select the `List inputs` action list option to see the variable names previously defined on the Define Input window. → *The List Inputs window appears.*
- 2b. Print the window's contents via the `Commands` SLK and `Print window` option.
- 2c. Press `Exit` to return to the Row Search window. → *The List Inputs window disappears and the cursor returns to the Row Search window.*

**Note** If you defined report input fields in the Define Input window (or you copied a report design that has report input fields), your row search criteria will (and must) use the variable names for those input fields.

Conversely, to use a variable name in your row search criteria, an input field with that variable name must first be defined in the Define Input window.

---

### Step 3: Select a Row Search ID

Enter a number from 0 to 9 in the `Row search ID` field. The ID identifies the set (or one of the sets) of row search conditions you are using in the report. Thus, for a single report, you can use ten different sets of conditions to select rows of data.

You may create a new set of conditions from scratch or use Find One with Next/Previous to view and/or change an existing set of conditions. (If you have already assigned row search conditions to a field/bar on the Screen Painter, the row search ID will appear as the first character in that field/bar.)

**Note** If you are going to use multiple tables, at least one join clause must appear in the Row Search ID assigned to the field. A **join clause** makes the values that CMS searches on the same in both tables. In this way, the data extracted from the rows in both tables will be related.

A join clause has the following format:

```
tablename1.item1 = tablename2.item1
```

Where `item1` is a database item that the tables have in common.

---

### Step 4: Select Tables

In the `From table(s)` field, enter the name(s) of the table(s) whose rows will supply data. Use a comma to separate multiple table names.

Example:

```
From table(s): hagent,dagent_____
```

If you are going to assign this row search ID to a particular report field/bar, the name(s) in the `From table(s)` field must include the table name(s) that you assigned to the report field.

Note

If a report field merges data from two tables, you must include both table names in this field. See "Selecting Rows from More Than One Table" in Chapter 6, "Advanced Report Design" of this manual.

The CMS database table names are as follows:

**Table 4-4: Real-Time Tables**

<b>Current Interval</b>	<b>Previous Interval</b>
csplit	psplit
cagent	pageant
ctrunk	ptrunk
ctkgrp	ptkgrp
cvdn	pvdn
cvector	pvector
ccwc*	pcwc*

\* cwc represents call work code.

**Table 4-5: Historical Tables**

<b>Historical Intrahour</b>	<b>Daily</b>	<b>Weekly</b>	<b>Monthly</b>
hsplit	dsplit	wsplit	msplit
hagent	dagent	wagent	magent
htrunk	dtrunk	wtrunk	mtrunk
htkgrp	dtkgrp	wtkgrp	mtkgrp
hvdn	dvdn	wvdn	mvdn
hvector	dvector	wvector	mvector
hcwc	dcwc	wcwc	mcwc
	d_secs	w_secs	m_secs
<b>Exceptions</b>	<b>Forecast</b>	<b>Login/Logout</b>	<b>Call Records</b>
spex	f_cdayrep	haglog	call_rec*
agex	f_cday		
trkex			
vdnex			
vecex			
linkex			
mctex			

\* Only for internal call records.

See Appendix A, "Database Items and Calculations" for a description of these tables and the database items they contain.

## **Step 5: Select Rows in the Table(s)**

In the `Select rows where:` field, enter a selection criteria statement to tell CMS how to select data from the table. The statement specifies value(s) for one or more database items or calculations.

**Note** To ensure a reasonable run time for your report, the database items you specify in the `Select rows where:` field should include index items. For an historical report, you should especially include a “where” clause with the ROW\_DATE database item. If your row search is based on items that are **not** indexes, your report may take a very long time to run. To check that your row search items are indexes, see the appropriate table listing in Appendix A, "Database Items and Calculations".

**Note** Your row search criteria **must always** include the selection of an ACD. See "Selecting Rows from an ACD" later in this section.

## Basic “Where” Clause

A basic clause has the following format:

**Expression Relational Operator Value**

The **Expression** can be a database item or calculation. The **Value** is a whole number. Relational operators available for a “where” clause are as follows:

=	Equal to
< > or !=	Not equal to
>	Greater than
>=	Greater than or equal to
<	Less than
<=	Less than or equal to

You will use the = relational operator most often.

**Note** Also, **do not** try to enter calculation names. They will not work in the `Select rows where` field.

**Note** **Remember** — standard database items consist of upper-case letters only.

As an example of a basic where clause, say that you are creating a real-time report using data from the Current Interval Split table. Also say that you defined three report fields for the report:

Split: (the SPLIT database item)

ACD Calls: (the ACDCALLS database item)

Average Talk Time: (the calculation ACDTIME/ACDCALLS)

Your "where" clause might be:

**Select rows where: SPLIT = 5**

When you run the report, CMS finds the row in the table (Figure 4-13) for Split 5 and fills in the report fields with data from that row (in bold in the figure).

SPLIT	ACDCALLS	ABANDONS	ACDTIME	ABNTIME
1	443	48	36898	988
2	234	37	20012	777
3	111	20	13111	400
4	652	59	53442	1058
<b>5</b>	<b>451</b>	<b>32</b>	<b>27635</b>	<b>644</b>
6	93	11	15321	245
7	509	43	35401	851
8	391	31	19768	603
9	142	10	9786	203
10	480	39	33389	789

**Figure 4-13: Sample Current Interval Split Table**

Thus, the report fields shows the following data:

Split: 5

ACD Calls: 451

Average Talk Time: 61 (the result of **27635/451**)



Actually, this example of row search criteria would also include the selection of an ACD. See "Selecting Rows from an ACD" later in this section.

## “Where” Clause with Variable

The previous examples create **hardcoded** row search conditions. That is, when you run the report, CMS always searches for the values you entered in the “where” clause. However, instead of a hardcoded value, you can enter a variable name in a clause. A **variable name** tells CMS to search for whatever value(s) you or another user choose when you run the report. You must define a variable on the Define Input window before using it in a “where” clause. The variable name, then, links a report input field to the “where” clause that will use the value(s) entered.

**Note** To see the variable names you previously defined on the Define Input window, select the `List inputs` action list option. See “Step 2: List the Report Input Variables.”

In a clause with a variable name, you must always enter a dollar sign (\$) in front of the variable. The format is as follows:

**Expression Relational Operator \$variable**

As with a basic “where” clause, the **Expression** can be a database item or calculation. The relational operators available are the same as those available for a basic “where” clause.

Look at the following “where” clause:

**Select rows where: SPLIT = \$splitvar**

This “where” clause tells CMS to search for rows with the Split value the user enters when ordering the report. The example clause presupposes that the variable name, “splitvar,” has been defined on the Define Input window.

## Multiple “Where” Clauses

To put two or more clauses in a statement, use **and** or **or**. Use **and** to define two or more clauses where CMS finds only rows that meet all conditions. For example, the following statement searches for rows where splits had an average speed of answer greater than 30 seconds **and** abandons greater than 100.

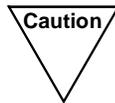
**Select rows where: ANSTIME/ACDCALLS > 30 and ABANDONS > 100**

Use **or** to define two conditions where CMS finds rows that meet either condition but not necessarily both. For example, the following statement searches for rows where splits had too many abandoned calls or too many extension-out calls.

**Select rows where: ABANDONS > 15 or AUXOUTCALLS+ACWOUTCALLS > 7**

## “Where” Clause with a Range/List Variable

If a variable name, as defined in the Define Input window, has been assigned the Range/list option, your “where” clause **must** use the equals sign (=) with the variable name. In addition, if a variable name has the Range/list option, the “where” clause for that variable name should appear in the `Select rows where` field before any “where” clause that does not have a Range/list variable.



If a variable name has the Range/list option and the “where” clause for that variable name appears in the `Select rows where` field after a “where” clause that does not have a Range/list variable, the report will not show accurate data when you run it.

## Selecting Rows from an ACD

In your “where” statement, you must always include a clause to select the ACD. If you always want a report to find data for the user's current ACD, append `and ACD = $acd` to the “where” statement, as shown in the following example:

```
Select rows where: SPLIT = $splitvar and ROW_DATE
= $datevar and ACD = $acd
```

If you use the variable name `acd`, you do not need to define the variable in the Define Input window. CMS will always understand `acd` to be the current ACD. However, if you wish, you can define a different variable name for the `ACD` database item so the user can specify the desired ACD(s) when ordering the report. You can also hardcode the ACD in a “where” clause, as in the following example.

```
Select rows where: ACD = 1
```

## Excluding Rows of Data

If you want to **exclude** Split 5 from the report, but include all other splits, you might enter a “where” clause as follows:

```
Select rows where: SPLIT != 5
```

or

```
Select rows where: SPLIT <> 5
```

## Step 6: Select a Field/Bar Type

Enter an **x** to select one of the following field/bar types.

### Discrete

Select the `Discrete` type if CMS will find only one value for each report field/bar you are assigning this Row Search ID to. CMS will find only one value if the field/bar is an aggregate function (SUM, AVG, MIN, or MAX), or if **both** of the following conditions are true:

- You enter a “where” statement that is so specific that CMS finds only one row.
- On the Define Input window, you select **n** for Range/list for any variables used in the “where” statement. For example, if you select the Daily Split (`dsplit`) table and enter the following “where” statement:

```
Select rows where: ROW_DATE = $datevar and SPLIT = $splitvar and ACD = $acd
```

**and** you select **n** for Range/list for both the `splitvar` and `datevar` variables, CMS will find a single row containing the date and split the user enters when ordering the report.



If you are assigning the row search ID only to fields and bars that contain aggregate functions (sum, max, min, or avg), you will normally select the `Discrete` type. See "Repeating Aggregate Function Values in Historical Reports" in Chapter 6, "Advanced Report Design" of this manual.

### Repeated vertically

Select `Repeated vertically` to display a column of multiple field values, or a vertical series of bars, one for each value.

If you select `Repeated vertically`, you must also enter a number in the `Spacing` field. This number tells CMS how many lines to go down to display each value. **1** means to display a value on every line. **2** means to display a value on every other line.

### Repeated horizontally

Select `Repeated horizontally` to display multiple field values in row format or a horizontal series of bars, one for each value.

If you select `Repeated horizontally`, you must also enter a number in the `Spacing` field. This number tells CMS how many characters to move horizontally from the **beginning** of one value to the beginning of the next. This means that the spacing you enter must include the blank

spaces between fields/bars **and** the width of a field/bar. For example, if a field/bar is four characters wide and you enter `8` in the Spacing field, CMS will display each value with four blank characters in between.

Repeated values, whether repeated horizontally or vertically, apply only if CMS will find multiple values for the report field(s). CMS will find multiple values if **one** of the following conditions exists:

- Your “where” statement specifies one or more ranges of values.
- On the Define Input window, you entered `y` for Range/list for at least one variable.
- Your “where” statement is general enough to select multiple rows.

One example of a general “where” statement would be, for the `dsplit` table, the following statement:

```
Select rows where: ROW_DATE = $datevar and ACD
= $acd
```

Since no split values are specified, CMS will display, for a user-specified date, a value for every split in the ACD.

If, based on your “where” statement and Define Input entries, CMS finds multiple values, but you select `Discrete`, the report will display only the first value CMS finds for each report field.

**Note**

If you select `Repeated vertically`, you can not define any fields directly under a repeated field. If you select `Repeated horizontally`, you can not define any fields directly to the right of a repeated field. Also, the report will display horizontally repeated values only up to the maximum width (132 columns) of a report. CMS will drop any additional values that would have extended beyond the maximum report width.

## Step 7: Select a Sort Type

Enter an `x` to select either ascending or descending order for values of the database item(s) in the `Order by` field. Ascending order means CMS will display data from the lowest to the highest values. Descending order means CMS will display data from the highest to the lowest values.

Continuing with the previous example, if the **Order by** database item is **ROW\_DATE** and you choose a descending order, the data will be listed as shown in the following illustration.

DATE	SPLIT	ACDCALLS
10/12/92	1	7
10/12/92	2	6
10/12/92	3	5
10/11/92	1	25
10/11/92	2	50
10/11/92	3	41
10/10/92	1	40
10/10/92	2	36
10/10/92	3	30

For dates and times, lowest values are those dates/times farthest in the past.

---

## Step 8: Select a Sort Order for Data

Enter a database item (with its table name) in the **Order by** field to specify how multi-row data should be sequenced in the report. CMS will order the rows of data by the values for the database item. For example, you might enter **dsplit.ROW\_DATE** in the **Order by** field. CMS would then display data by date, as in the following report.

DATE	SPLIT	ACDCALLS
10/10/92	1	40
10/10/92	2	36
10/10/92	3	30
10/11/92	1	25
10/11/92	2	50
10/11/92	3	41
10/12/92	1	7
10/12/92	2	6
10/12/92	3	5

If, on the other hand, you enter `dsplit.SPLIT` in the `Order by` field, CMS will display data by split, as shown in the following report.

DATE	SPLIT	ACDCALLS
10/10/92	1	40
10/11/92	1	25
10/12/92	1	7
10/10/92	2	36
10/11/92	2	50
10/12/92	2	6
10/10/92	3	30
10/11/92	3	41
10/12/92	3	5

If you leave the `Order by` field blank, CMS will display data in the report using the same sequence CMS uses to store the data in the table.

**For historical reports only**, you can enter more than one database item in the `Order by` field. The database items must be separated by commas. The effect of more than one sorting database item is that data will be ordered first by values found for the first sorting database item, then sorted by values for the second sorting database item, and so on.

For example, `Order by: dsplit.SPLIT,dsplit.ACDCALLS` would cause the data shown in the previous illustration to be ordered as follows:

DATE	SPLIT	ACDCALLS
10/12/92	1	7
10/11/92	1	25
10/10/92	1	40
10/12/92	2	6
10/11/92	2	36
10/10/92	2	50
10/12/92	3	5
10/11/92	3	30
10/10/92	3	41

Notice that the data is first sorted by split number, then by the number of ACD calls. As a result, the dates appear totally out of sequence.

---

## Step 9: Save Your Row Search Conditions

Select the `Modify` action list option. → *The message Successful appears in the window's status line to indicate the Row Search conditions have been added.*

After you have successfully saved your row search conditions, you can then assign the row search ID to report fields/bars.

---

## Assign a Row Search ID to Report Field(s) and Bar(s)

To complete the definition of data for a field or bar, you must assign a row search ID to the field/bar. Use the following steps to do this.

**Note** If a field already has an assigned row search ID (for example, a field that is part of a design you have copied), you must first **remove** the existing row search ID assignment. See "Changing the Row Search-Field Assignment(s)" later in this section.

1. On the Screen Painter, place the cursor on a field to which you want to assign a row search ID. To assign a row search ID to several fields at one time, place the cursor in a position from which you can define an appropriate block.
2. Select the `Row search` action list option. → *The Row Search window appears.*
3. Enter the desired row search ID and select the `Find one` action list option. → *The row search conditions for the ID appear.*

4. Select the `Assign fields` action list option. → *The Row Search window disappears, the cursor moves to its original position on the Screen Painter, and the following message appears on the Screen Painter status line: Move cursor to define a block and press RETURN.*
5. Move the cursor using the `Tab`, `Shift Tab`, or arrow keys. If the block you define contains one or more characters of a field/bar, CMS will assign the row search ID to that field/bar. → *The cursor defines a block on your terminal in inverse video (or color).*
6. Press `Return`. → *The ? in each field/bar changes to the row search ID to indicate the row search conditions have been assigned. Additional characters fill the field or bar as shown in the following illustrations.*

If your row search conditions specify discrete fields/bars, assigned fields will appear with lower-case `x`'s and assigned bars will appear with upper-case `X`'s. See Figure 4-14.







## Changing Row Search Conditions

1. On the Screen Painter, select the `Row search` action list option. → *The Row Search window appears.*
2. Enter a number from 0 to 9 in the `Row Search ID` field, and select the `Find one` action list option. → *The row search conditions for the ID appear.*

**Note**

For a “Find one” search, only your entry in the `Row search ID` field counts. CMS ignores the other fields.

3. Change data in any field(s), and select the `Modify` action list option. → *The message Successful appears in the window's status line to indicate the Row Search conditions have been changed.*

The changes will apply to any fields to which you had previously assigned the row search ID.

## Changing the Row Search-Field Assignment(s)

To change the row search ID assigned to a particular field, you must first disassociate the field from the row search ID. You do this using the `Remove fields` action list option.

1. On the Screen Painter, place the cursor on a field/bar from which you want to disassociate the row search ID. To disassociate a row search ID from several fields/bars at one time, place the cursor in a position from which you can define a block that will include all appropriate fields/bars.
2. Select the `Row search` action list option. → *The Row Search window appears.*

3. Enter the desired row search ID and select the `Find one` action list option. → *The row search conditions for the ID appear.*
4. Select the `Remove fields` action list option. → *The Row Search window disappears, the cursor moves to its original position on the Screen Painter, and the following message appears on the Screen Painter status line: Move cursor to define a block and press RETURN.*
5. Move the cursor using the `Tab`, `Shift Tab`, or arrow keys. The block you define should contain all characters of each field/bar from which you are disconnecting the row search ID. → *The cursor defines a block on your terminal in inverse video (or color).*
6. Press `Return`. → *The row search ID in each field/bar is replaced by a question mark ? to indicate the row search conditions have been disconnected.*
7. Assign a new row search ID to the fields/bars.

---

# Defining Fields to Show Run Time/Date and User Inputs

---

## General Information

The time or date when a report is run is not stored in any database table. Instead, CMS simply recognizes when it has finished processing the report, and if requested, can display this information on the report. Similarly, CMS knows what your current ACD is when you order the report and can display the current ACD name or number on the report.

To display the report's run-time, run-date, or the current ACD when you ordered the report, you must define a field using the Var/Time/Date window (Figure 4-20). The Var/Time/Date window also allows you to define fields that mirror your entries in the Report Input window. That is, CMS simply takes the values you enter for an input variable (as defined in the Define Input window) and displays those values on the report.

To define a field with one of these types of information, use the following steps.

---

## Step 1: Access the Var/Time/Date Window

On the Screen Painter, place the cursor where the left end of the field should appear, and select `Variable/time/date`.

→ *The Var/Time/Date window appears.*

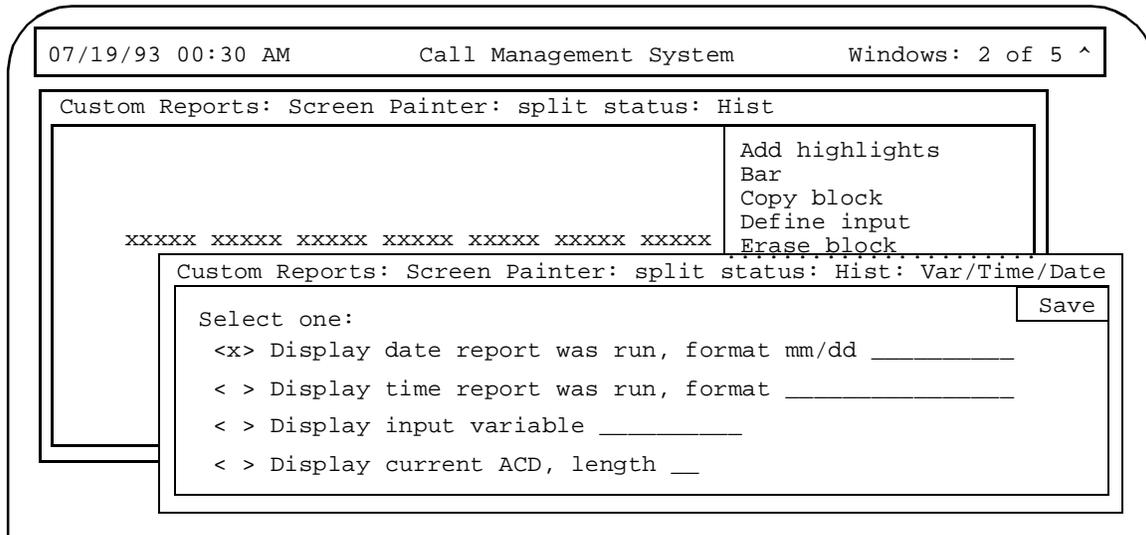


Figure 4-20: The Var/Time/Date Window

## Step 2: Define the Display Type and Format

**Note** You are given flexibility in defining the appearance of the date and time fields; however, only text matching the defined formats is converted into their equivalents. Any other text is simply displayed as entered.

- 2a. Enter an **x** to select a display type. You must also complete the associated field.

The display options are as follows:

**date** Select this option to display the date you ran the report. You must also specify a date format with appropriate punctuation in the associated field. You can enter any of the following formats or combination of formats:

**report**

**was run**

<b>mm</b>	The numerical month.
<b>MMM</b>	The month represented by three letters.
<b>yy</b>	The year as two digits.
<b>yyyy</b>	The year as four digits.
<b>dd</b>	The numerical day of the month.

<b>jjj</b>	The day of the year in the Julian calendar.
<b>www</b>	The day of the week as three letters.

An example of combined formats would be the standard date format **mm/dd/yy**. Or, you could enter just the day and month **mm/dd**.

**time  
report  
was run**

Select this option to display the time you ran the report. You must also enter a time format with the appropriate punctuation.

You can use any of the following formats:

<b>HH</b>	The hour only, in military time (24-hour clock).
<b>hh</b>	The hour only, according to a 12-hour clock.
<b>mm</b>	The number of minutes after the hour only.
<b>ss</b>	The number of seconds into the minute.
<b>HH:mm:ss</b> or <b>HH:mm</b>	Military time, either to the second or to the minute.
<b>hh:mm:ssa</b> <b>m</b> or <b>hh:mmam</b>	12-hour clock time, with AM or PM attached, either up to the second or up to the minute.

**2b.** Verify that the format of your date and time entries are acceptable by accessing the help screen for both the date and time fields.

**input  
variable**

Select `input variable` to display data exactly as it is entered in one of the fields on the Report Input window. You must also enter, in the associated field, the variable name assigned to the report input field (on the Define Input window).

**current  
ACD**

Select `current ACD` to display the number or name of the ACD that was current when you ordered the report. You must also enter, in the associated field, the number of characters, 1 to 20, that the ACD field should have. If you have defined names in Dictionary for your ACD(s), you may want to enter `20`, since this is the maximum length for Dictionary names.

### Step 3: Save the Var/Date/Time Field

Select `Save`.

→ *The Var/Time/Date window disappears. CMS marks the field in one of the following ways:*

*For a **date**, the format you defined is displayed (for example, **mm/dd/yy**).*

*For a **time**, the format you defined is displayed (for example, **hh:mmam**).*

*For an **input variable**, a string of dollar signs (\$\$\$) is displayed, with the number of dollar signs equaling the field length you assigned to the variable's input field on the Define Input window.*

*For **current ACD**, a string of dollar signs (\$\$\$) is displayed, with the number of dollar signs equaling the length you specified in the Var/Date/Time window.*

Repeat Steps 1 through 3 for each field you want to define.

---

## Saving Your Work

To save everything you have done so far, select `Save design` from the screen painter. If you have failed to define any fields in any way, an error message will inform you of this. You must go back and correct any errors before saving.

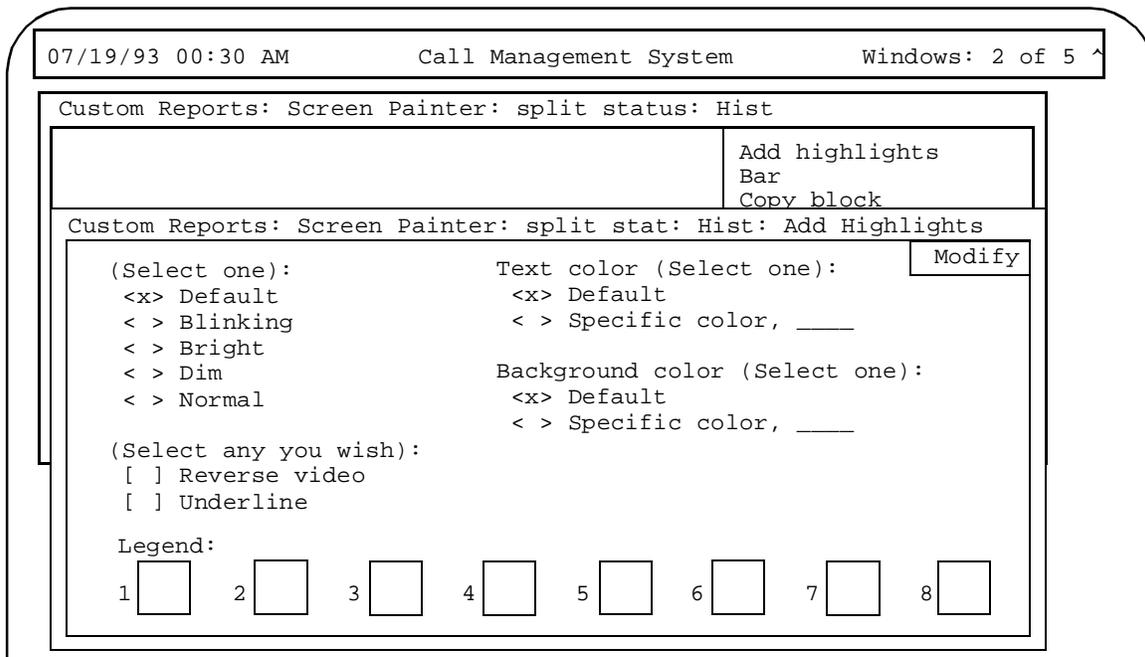
## Highlighting Fields

For each individual custom report, you can administer how the screen displays the colors and brightness levels of the text, data and background. You can also administer color, brightness level, reverse video, and underlining to emphasize individual fields and text in the report.

**Note** You **can not** change the way bars are displayed with the procedure that follows. However, you **can** change the bars' threshold colors via the **Commands** SLK and the **Options: Color** submenu selection.

To change the way the screen displays fields and text in your report, do the following steps:

1. On the Screen Painter, place the cursor in a position where you want one corner of a block to be, and select **Add highlights**. → *The cursor returns to its original position, and the following message appears on the status line: Move cursor to define opposite corner of block, press RETURN.*
2. Move the cursor to a position where you want the opposite corner of the block to be. The block should include all field text you want to highlight. → *The block you are defining becomes highlighted.*
3. Press **Return**. → *The Add Highlights window appears.*



**Figure 5-1: The Add Highlights Window**

4. Select the highlighting options you want. The highlighting options are as follows:

**Select One List**

- |                 |   |
|-----------------|---|
| <b>Default</b>  | The “Default” setting reflects the text and background settings administered for this terminal.   |
| <b>Blinking</b> | The “Blinking” setting causes the text/data in the defined area to blink (continuous alternation between dim and normal brightness or foreground/ background colors). |
| <b>Bright</b>   | This setting makes the text/data in the defined area become bright. If your terminal does not have a “bright” capability, “bright” will equal “normal.”               |
| <b>Dim</b>      | This setting makes the text/data in the defined area become dim. If your terminal does not have a “dim” capability, “dim” will equal “normal.”                        |
| <b>Normal</b>   | The “normal” setting makes the text/data in the defined area a brightness level between “dim” and “bright.”   |

**Select any you wish**

**Reverse video** This setting causes brightness/color settings for text and background to be reversed. For example, for an amber monochrome terminal, reverse video makes the background amber and the text/data black. For a color terminal set for white text on blue background, reverse video makes the background white and the text blue.

The brightness and blinking options also affect the display of reverse video.

**Underline** This setting draws a line under any text/data in the defined area. If you also select "Reverse video," the underline color/brightness is reversed.

**Text color (for color terminals only)**

**Default** This setting displays text in the color set in the Options: Color window, which you access via **Commands**.

**Specific color** This setting assigns to the text one of the eight colors displayed at the bottom of the window. If you select this option, you must enter the number of the color in the associated field you want.

**Background color (for color terminals only)**

**Default** This setting displays the background in the color set in the Options: Color window, which you access via **Commands**.

**Specific color** This setting assigns to the background one of the eight colors displayed at the bottom of the window. If you select this option, you must enter, in the associated field, the number of the color you want.

5. Select the `Modify` action list option. → *The Add Highlights window disappears.*

**Note** For some color terminals, dim or bright settings may affect the colors selected.

# Defining Stationary (No-Scroll) Areas

Many standard reports are bigger than the available space on your terminal. As a result, when you display the report on your terminal, you must scroll the window to see all the data, either down or to the side. However, you will notice that some report text or data fields do not move. These stationary, or no-scroll, parts of the report normally are column headers, column totals, and row identifiers.

In the following report illustration, the shaded areas are no-scroll areas.

Weekly VDN Report													
VDN: xxxxxxxxxxxxxxxxxxxxxxxx										Printed: mm/dd/yy hh:mm AM			
Vector: xxxxxxxxxxxxxxxxxxxxxxxx										ACD: xxxxxxxxxxxxxxxxxxxxxxxx			
Starting	Total	Vector	Calls	Avg	Avg	Calls	Calls	Avg	Calls	Calls	Vector	Avg	
Date	Calls	In	Ans	Speed	Talk	Ans in	Ans in	Aban	Forced	Forced	Flow	Time	in VDN
				Ans	Time	Main	Backup	Time	Busy	Disc	Out		
-----													
Totals:	xxxxx	xxxxx	xxxxx	mm:ss	mm:ss	xxxxx	xxxxx	xxxxx	mm:ss	xxxxx	xxxxx	xxxxx	mm:ss
-----													
mm/dd/yy	xxxxx	xxxxx	xxxxx	mm:ss	mm:ss	xxxxx	xxxxx	xxxxx	mm:ss	xxxxx	xxxxx	xxxxx	mm:ss
mm/dd/yy	xxxxx	xxxxx	xxxxx	mm:ss	mm:ss	xxxxx	xxxxx	xxxxx	mm:ss	xxxxx	xxxxx	xxxxx	mm:ss
mm/dd/yy	xxxxx	xxxxx	xxxxx	mm:ss	mm:ss	xxxxx	xxxxx	xxxxx	mm:ss	xxxxx	xxxxx	xxxxx	mm:ss
mm/dd/yy	xxxxx	xxxxx	xxxxx	mm:ss	mm:ss	xxxxx	xxxxx	xxxxx	mm:ss	xxxxx	xxxxx	xxxxx	mm:ss
mm/dd/yy	xxxxx	xxxxx	xxxxx	mm:ss	mm:ss	xxxxx	xxxxx	xxxxx	mm:ss	xxxxx	xxxxx	xxxxx	mm:ss
.	.	.	.	.	.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.

**Figure 5-2: Sample Non-Scroll Areas**

Of course, if you print the report in Figure 5-2, the no-scroll areas are irrelevant since all the data is there on paper. However, if you display the report on your terminal, almost half of the right side of the report is hidden from view. Thus, you have to scroll to the right and data on the left disappears off the left side of the window. But while you scroll the data, the dates on the left remain in place so you always know what day the data is for.

And if you have over 20 days listed in the report in Figure 5-2, some rows of data at the bottom will be hidden. Thus, you have to scroll down to see the rows of data past 20 days. Meanwhile, data at the top scrolls off the top of the window. But the report title, the column headers, and the Totals: row stay in place.

In your custom report, you may wish to assign areas as no-scroll areas. You may assign one no-scroll area on the left side of the report and one no-scroll area at the top of the report. To define no-scroll areas, use the following steps:

1. On the Screen Painter, select Upper/left no-scroll. → *The cursor returns to the upper left corner of the report. The following message appears on the status line: Move the cursor down and right. Press RETURN when finished.*
2. To define a no-scroll area at the top, move the cursor down the desired number of lines. To define a no-scroll area on the left, move the cursor to the right. → *CMS highlights the no-scroll area as you move the cursor.*
3. Press **Return** to save the no-scroll area.

## Changing a No-scroll Area

1. On the Screen Painter, select Upper/left no-scroll.
  - *The cursor returns to a position at the edge of the top and/or left no-scroll areas. The following message appears on the status line: Move the cursor down and right. Press RETURN when finished.*
2. To change a no-scroll area at the top, move the cursor up or down the desired number of lines. To change a no-scroll area on the left, move the cursor to the right or left.
  - *As you move the cursor, CMS highlights the no-scroll area that you add or removes the highlight for the no-scroll area you delete.*
- 3 Press Return to save your changes.

---

# Saving the Report Design

Before you exit the Screen Painter, you must save your report design. If you do not save the design, all work you did since accessing the Screen Painter will be lost, **including** any work you did with secondary windows. You must also save the design even if you successfully test it with the `Test design` action list option.

**Note** You may save a design that does not test cleanly so that you can come back later and finish it up or correct any errors found. However, **do not** *run* the report until it tests cleanly. Also, it is a good idea to copy an unclean report and work with the *copy* in case you make further mistakes.

To save your report design, do the following:

1. On the Screen Painter, select `Save design`. → *The following message may appear on the Screen Painter status line:*  
`Successful.`  
*Or, if you did not define all necessary elements of the design, the Save Design window appears with a list of errors.*

When there are errors in the design, certain items may be deleted from the design and the next time the design is read into the screen painter, these elements will not appear.

2. After you save your design, you can continue working on the design, test it, or exit the Screen Painter and continue working on the design at a later time.

If CMS displays errors, do the following:

- Note the errors
- Press the `Exit` SLK
- Fix the errors on the Screen Painter
- Repeat Step 1.

**Note** If you exit the Screen Painter without first fixing errors found in the Save Design window, the report items associated with the errors will be deleted from the Screen Painter.

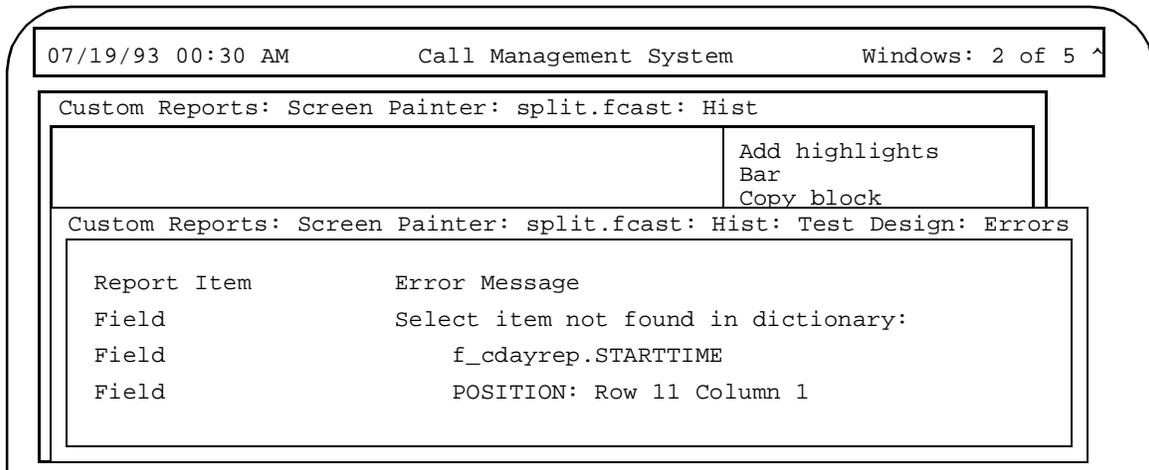
---

# Testing a Report Design

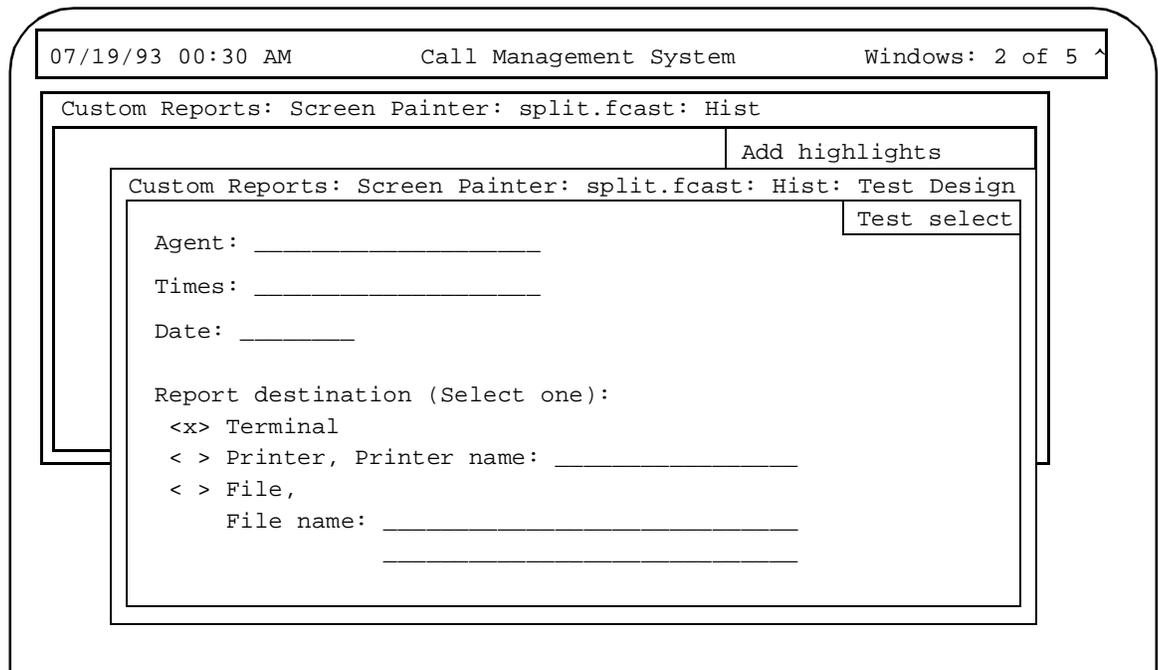
Instead of running a report and having it fail because you had errors in your design, you can test the design directly from the Screen Painter. Testing your report design can save you a lot of time if it turns out that you, indeed, have errors in the design.

Use the following steps to test a report design:

1. On the Screen Painter, select `Test design.` → *If your design has Phase One errors, a window (Figure 5-3) listing those errors appears. See the following section, "Test Design Error Messages" for a description of these errors. If your design has no Phase One errors, the Test Design window (Figure 5-4) appears with a facsimile of the Report Input window.*



**Figure 5-3: Sample Test Design Window - Phase One Errors**



**Figure 5-4: Sample Test Design Input Window**

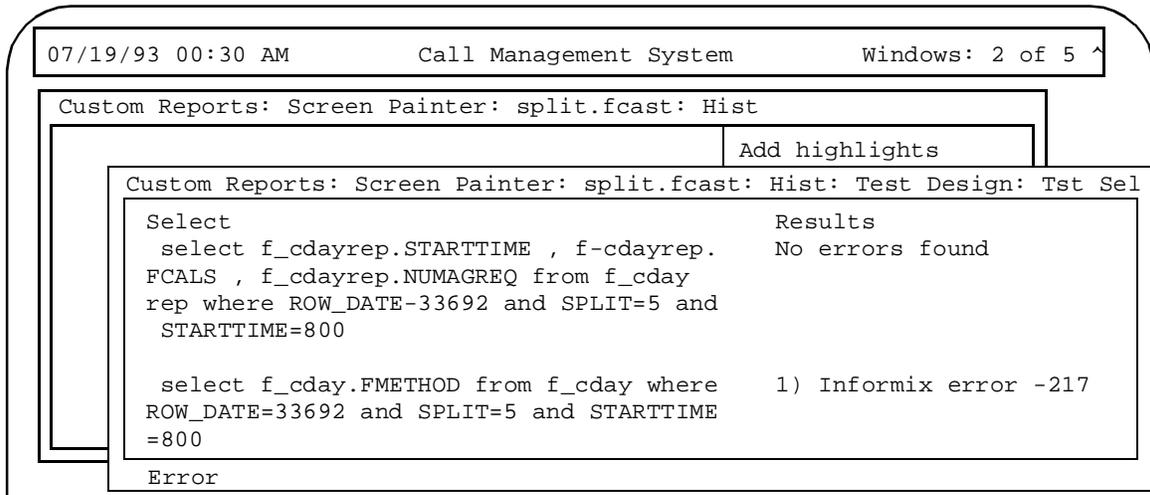
2. Complete the fields on the Report Input window, and select Test select.

→ A list of the row search conditions appears (Figure 5-5), with a list of any Phase Two errors. See the following section, "Test Design Error Messages" for a description of these errors.

**Note**

If you had Phase One errors, fix the errors indicated, and go back to Step 1.

If you have no errors, the following message appears in the window: No errors found.



**Figure 5-5: Sample Test Design Input Window**

**3. If you have errors, do the following:**

- Note the errors.
- Press the **Exit** SLK.
- Fix any errors.
- Select `Test design` again.
- Repeat Steps 1 and 2.

**Note** For real-time reports the link to the switch must be up for the current ACD, and there must be data for the particular item you are selecting such as Split 5.

If you have no errors, press the **Exit** SLK and continue with your design, or save the design and exit the Screen Painter.

---

## Test Design Error Messages

Test design error messages are divided into three categories:

- Phase 1 Error Messages (detected before the sample input screen appears)
- Phase 2 Historical Error Messages (require the sample input before occurring)
- Phase 2 Real-Time Error Messages (require the sample input before occurring).

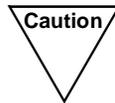
---

### Phase 1 Error Messages

This section contains Phase 1 error messages. The messages are presented alphabetically. Each message includes a cause and a recommended solution.

<b>Message:</b>	<code>\$&lt;variable name&gt; not defined</code>
<b>Cause:</b>	The where clause contains a variable that is not defined.
<b>Solution:</b>	Define the variable using the define input action or remove the variable from the row search criteria.
<b>Message:</b>	<code>Cannot mix aggregates and nonaggregates in the select</code>
<b>Cause:</b>	You can not specify both aggregate columns and nonaggregate columns in the same select for real-time reports.
<b>Solution:</b>	Create two identical row search conditions and apply one to the aggregate columns and one to the nonaggregate columns.
<b>Message:</b>	<code>Cannot use the SYN function for order by</code>
<b>Cause:</b>	You can not use a synonym to sort the output.
<b>Solution:</b>	Remove the SYN aggregate from the <code>Order by</code> field.

<b>Message:</b>	CMS system error - Check the error log
<b>Cause:</b>	A CMS system error occurred while the select executed. The error should be recorded in the error log.
<b>Solution:</b>	Check the error in the error log to initiate corrective action.



If you run a report that merges data from two tables (particularly tables with large amounts of data) into a single field and your **select rows where** statement is not specific enough, you may get this error message. The specific cause may be that the number of selected rows is very large, and CMS does not have enough space to create temporary files. If this is the case, you should add additional “where” clauses to the row search criteria.

<b>Message:</b>	CMS system error - Data collection off
<b>Cause:</b>	CMS can not test the row search criteria while data collection is off.
<b>Solution:</b>	Turn data collection on and rerun test of report design.
<b>Message:</b>	CMS system error - Too much data retrieved - try a more restrictive search
<b>Cause:</b>	Too much data was retrieved with the given row search criteria.
<b>Solution:</b>	Add more conditions to the row search criteria so that fewer rows are retrieved.
<b>Message:</b>	CMS system error - Updating translations
<b>Cause:</b>	CMS can not test the row search criteria while CMS is receiving the set of configuration data from the PBX.
<b>Solution:</b>	Wait until configuration data has been sent. Then rerun the test of report design.

<b>Message:</b>	keyword AVG invalid in where clause
<b>Cause:</b>	You can not use the keyword AVG in row search criteria.
<b>Solution:</b>	Remove the keyword AVG from the row search criteria.
<b>Message:</b>	keyword BETWEEN invalid for real-time
<b>Cause:</b>	You can not use the keyword BETWEEN in row search criteria for a real-time report.
<b>Solution:</b>	Remove the keyword BETWEEN from the row search criteria.
<b>Message:</b>	keyword COUNT invalid in where clause
<b>Cause:</b>	You can not use the keyword COUNT in row search criteria.
<b>Solution:</b>	Remove the keyword COUNT from the row search criteria.
<b>Message:</b>	keyword MAX invalid in where clause.
<b>Cause:</b>	You can not use the keyword MAX in row search criteria.
<b>Solution:</b>	Remove the keyword MAX from the row search criteria.
<b>Message:</b>	keyword MIN invalid in where clause.
<b>Cause:</b>	You can not use the keyword MIN in row search criteria.
<b>Solution:</b>	Remove the keyword MIN from the row search criteria.
<b>Message:</b>	keyword SUM invalid in where clause.
<b>Cause:</b>	You can not use the keyword SUM in row search criteria.
<b>Solution:</b>	Remove the keyword SUM from the row search criteria.
<b>Message:</b>	keyword SYN invalid in where clause.
<b>Cause:</b>	You can not use the keyword SYN in row search criteria.
<b>Solution:</b>	Remove the keyword SYN from the row search criteria.

## Phase 2 Historical Error Codes

This section contains the INFORMIX<sup>\*</sup>-SQL error codes most likely to appear for CMS historical reports. Each code includes a description of the error and the recommended corrective action.

These errors are reported in the following format:

INFORMIX error: <error number>

In addition, a circumflex (^) may appear in the listed Select statement(s) to mark the location of an error.



If an error code appears that is not listed in this document, see the *INFORMIX-SQL Relational Database Management System Reference Guide* for INFORMIX SQL Version 4.10.

- 201      **Description:** A syntax error has occurred.

**Corrective Action:** Check that you have not misspelled an RDSQL statement, placed key words out of sequence, or included an INFORMIX-SQL reserved word in your query.
- 202      **Description:** An illegal character has been found in the statement.

**Corrective Action:** Remove the illegal character (often a nonprintable control character) and resubmit the statement
- 203      **Description:** An illegal integer has been found in the statement.

**Corrective Action:** Integers must be whole numbers from -2,147,483,647 to 2,147,483,647. Check that you have not included a number with a fractional portion or a number outside the acceptable range. Check also that you have not inadvertently entered a letter in place of a number (for example, 125p3 instead of 12503).

---

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- 204      **Description:** An illegal floating-point number has been found in the statement.  
**Corrective Action:** Check that you have not inadvertently entered a letter in place of a number (for example, 125p3 instead of 12503).
- 206      **Description:** The specified table name is not in the database.  
**Corrective Action:** Check the spelling of the table name in your statement.
- 217      **Description:** Column *column-name* not found in any table in the query.  
**Corrective Action:** Correct the spelling of the database item and ensure that the item exists in the database table. Check for the presence of requested commas and quotes.
- 219      **Description:** Wildcard matching may not be used with non-character types.  
**Corrective Action:** Wildcards (\*, ?) and characters enclosed in brackets [ ] can be used only with CHAR data types. Check the data type for the offending column.
- 220      **Description:** There is no FROM clause in the query.  
**Corrective Action:** Must include a FROM clause in the query. Check that you do not have an illegal character (\$, #, &, etc., or a CONTROL character) in the line prior to the FROM keyword.
- 223      **Description:** Duplicate table name *table-name* in the FROM clause.  
**Corrective Action:** Remove the redundant table name from the statement or use an alias to rename one of the tables.
- 228      **Description:** Can not have negative characters.  
**Corrective Action:** Check that you have not included a negative CHAR data type (for example, -a or -p) in your statement.

- 278      **Description:** Too many ORDER BY columns; maximum is eight.  
**Corrective Action:** Reduce the number of columns included in the ORDER BY clause to eight or less.
- 280      **Description:** Total size of ORDER BY columns exceeds 120 bytes.  
**Corrective Action:** Reduce the number of columns included in the ORDER BY clause so that the total number of characters is less than or equal to 120 (perhaps delete a CHAR column of 30 or more characters).
- 282      **Description:** Found a quote for which there is no matching quote.  
**Corrective Action:** Check that all quoted strings are properly terminated with a quote.
- 284      **Description:** A subquery has not returned exactly one value.  
**Corrective Action:** Check data for the subquery. Restructure the subquery by adding more components in the WHERE clause so that only one value is returned.
- 297      **Description:** The SELECT list may not contain a subquery.  
**Corrective Action:** Remove the subquery from the SELECT list in the statement.
- 300      **Description:** There are too many GROUP BY columns (maximum is eight).  
**Corrective Action:** Reduce to eight or less the number of nonaggregate database items that are assigned the same row search ID as that assigned to an aggregate function.
- 301      **Description:** The total size of the GROUP BY columns exceeds 120 characters.  
**Corrective Action:** The total number of characters in all columns listed in the GROUP BY list exceeds 120 characters. Reduce the number of nonaggregate database items that are assigned to a row search ID that is also assigned to an aggregate function.

- 303      **Description:** Expression mixes columns with aggregates.
- Corrective Action:** Restructure your query so that columns and aggregates are not included in the same expression.
- 309      **Description:** ORDER BY database item must be included in a report field that the row search ID is assigned to.
- Corrective Action:** Check that database items included in the ORDER BY clause appear in the report and are assigned to row search ID.
- 324      **Description:** Ambiguous database item.
- Corrective Action:** A database item in your row search criteria exists in more than one table also cited in your row search criteria. Append each database item with the appropriate table name.
- 352      **Description:** Database item not found.
- Corrective Action:** Check the spelling of the database item.
- 367      **Description:** Sums and averages can not be computed for character columns.
- Corrective Action:** Check that you have not included a database item of a string type (VDN, LOGID, etc.) in the aggregate function statement.
- 522      **Description:** A database item in a field/bar does not exist in the table specified in the field's row search ID.
- Corrective Action:** Check the Select statement that has the error. The database item that does not exist in the table will be marked with a circumflex (^). Change or delete the database item or change the table in the field's row search ID.
- 809      **Description:** RDSQL syntax error has occurred.
- Corrective Action:** Check that you have not misspelled an RDSQL statement, placed key words out of sequence, or included an INFORMIX-SQL reserved word in your query.

- 1202      **Description:** An attempt was made to divide by zero.  
**Corrective Action:** Check that you are not attempting to divide a numerical column type by a character column type (for example, `16/Jones`) or that the value of the divisor does not equal zero.
- 1203      **Description:** Values used in a MATCH must both be type CHARACTER.  
**Corrective Action:** Check that the values included in your MATCH condition are both CHAR types. Use an alternate comparison condition for non-CHAR types.
- 1204      **Description:** Invalid year in date.  
**Corrective Action:** Acceptable years are 0001 to 9999. If two digits are used, RDSQL assumes the year is 19xx. Check the value entered in the date field.
- 1205      **Description:** Invalid month in date.  
**Corrective Action:** Months must be represented as the number of the month (1 through 12). Check the value entered in the date field.
- 1206      **Description:** Invalid day in date.  
**Corrective Action:** Acceptable days are 01 through 31. Check the value entered in the date field.
- 1226      **Description:** Decimal or money value exceeds maximum precision.  
**Corrective Action:** Increase the precision of the DECIMAL or MONEY field.

## Phase 2 Real-Time Error Codes

This section contains the Real-Time Database Manager error codes. Each code includes a description of the error and a recommended solution.

These errors are reported in the following format:

CMS Database Manager error: <error number>

In addition, a circumflex (^) appears in the listed Select statement(s) to mark the location of an error.

- Description:** A syntax error has occurred.

**Solution:** Check the select for misspelled keywords or keywords that are out of order.
- Description:** An illegal character has been found in the select statement.

**Solution:** Remove the illegal character (often a nonprintable control character).
- Description:** The specified table name is invalid.

**Solution:** Check the spelling of the table name and for required commas in the `From tables` field.
- Description:** An invalid column has been specified (it is not found in any of the specified tables).

**Solution:** Check the spelling of the column names.
- Description:** A mixture of aggregates and nonaggregates are being selected and this is not allowed in real-time reports. (This error code can also mean mismatched types in comparison.)

**Solution:** Create two identical row search conditions and apply one to the aggregate columns and one to the nonaggregate columns.
- Description:** Bad column in the order by clause.

**Solution:** Check that the column name in the order by clause is spelled correctly and that it is being selected by one of the fields included in this row search.

8. **Description:** Bad argument given to an aggregate function. For example, you can not take the SUM or AVG of a character column.

**Solution:** Check the arguments for the aggregates and be sure that data type is appropriate.

9. **Description:** In the “Select” of one of the fields associated with this row search, an action is being performed with the wrong data types. For example, you can not use arithmetic with character fields.

**Solution:** Check for these types of errors in the fields associated with the row search.

11. **Description:** CMS system error.

**Solution:** Check the error logs.

12. **Description:** Memory allocation error.

**Solution:** Check the error logs.

13. **Description:** Query can not select more than one table.

**Solution:** Check the error logs.

---

# Running Custom Reports

You run custom reports using steps similar to steps you use to run standard reports. However, you run custom reports from the `Custom Reports` Main Menu option. Also, the Report Input window shows input fields you defined on the Define Input window for the report. For real-time reports, the Report Input window also automatically shows a `Refresh rate in seconds` field. For historical reports, the Report Input window automatically shows report destination fields.

1. Select the `Custom Reports` Main Menu option. → *The Custom Reports submenu appears.*
2. Select either the `Real-time` or `Historical` submenu option. → *A submenu of custom reports, either real-time or historical, appears. The list includes all existing global reports and your private reports.*
3. Select the desired report. → *The Report Input window for the report appears.*

**Note** If more than 20 custom reports are available, you may need to scroll the submenu to find the report you want. Do this with the down arrow (↓). Scroll up with the up arrow (↑).

4. Complete the fields of the Report Input window, and select `Run`. → *The message `Working first` appears on the Report Input window status line. Then, the report appears — if the destination is the terminal. If the destination is a printer or file, the message `Successful` appears.*

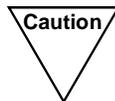


## Creating a Custom Data Table

The section of the CMS database that stores historical ACD data has been built using the INFORMIX\* SQL Relational Database Management System. All historical ACD data available for use in custom reports is stored in tables in the CMS database. You, however, can access INFORMIX and the CMS database to build your own data tables. You may build tables to contain financial information, schedule information, product or service information, or any other type of information you want. You can then design historical custom reports to display this data, either with or without ACD data.



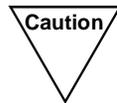
Instructions on the use of INFORMIX SQL appear in this document as a convenience. These instructions are not intended as a substitute for the INFORMIX documentation. Except where noted, the standard rules of INFORMIX SQL apply, as documented in the *INFORMIX-SQL Relational Database Management System User Guide* for INFORMIX SQL Version 4.10. This document is delivered with your CMS software and documents.



CMS does not automatically check the database for disk space used by data in custom tables. As a result, you can inadvertently fill up your disk with custom data. When this happens, you can lose or damage custom data and ACD data. Therefore, if you create custom data tables, be careful to check the amount of disk space available from time to time. See AT&T 585-215-521, *CMS Administration* for more information on disk storage.

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If you back up data using the Maintenance: Backup Data window, you will save the data stored in custom INFORMIX tables, but you will not save the custom table definitions (tablenames, column names, data types, and so on). As a result, if you lose the custom table definitions because of a disk crash, power hit, or some other reason, you can not restore these table definitions via the Backup Data window nor can you restore custom data saved via the Backup Data window.

Therefore, you should periodically back up data using the UNIX<sup>®</sup> system. Then, if you lose INFORMIX table definitions and/or custom data, you can restore the table definitions via UNIX, and then, if necessary, restore the custom data. See AT&T 585-215-521, *CMS Administration* for procedures on backing up data via the UNIX system.

---

## Step 1: Access the CMS Database in INFORMIX

To access the CMS database in INFORMIX, use the following steps:

- 1a. Press the **Commands** SLK. → *The Commands submenu appears.*
- 1b. Select the **UNIX** option. → *All windows and menus disappear, and the UNIX prompt appears.*
- 1c. At the **\$** prompt, type the following command:  
**DBPATH=/cms/db/inf**. Press the **Return** key. Type **export DBPATH**. Press the **Return** key. → *The UNIX prompt reappears.*
- 1d. At the **\$** prompt, type the following pathname:  
**/usr/informix/bin/isql**. Press the **Return** key. → *The INFORMIX logo appears, followed by the INFORMIX Main Menu.*

```
INFORMIX-SQL: Form Report Query-language User-menu Database Table Exit  
Run, Modify, Create, or Drop a form.
```

```
----- Press CTRL-W for Help -----
```

## Step 2: Build the Table

In INFORMIX, you can select menu items in one of two ways:

- Use the arrow keys (→ or ←) to move the cursor to the menu option. Then, press **Return**.
- Type the first character of the menu option.

**Note** To escape from a step and go back to the previous step, press **Delete** or **Del**, depending on your keyboard.

**2a.** At the INFORMIX Main Menu, select **Table**.

*The Select Database screen appears.*

```
SELECT DATABASE >>
Choose a database with the Arrow Keys, or enter name, then press Return.
----- cms ----- Press CTRL-W for Help -----
cms
```

**2b.** Type **cms**, and press **Return**.

→ *The Table menu appears.*

```
TABLE: Create Alter Infor Drop Exit
Create a new table.
----- cms ----- Press CTRL-W for Help -----
```

2c. Select Create.

→ *The Create Table screen appears.*

```
CREATE TABLE >>
Enter the table name you wish to create with the schema editor.
----- cms ----- Press CTRL-W for Help -----
```

2d. Type a name of up to 18 characters for the table you are building. The table name **must** begin with c\_ (a lower-case “c” and underscore). For example, type c\_workcode. Press the **Return** key.

→ *The Create Table menu appears with a highlighted box beneath “Column Name.”*

```
CREATE TABLE c_workcode:      Add Modify Drop Screen Exit
Adds columns to the table above the line with the highlight.
----- Page 1 of 1 ----- cms ----- Press CTRL-W for Help -----
Column Name                    Type          Length Index Nulls
.....
.
.....
```

2e. Select Add.

→ *The Add Name screen appears.*

```

ADD NAME >>
Enter column name. RETURN adds it. INTERRUP returns to CREATE/ALTER menu.
----- Page 1 of 1 ----- cms ----- Press CTRL-W for Help -----
Column Name                                Type          Length Index Nulls
.....
:
.....
    
```

2f. Type a name of up to 18 characters for the column you are adding. If desired, you can use names of standard CMS database items — **only if** you enter the name in lower-case letters in Dictionary. The Dictionary: Custom Items window will allow only lower-case letters for custom item names that are the same as standard database items. Press the **Return** key.

→ *The Add Type screen appears.*

```

ADD TYPE c_workcode : Char Number Serial Date Money date-Time Interval
Prints any combination of letters, numbers, and punctuation.
----- Page 1 of 1 ----- cms ----- Press CTRL-W for Help -----
Column Name                                Type          Length Index Nulls
cwc                                          .....
:
.....
    
```

The available data types are as follows:

<b>Char</b>	Character (CHAR) columns store any combination of letters, numbers, and symbols.
<b>Number</b>	<p>Numeric columns store numbers. The numbers stored can be one of five types.</p> <ul style="list-style-type: none"><li>— <b>Decimal</b>. A decimal is a number that contains a decimal point.</li><li>— <b>Smallint</b>. A Smallint column stores integers from -32,767 to +32,767.</li><li>— <b>Integer</b>. An Integer column stores integers from -2,147,483,647 to +2,147,483,647.</li><li>— <b>Smallfloat</b>. A Smallfloat column stores floating point numbers with up to seven significant digits.</li><li>— <b>Float</b>. A Float column stores floating point numbers with up to 14 significant digits.</li></ul>
<b>Serial</b>	Serial columns store a unique sequence number in each row of the table.
<b>Date</b>	Date columns store calendar dates with the format <b>mm/dd/yy</b> .
<b>date-Time</b>	<p>You must type <b>T</b> in order to select date-Time.</p> <p>A date-Time column allows you to specify a <i>database</i> qualifier of year, month, day, hour, or minute.</p>
<b>Interval</b>	An interval column allows you to specify an <i>interval</i> qualifier of year, month, day, hour, or minute.

**Note**

Though `MONEY` is another option, you **can not** create `MONEY` columns in a CMS database table. Instead, if your data will be dollars and cents, you should use **Decimal**.

- 2g.** Select the type of data that the field will store. → *The additional prompts that appear will differ, depending on your selected data type.*
- 2h.** Complete the definition of the column by responding to the additional prompts that appear. Which prompts appear and what order they appear in will depend on the data type you selected. Table 6-1 lists the possible prompts. → *When you have responded to all of the prompts for the column, a new highlighted line appears in the table, and the Add Name field reappears at the top of the screen.*

**Table 6-1: Prompts for INFORMIX Data Types**

Prompt	What to Do
<b>PRECISION</b>	Select either <b>Smallfloat</b> or <b>Float</b> . <b>PRECISION</b> appears for the <b>Float</b> type.
<b>INDEX</b>	<p>Enter <b>y</b> if you want to make the column an index. <b>INDEX</b> appears for all types except <b>Serial</b>. A column with the <b>Serial</b> data type automatically becomes an index.</p> <p>Make the column an index only if the column will be used for row searches and the table will contain more than 200 rows of data.</p>
<b>DUPLICATES</b>	<p>Enter <b>y</b> if you want to allow the column to contain the same value in different rows. For example, if the column were to contain the last names of people, you would probably want to allow multiple entries (because, for example, you might have many different people with the last name of Smith).</p> <p>However, if you were creating a column of social security numbers, you would enter <b>n</b> to prevent multiple entries of the same number. <b>DUPLICATES</b> appears for all types except <b>Serial</b>.</p>

Table 6-1: Prompts for INFORMIX Data Types (Contd)

Prompt	What to Do
<b>NULLS</b>	<p>Enter <b>y</b> if you want to allow the column to have rows with no values (versus requiring values). For example, if your table is a list of customer data and the column you are adding is for the customer's employer, you might want to allow the <b>NULL</b> value for the case where the person is unemployed.</p> <p>Enter <b>n</b> if you want to require a value in each row. <b>NULLS</b> appears for all types except <b>Serial</b>.</p>
<b>ADD STARTING NUMBER</b>	<p>Enter the number that INFORMIX should use as a starting point for numbering rows. INFORMIX will identify the first row in the table with the number you enter. As each new row of data is added to the table, INFORMIX will assign that row the next number in the sequence. <b>ADD STARTING NUMBER</b> appears only for <b>Serial</b>.</p>
<b>NUMERIC</b>	<p>Type the first letter of the numeric you want: <b>Integer, Smallint, Decimal, or Float.</b></p>
<b>LENGTH</b>	<p>Enter the number of digits the column will store for a single piece of data. <b>LENGTH</b> appears for <b>Char</b> and <b>Decimal</b> types</p>
<b>SCALE</b>	<p>Enter the number of digits that should appear to the right of the decimal point. The decimal digits, but not the decimal point, will occupy part of the field length you specified in the <b>LENGTH</b> field. <b>SCALE</b> appears after the <b>LENGTH</b> for <b>Decimal</b>.</p>

2i. Repeat Steps 2f through 2h for each column you want to add.

2j. When you have added all columns, press the **Return** key until the Create Table screen appears.

→ *The Create Table menu appears.*

```
ALTER TABLE c_workcode :   Add Modify Drop Screen Exit
Adds columns to the table above the line with the highlight.

----- Page 1 of 1 ----- cms ----- Press CTRL-W for Help -----

Column Name                Type           Length  Index  Nulls
cwc                        Char           16      Unique No
price                      Decimal        8.2                    No
.....
.
.....
```

2k. Select Exit.

→ *The Build-new-table menu appears.*

```
Exit c_workcode:   Build-new-table Discard-new-table
Builds a new table and returns to the Table Menu.

----- Page 1 of 1 ----- cms ----- Press CTRL-W for Help -----

Column Name                Type           Length  Index  Nulls
cwc                        Char           16      Unique No
price                      Decimal        8.2                    No
```

- 2l.** Select `Build-new-table`. → *The Table menu reappears. If no errors are found, your table has been added. If errors are found, you must go back to the Alter Table screen and correct these errors. You must then repeat steps 2k and 2l until the Table menu reappears.*
- 2m.** Select `Exit` to return to the INFORMIX Main Menu. → *The INFORMIX Main Menu appears.*

### Step 3: Add Data to the Table

To help you add data, you must first create a data entry form associated with your table. For more information about forms, see “Creating Your Own Forms” in the *INFORMIX-SQL Relational Database Management System User Guide*. For more information about adding data, see “Entering Data,” in the same document.

**3a.** On the Main Menu, select `FORM`. → *The FORM menu appears.*

```
FORM:  Run  Modify  Generate  New  Compile  Drop  Exit
Use a form to enter data or query a database.
----- cms ----- Press CTRL-W for Help -----
```

**3b.** Select `GENERATE`. → *The GENERATE FORM screen appears.*

```
GENERATE FORM >>
Enter the name you want to assign to the form, then press Return.
----- cms ----- Press CTRL-W for Help -----
```

**3c.** Enter a name (up to ten characters) for the form associated with your table. (If possible, use the same name as the table you created.) Press `Return`.

```

CHOOSE TABLE >> c_workcode
Choose the table to be used in the default form.

----- cms ----- Press CTRL-W for Help -----
workcode
    
```

- 3d.** Enter the name of the table you want to enter data for, and press **Return**. → *The Table-selection-complete menu appears.*

```

GENERATE FORM:   Table-selection-complete   Select-more-tables   Exit
Continue creating a default form with the selected tables.

----- cms ----- Press CTRL-W for Help -----
    
```

- 3e.** Select Table-selection-complete. → *The following message appears when processing of the form is done: The screen form specification was successfully compiled. Then the FORM menu appears.*

- 3f.** Select Run. → *The RUN FORM screen appears with the table you selected displayed.*

```

RUN FORM >>
Choose a form with Arrow keys, or enter a name, and press Return.

----- cms ----- Press CTRL-W for Help -----
workcode
    
```

**3g.** Press the **Return** key.

→ *The PERFORM menu appears.*

```
PERFORM:  Query  Next  Previous  View  Add  Update  Remove  Table  Screen . . .  
Searches the active database table.                ** 1: c_workcode table**  
  
cwc           [           ]  
price         [           ]
```

**3h.** Select **Add**.

→ *The cursor moves to the first column in the table.*

**3i.** Enter data for the first column of the table, and press the **Return** key.

→ *The cursor moves to the next column.*



If you get an error message, you may have entered data in the wrong format.

**3j.** Repeat Step 3i for each column.

**3k.** Press the **Esc** key to save the row of data.

*The message Row added appears. The row of data has been added to the table and saved.*

```
PERFORM:  Query  Next  Previous  View  Add  Update  Remove  Table  Screen . . .  
Searches the active database table.                ** 1: c_workcode table**  
  
cwc           [1223       ]  
price         [49.50     ]  
  
Row added.
```

- 3i. Repeat Steps 3h through 3k for each row of data you want to add.
- 3m. Type **e** (for Exit) three times to exit INFORMIX. → *The UNIX prompt appears.*
- 3n. Press **Ctrl** **B**. → *The CMS windows and menus that were displayed before you accessed UNIX reappear.*

**Note** To design a custom report that uses data from the table, you **must** also enter the column names (database items) in the Dictionary: Database Item: Custom Items window.

**Caution** CMS does not automatically check the database for disk space used by data in custom tables. As a result, you can inadvertently fill up your disk with custom data. When this happens, you can lose or damage custom data and ACD data. Therefore, if you create custom data tables, be careful to check the amount of disk space available from time to time. See AT&T 585-215-521, *CMS Administration* for more information on disk storage.

## Modifying a Table

Use the following steps to add, change, or delete columns in an existing table.

1. On the INFORMIX Main Menu, select `Table`. → *The Select Database screen appears.*
2. Press the `Return` key. → *The TABLE menu appears.*
3. Select `Alter`. → *The ALTER TABLE screen appears. A list of existing tables also appears.*
4. Enter the name of the table you want to change, and press `Return`. → *The ALTER TABLE menu appears.*

## Adding a Column

1. Select `Add` to add a new column. → *The ADD NAME screen appears.*
2. Complete the fields for the new column.
3. Press the `Del` key when you have finished adding the column(s), and go to Step 3 of “Deleting a Column.” → *The ALTER TABLE menu appears.*

## Changing a Column

1. Select `Modify` to change a column. → *The MODIFY NAME screen appears.*
2. Use the arrow keys to select a field to change.
3. Press the `Del` key when you have finished changing the column(s), and go to Step 3 of “Deleting a Column.” → *The ALTER TABLE menu appears.*

## Deleting a Column

1. To delete a column, use the arrow keys to move the cursor to the column. Select `Drop`. → *The REMOVE screen appears.*
2. Select `YES` to remove the column. → *The column disappears, and the ALTER TABLE menu appears.*
3. At the `ALTER TABLE` menu, select `Exit` when you are finished changing the table. → *The Build-new-table menu appears.*
4. Select `Build-new-table` to save your changes. Select `Discard-new-table` to ignore your changes.

<b>Note</b>
-------------

If you change columns in a table, you may have to rebuild the form assigned to the table.

## Changing Data in a Table

Use the following steps to add, change, or delete data in an existing table.

1. On the INFORMIX Main Menu, select `Form`. → *The FORM menu appears.*
2. Select `Run`. → *The RUN FORM screen appears. A list of forms also appears.*
3. Enter the name of a form, and press `Return`. → *The PERFORM menu appears.*

## Adding Rows of Data to a Table

1. Select `Add` to add rows of data. → *Fields for the table's columns appear with the cursor resting in the first field.*

2. Enter data in the fields. Use **Return** or **Tab** to move between fields.
3. Press **Esc** when you have added a row of data. → *The PERFORM menu reappears. The message Row added also appears.*

## Changing Rows of Data in a Table

1. To change data in a row, you first should display the data you want to change. To do this, select Query. → *Fields for the table's columns appear, with the cursor resting in the first field.*
2. Enter data in a column you want to search on, and press **Esc**. → *The column fields fill with data for that row.*
3. Select Update, and press the **Return** key. → *The Update screen appears.*
4. Use the arrow keys to move the cursor to the data you want to change. Overtyping the data, and press **Esc**. → *The PERFORM menu reappears. The message This row has been changed also appears.*

## Deleting Rows of Data in a Table

1. To delete a row of data, repeat Steps 1 and 2 of "Changing Rows of Data in a Table." Select **Esc**. → *The PERFORM menu reappears.*
2. Select Remove. → *The REMOVE ROW screen appears.*
3. Select YES to delete the row. → *The row of data disappears. The message Row deleted appears.*

---

# Including Forecast Data in a Custom Report



Forecasting is a separately purchased feature of CMS. If you have not purchased Forecasting, you can not run forecasts and, therefore, can not include forecast data in a custom report.

**For historical custom reports only**, you may design reports that include current day forecast data. Only current day forecast data is available for custom reports because it is the only forecast data saved in the CMS database.

The steps for creating a custom report with forecast data are almost identical to the steps for creating any other custom report. As with any other type of data, you must specify the database item(s), the table(s), the row search conditions, and the report input fields.

However, there are two differences:

1. You **can not** copy a standard current day forecast report on the Screen Painter. That is, in the Get Copy of Design window, the Current Day Forecast will not appear if you select `List all`.
2. CMS stores current day forecast data in two separate tables:

<code>f_cday</code>	This table primarily contains forecast administrative data entered in the Current Day Configuration window.
<code>f_cdayrep</code>	This table contains the agent positions required and forecast calls carried data, as well as objectives entered in the Call Handling Profiles window.

See Appendix A, "Database Items and Calculations" for a complete list of the database items these tables contain. See AT&T 585-215-521, *CMS Administration* for more information about Forecasting.

If you were to design a very abbreviated version of the current day forecast report, the design might look something like that shown in Figure 6-1.



Notice that, as in historical interval reports for splits, the statement in Row Search ID 0 searches for rows based on values for STARTTIME, ROW\_DATE, and SPLIT.

In the report in Figure 6-1, Row Search ID 1 is assigned to the Forecast Method field. Notice also that the database item for this field is FMETHOD. FMETHOD is stored in the `f_cday` table, but is **not** stored in the `f_cdayrep` table. This is an example of how current day forecast data is divided between the two tables.

However, notice that Row Search ID 1 (Figure 6-3) has row search conditions that are almost identical those in Figure 6-2:

Row Search Window
<pre> Row search ID: 1 From table(s): f_cday Select rows where: ROW_DATE = \$i_date and SPLIT = \$i_split                   and ACD = \$acd Field/bar type (Select one): &lt;x&gt; Discrete &lt; &gt; Repeated vertically, spacing 1___ </pre>

**Figure 6-3: Row Search Conditions for Forecast Data — Sample 2**

The only differences between Row Search ID 0 and Row Search ID 1 are the table selections and the field types. In this way, the data in the tables will match.

**Note** In the standard Current Day Forecast, FMETHOD normally displays a character string, either `Seasonal trending`, `Current trending`, or `No trending`. However, the CMS database actually stores a number to represent each method. So, if you include the FMETHOD database item in a report, CMS will display a number, not a character string, in the report (see Appendix A, "Database Items and Calculations" for a description of these numbers).

**Note** You can retrieve data from the Current Day Configuration Forecast (`f_cday`) table only if the appropriate call handling profile has been specified for the particular dates. For retrieval of data from the Current Day Forecast Report (`f_cdayrep`) table, the Forecast Manager must have run for the particular date for which the report is run.

---

## Including Exceptions Data in a Custom Report

**For historical custom reports only**, you may design reports that include exceptions data. See Appendix A, "Database Items and Calculations" for a description of the exceptions tables and the data they contain.

The steps for creating a custom report with exceptions data are almost identical to the steps for creating any other custom report. As with any other type of data, you must specify the database item(s), the table(s), the row search conditions, and the report input fields. However, you can not copy any standard exceptions report on the Screen Painter. That is, in the Get Copy of Design window, the exceptions reports will not appear if you select `List all`.

Also, in every exceptions table, the database item `EXTYPE` stores the types of exceptions that occurred. However, exception types are stored as numbers, not character strings. Therefore, if you want your report to list the types of exceptions that occurred, the types will be listed as numbers (see Appendix A, "Database Items and Calculations" for a description of these numbers).

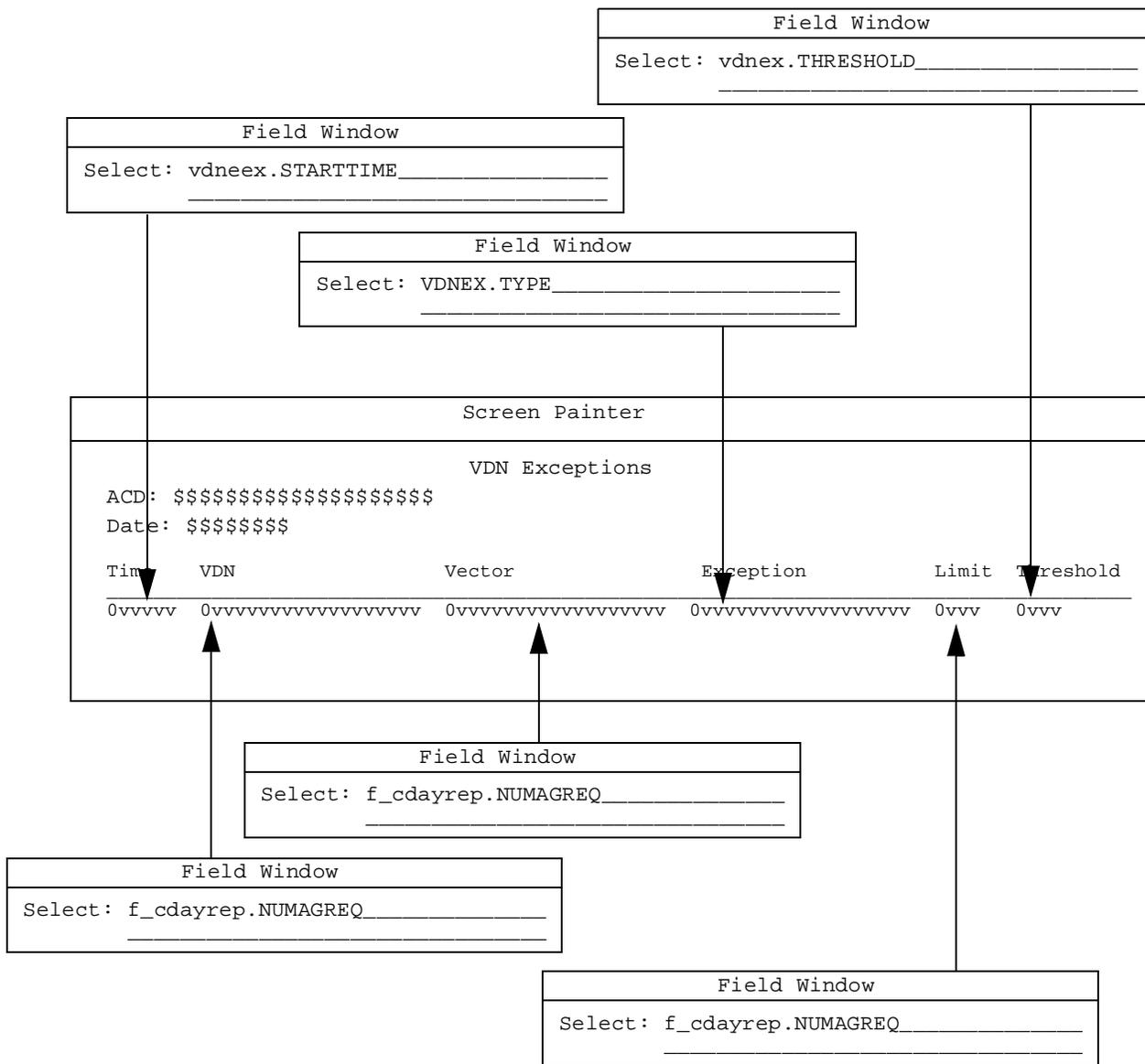
For example, look at the standard VDN Exceptions Report that follows.

VDN Exceptions

ACD: burbank Printed 04/10/93 04:35 PM  
Date: 04/09/93

Time	VDN	Vector	Exception	Time Limit	Threshold
09:16AM	Catalog Sales	Weekday Sales	Number calls abandoned in vector		20
09:24AM	Catalog Sales	Weekday Sales	Calls in ACD split queue		10
10:02PM	Catalog Sales	Off-hour Sales	Calls disconnected		50

If you designed a custom exception report to replicate the standard VDN Exceptions Report, the design might appear as shown in Figure 6-4.



**Figure 6-4: Custom Exceptions Report — Sample 1**

This design would give you a report that might appear as follows.

VDN Exceptions

ACD: burbank Printed 04/10/93 04:35 PM  
 Date: 04/09/93

Time	VDN	Vector	Exception	Limit	Threshold
09:16AM	Catalog Sales	Weekday Sales		32	20
09:24AM	Catalog Sales	Weekday Sales		30	10
10:02PM	Catalog Sales	Off-hour Sales		73	50

The report would appear this way because CMS exceptions tables store the exception types as numbers.

However, another way of designing an exception report would be to use `count(*)` for the exception field. You could then include a specific exception type as part of the row search (Figure 6-5). CMS would then count the rows that had that exception type and display the total in the report.

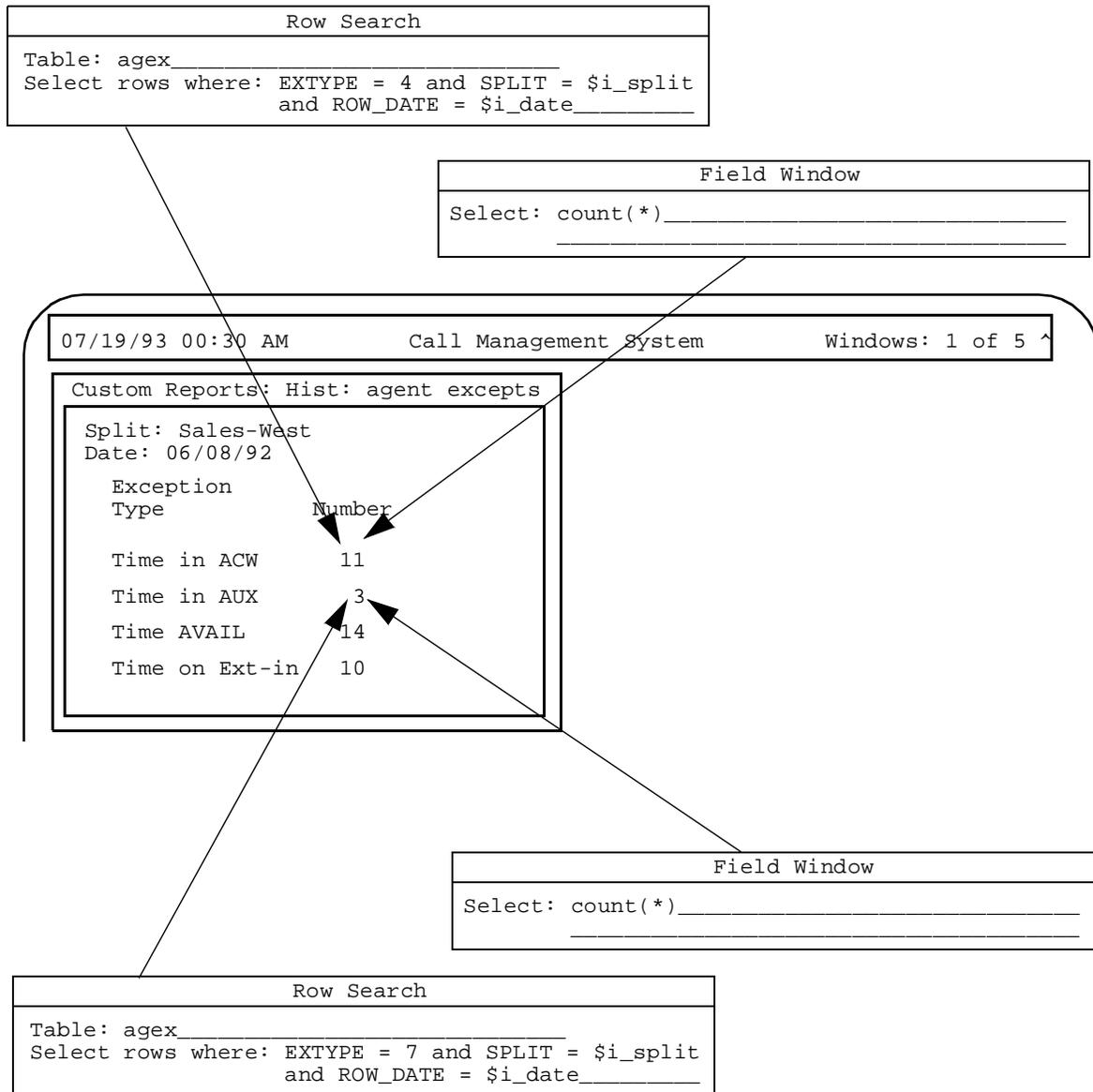


Figure 6-5: Custom Exceptions Report — Sample 2

In the example, the row search statement for the first field searches for exception type #4 (Time in ACW) for a particular date and split. Because the field is `count (*)`, the field displays the total number of rows that had exception type #4 for the date and split.

Similarly, the row search statement for the second field searches for exception type #7 (Time in AUX) for a particular date and split. Again, because the field is `count (*)`, the field displays the total number of rows that had exception type #7 for the date and split.

**Note**

For retrieval of data from an exceptions table, you can only retrieve data for those exceptions that have been turned on for the particular split, agent, etc., have actually occurred and have not been deleted from the database because they exceeded the storage parameters for exceptions.

---

## Selecting Rows from More Than One Table

**For historical reports only**, you can merge data from two tables into a single report field. You may, for example, wish to take the number of ACD calls a single agent handled (where data is taken from the `dagent` table) and divide by the total ACD calls handled by the agent's split (where data is taken from the `dsplit` table). Or, you may wish to take the ACD calls a split handled in an intrahour interval (where data is taken from the `hsplit` table) and divide by the total ACD calls the split handled for the day (where data is taken from the `dsplit` table).

To merge data from two tables into a single report field:

- The two tables **must** have at least one database item in common. Typically, the database items in common are indexes.
- Both table names must be entered in the `Table` field of the Row Search ID assigned to the field.
- For custom historical reports — you can use data from more than one table and use the same row search ID for multiple tables.
- At least one join clause must appear in the Row Search ID assigned to the field. A **join clause** makes the values that CMS searches on the same in both tables. In this way, the data extracted from the rows in both tables will be related.

A join clause has the following format:

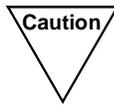
```
tablename1.item1 = tablename2.item1
```

Where `item1` is a database item that the tables have in common.

- You **must** append the table name to each database item included in the `Select rows where:` statement. This rule applies to all database items, even those that are not in a join clause.
- A join clause must use a database item that is also included with a regular “where” clause (one that directly assigns a value or variable name to the database item).

Note

The syntax of a join clause is similar to that in standard INFORMIX SQL syntax. See the *INFORMIX-SQL Relational Database Management System User Guide* for INFORMIX SQL Version 4.10.



If you run a report that merges data from two tables (particularly tables with large amounts of data) into a single field and your `Select rows where:` statement is not specific enough, you may get an error message when you test the design. The specific cause may be that the number of selected rows is very large, and CMS does not have enough space to create temporary files. If this is the case, you should add additional “where” clauses to the row search criteria.

Often, you will need several join clauses in a Row Search ID. For example, you must first specify row search values for either the `hagent` or `hsplit` table if you define a report field that contains the following data expression:

```
hagent.ACDCALLS/hsplit.ACDCALLS
```

You might enter the following “where” clauses:

```
hsplit.SPLIT = $i_split and hsplit.ROW_DATE = $i_date  
and hsplit.STARTTIME = $i_time and hsplit.ACD = $acd
```

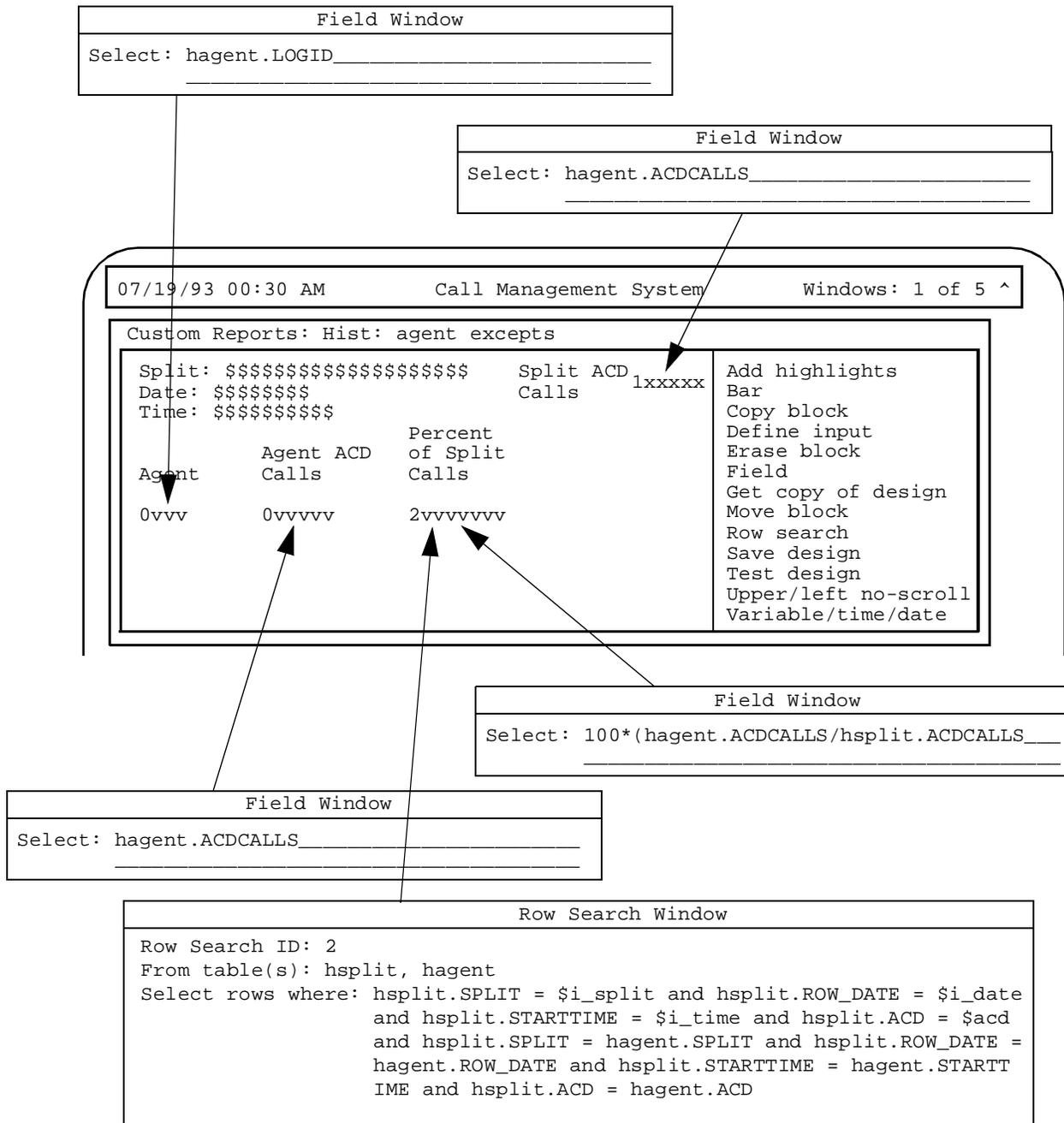
Note

Notice that tablename are appended to each database item.

You must then specify join clauses so that the rows found in one table are related to the values found in the other table. In this example, you would add join clauses (shown in bold) for every regular “where” clause:

```
hsplit.SPLIT = $i_split and hsplit.ROW_DATE = $i_date  
and hsplit.STARTTIME = $i_time and hsplit.ACD = $acd  
and hsplit.SPLIT = hagent.SPLIT and hsplit.ROW_DATE =  
hagent.ROW_DATE and hsplit.STARTTIME = hagent.STARTTIME  
and hsplit.ACD = hagent.ACD
```

To illustrate how this row search selection would affect data in a report, say the report had the design as shown in Figure 6-6.



**Figure 6-6: Report Design with Data from Two Tables Merged in a Field**

Notice that the Percent of Split Calls field merges data as discussed in our example. Also notice that Row Search ID #2, which is assigned to the Percent of Split Calls field, contains the row search statement as discussed in our example.

To illustrate the effect of join clauses, the report design in Figure 6-6 includes the Agent ACD Calls and Split ACD Calls fields.

Notice that each field uses a database item that is also included in the Percent of Split Calls field.

When the report is run, the Percent of Split Calls field will, for each agent in the selected split, divide that agent's ACD calls by the total ACD calls for the split, then multiply by 100 to give a percentage. Thus, as in Figure 6-7, if agent 1000 had 23 ACD calls, and the split Sales-West had 412 ACD calls, the Percent of Split Calls for agent 1000 would be 5.583 ( $100 * [23/412]$ ).

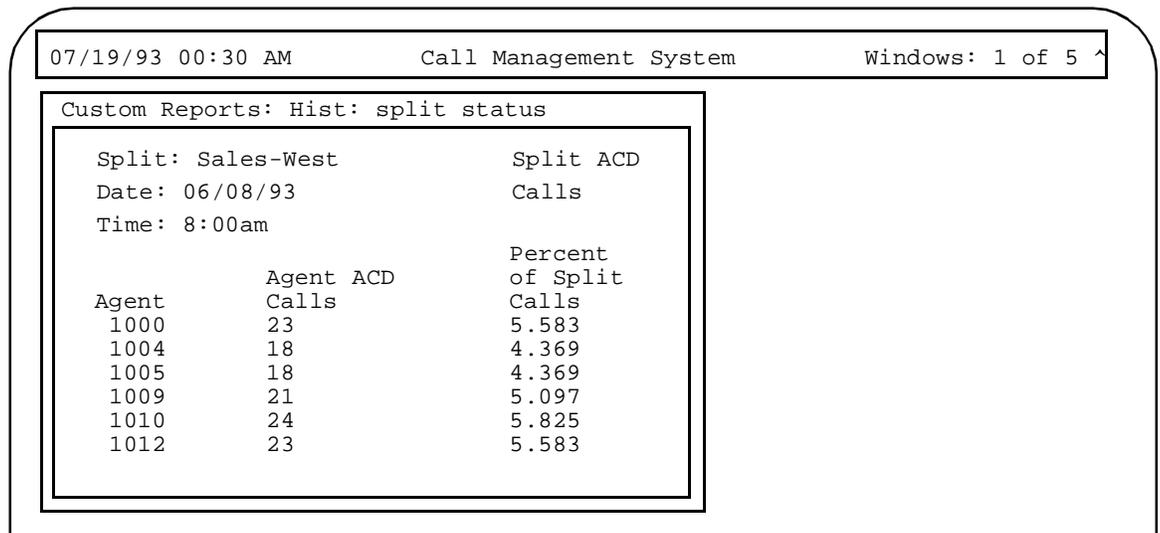


Figure 6-7: Sample Report with Merged Data

---

## Other Alternative Row Search Conditions

For your row search conditions, you will most often use the “where” clauses described in Chapter 4, "Defining the Data for a Custom Report". However, several additional “where” clause formats are available. This section describes those formats.

---

### Selecting Rows Based on a Range of Values

If you want a range of splits included in the report, you might use two “where” clauses as in the following example:

```
Select rows where: SPLIT >= 1 and SPLIT <= 5
```

Then, when you run the report, CMS finds rows for Splits 1 through 5, as shown in the following illustration.

SPLIT	ACDCALLS	ABANDONS	ACDTIME	ABNTIME	
1	443	48	36898	988	...
2	234	37	20012	777	...
3	111	20	13111	400	...
4	652	59	53442	1058	...
5	451	32	27635	644	...
6	93	11	15321	245	...
7	509	43	35401	851	...
8	391	31	19768	603	...
9	142	10	9786	203	...
10	480	39	33389	789	...

Note

In most cases, the easiest way to specify a range is to define a report input field that will accept a range. See the "Selecting Rows Based on a Range of Values" section in this chapter.

## Using Apostrophes for Some Database Item Values

Some database items require that, if you **hardcode** values in a “where” clause, you enclose the values in apostrophes ('), as shown in the following example.

```
Select rows where: ROW_DATE > '07/01/93'
```

Standard database items whose values you must enclose in apostrophes are:

- VDN (the value is a VDN number)
- EXTENSION (the value is an extension number)
- LOGID (the value is an agent login ID)
- EQLOC (the value is a 9-digit trunk location number)
- ROW\_DATE (the value is a date in mm/dd/yy format)
- CWC (the value is a call work code of 1 to 16 digits)

Also, any custom database items you define as CHAR or DATE columns in INFORMIX are items whose hardcoded values you must enclose in apostrophes.

**For historical reports only**, an alternative format for these database items is:

```
Expression matches 'value'
```

In this type of clause, **matches** is the same as **=**. However, this type of clause lets you use wildcard searches. That is, within the apostrophes, you can use an asterisk (\*) or a question mark (?).

The asterisk (\*) matches any and all characters, including blanks and no characters. Look at the following examples:

```
Select rows where: EQLOC matches '01*'
```

This clause finds all rows where the EQLOC value begins with 01, which would mean all trunks for module 01. Thus, 010012020, 010211110, and 011023100 are values that would match.

```
Select rows where: ROW_DATE matches '* /01*'
```

This clause finds all rows where the ROW\_DATE value has 01 as its dd (day of the month). That is, the clause searches for the first day of each month. Thus, 01/01/93, 04/01/93, and 10/01/92 are values that would match.

**Note**

Actually, **\* /01\*** would also find all dates, if they had passed, in the year 2001 (for example, 01/22/01, 08/03/01, and 11/31/01).

The question mark (?) matches any single character. Look at the following examples:

```
Select rows where: EXTENSION matches '444?'
```

This clause finds all rows where the EXTENSION value is four digits and has 444 as the first three characters. Thus, 4441, 4440, and 4449 would match. However, 444 would not match.

```
Select rows where: LOGID matches '?000'
```

This clause finds all rows where the LOGID value is four digits, begins with any number, and ends with "000." Thus, 4000, 5000, and 9000 would match. 000 would not match.

You can use `not` in a "matches" clause to exclude rows. For example, you may want to exclude a range of login IDs from your report with a clause like the following:

```
Select rows where: LOGID not matches '2*'
```

This clause finds all login IDs except those starting with "2." If you have 4-digit login IDs, login IDs from 2000 to 2999 would be excluded.

---

## Using String-value Database Items

String-value database items contain numerical data that the Dictionary translates to display current states or state changes. For example, a report field using the string-value database item WORKMODE will display AVAIL, ACD, ACW, and so on, depending on what state the particular agent is currently in. However, tables store states as numbers, not strings. When you run a report, CMS simply substitutes the character strings for the numerical values. This process is identical to the substitution of names for split numbers, trunk group numbers, vectors, and so on.

If you want to use string-value database items in a "where" clause, you must specify numerical values, not string values.

For example, say that you want a current real-time agent report listing data only for agents on extension-in or extension-out calls. You can select the Current Interval Agent table and enter a statement as follows:

```
Select rows where: SPLIT = $splitvar and WORKMODE > 10  
and WORKMODE < 60
```

This statement says to find rows for a user-specified split where the agent state is one of the following:

ACWIN (numerical value of 20)  
ACWOUT (numerical value of 30)  
AUXIN (numerical value of 40)  
AUXOUT (numerical value of 50)

See Table A-22 and Table A-23 in Appendix A, "Database Items and Calculations" for a complete list of row search values for string-value database items.

---

## Other Available Formats for "Where" Clauses

**For historical reports only**, you may specify a list of hardcoded values using the following format:

```
Expression in (list of values)
```

As with a basic "where" clause, the `Expression` can be a database item or calculation. The values you list in the parentheses must be separated by commas. Also, you must use apostrophes for those values that normally require them. For example, the following "where" clause specifies three dates for the report:

```
Select rows where: ROW_DATE in ('07/01/93',  
'07/08/93','07/15/93')
```

The following "where" clause specifies three splits for the report:

```
Select rows where: SPLIT in (1,7,22)
```

**For historical reports only**, you can also exclude rows using a list of values by adding `not` to the clause. Using `not` can be extremely useful if you want to exclude, for example, lunch time intrahour intervals from your intrahour historical reports, as shown in the following example:

```
Select rows where: STARTTIME not in (1130, 1200,  
1230).
```

---

## Repeating Aggregate Function Values in Historical Reports

Normally, a field (or bar) that contains an aggregate function (**sum**, **max**, **min**, or **avg**) displays just one value. This is true no matter what your “Select rows where” criteria is. Therefore, you would normally select “discrete” as the field/bar type in the row search ID assigned to aggregate functions.

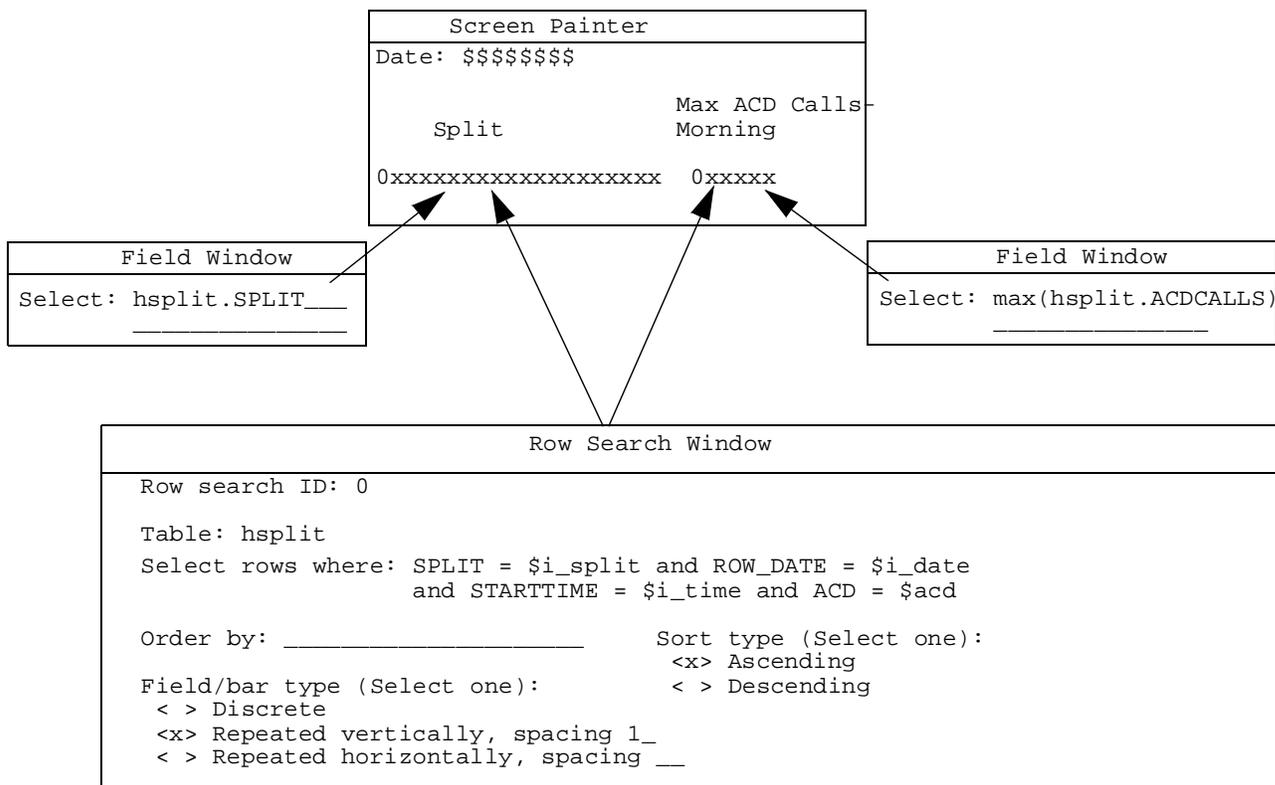
However, you may at times want CMS to display multiple values for an aggregate function. **In historical reports only**, CMS can display multiple values for an aggregate function. For CMS to do this, the aggregate function **must** share a row search ID with one or more fields that do not have an aggregate function.

For example, you may want a report (Figure 6-8) that shows the maximum (max) ACD calls in an interval for each of a variety of splits.

	Date: 07/01/93
	Max ACD Calls-
Split	Morning
1	652
2	491
3	297

**Figure 6-8: Sample of Repeated Aggregate Function Report**

This report would have the following design.



**Figure 6-9: Sample Report Design for Repeated Aggregate Functions**

According to the design, CMS searches the Intrahour Split table (Figure 6-10) for the splits the user ordered when running the report (Splits 1, 2, and 3 in our example). CMS also searches for date (07/01/93 in our example) and the maximum ACD calls (in boxes) in the selected range of intrahour intervals for each of the selected splits.

DATE	INTERVAL	SPLIT	ACDCALLS	ABANDONS	ACDTIME	ABNTIME
070193	0800	1	443	48	36898	988
070193	0800	2	234	37	20012	777
070193	0800	3	111	20	13111	400
070193	0900	1	652	59	53442	1058
070193	0900	2	451	32	27635	644
070193	0900	3	93	11	15321	245
070193	1000	1	509	43	35401	851
070193	1000	2	391	31	19768	603
070193	1000	3	142	10	9786	203
070193	1100	1	480	39	33389	789
070193	1100	2	491	22	26789	549
070193	1100	3	297	15	12530	402
070293	0800	1	399	36	37651	1452
070293	0800	2	299	20	29602	7616
070293	0800	3	138	13	11523	2569
070293	0900	1	400	46	36178	1745
070293	0900	2	300	33	24303	1109
070293	0900	3	225	12	15628	367
070293	1000	1	394	40	40002	1322
070293	1000	2	323	34	29881	1188
070293	1000	3	105	14	12115	704
070293	1100	1	418	41	34819	1256
070293	1100	2	246	30	21173	980
070293	1100	3	100	18	10281	589
070393	0800	1	417	34	37856	1340
070393	0800	2	247	24	26308	1299
070393	0800	3	141	14	12567	688
070393	0900	1	444	43	39003	1001

**Figure 6-10: Sample Row Search of Grouped Aggregate Functions**

CMS would then display the values found in the report. However, notice in Figure 6-10 that CMS found four rows with the SPLIT value of 1, four rows with SPLIT value 2, and four rows with SPLIT value 3, but only displayed each value once in the report. This is because the aggregate function `max(hsplit.ACDCALLS)` field shares the same row search ID with the `hsplit.SPLIT` field.

If the `hsplit.SPLIT` field and the `max(hsplit.ACDCALLS)` fields were assigned different row search IDs (with each ID having identical criteria), the report for Splits 1, 2, and 3 would show data as follows:

Date: 07/01/93

Split	Max ACD Calls- Morning
1	652
1	
1	
1	
2	
2	
2	
2	
3	
3	
3	
3	

The display of a value once only to represent multiple occurrences of the same value is called **grouping** and can be done only when sum, max, min, or avg values are listed based on the unique values found for other fields. The rules for grouping data are as follows:

- If you assign a row search ID to one or more aggregate function fields, you may assign the same row search ID to a maximum of eight nonaggregate fields.
- Assigning the same row search ID to both aggregate functions and nonaggregate fields makes sense only if the nonaggregate fields contain identifier data (split numbers, login IDs, dates, interval start times, vector numbers, and so on).
- If you assign the same row search ID to both aggregate functions and a nonaggregate field, the report will display a single value for each unique value found for the nonaggregate field (that also matches the row search criteria). If multiple rows contain the same value, CMS will still list the value only once. For this reason, only identifier fields should have the same row search ID as aggregate functions.
- If you assign the same row search ID to aggregate functions and **more than one** nonaggregate field, the report will display a single row of data for each unique **combination** of values for the nonaggregate fields.

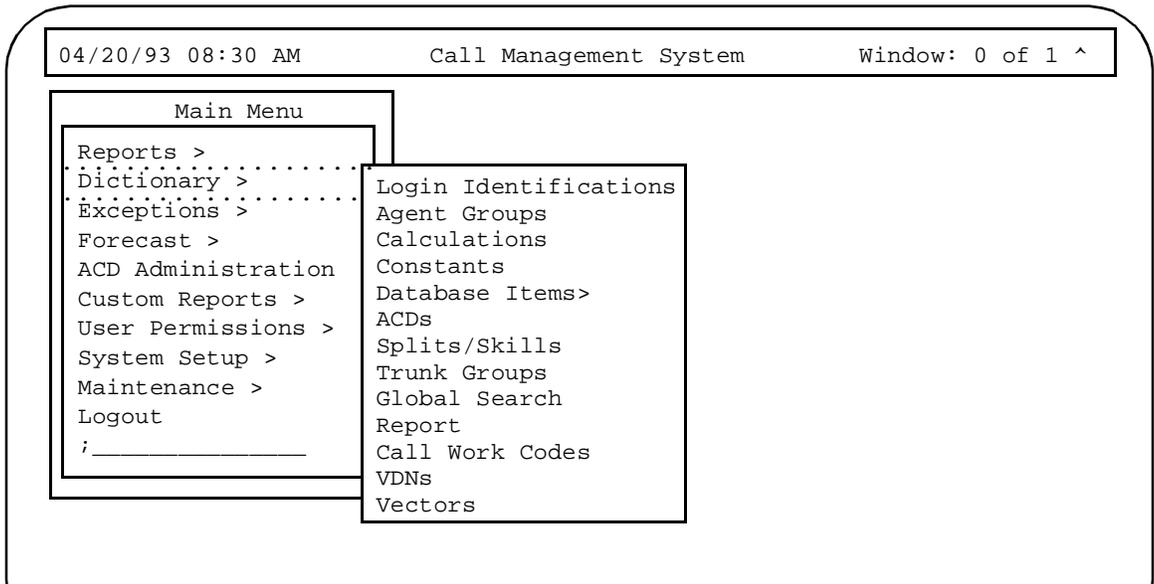


---

# General Information

From the Dictionary subsystem (Figure 7-1), you can:

- Enter CMS login IDs and corresponding agent names.
- Assign names to splits/skills, trunk groups, call work codes, ACDs, VDNs, and vectors.
- Create agent groups.
- Modify agent, split/skill, and trunk string values.
- View standard CMS database items and calculations.
- Define your own calculations, constants, and custom database items.
- Globally search for anything in the Dictionary subsystem and search for patterns from any data entry fields.
- Obtain a report on most parts of the Dictionary subsystem.



**Figure 7-1: Dictionary Menu**

**Note** If you have not purchased the Vectoring feature, the VDNs and Vectors items do not appear on your Main Menu.

## Dictionary- Specific Rules

- Names (synonyms) must begin with an alphabetic character.
- Dictionary names can be 1 to 20 characters long, and can include underscores, blanks, commas, periods, single quotes, and the plus sign.
- Descriptions in the Dictionary can be 1 to 50 characters long and can include all typewriter characters except the semicolon (;), backslash (\), grave accent (`), tilde (~), double quotes (“), pipe (|), asterisk (\*), and question mark (?).
- Names must be unique within each section of the Dictionary; that is, you can name trunk group 1 “sales” and split/skill 1 “sales”, but you can not name split/skill 1 “sales” and split/skill 2 “sales”.
- Pattern searching is allowed for string fields; that is, if you know your field entry begins with the letters “ac”, you can type “ac\*” in the field. The asterisk (\*) matches any characters that follow the “ac”. The result may be several matches, no match, or only one match. If you enter only “\*” in the field or leave the field blank, you will get a list of everything.

The question mark (?) searches on a single character; that is, using the example above, if you search on the letters “ac”, and you enter “ac?”, the question mark will match any single character that follows the “ac”.

---

# Login Identifications

---

## Purpose

From the Login Identifications window, you assign agent names to login IDs (which agents use to log into their voice terminals). The login IDs are used by CMS to identify measured ACD agents. After an agent's name is assigned to a login ID, CMS windows and reports display that agent's name instead of the login ID number.

---

## Things to Know Before You Start

- Entering agent names in the Dictionary is not required. However, CMS Administration windows and reports are easier to understand if agent names appear instead of login IDs. Depending on the amount of space on the report, agent names may be truncated.
  - You can not assign more than one agent name to the same login ID.
  - You can not have duplicated login IDs and agent names. You will receive a message stating that the login ID or name already exists.
  - You can not assign the same agent name to multiple login IDs.
  - You can only use numbers for login IDs.
  - The "Dictionary-Specific Rules" apply.
  - See AT&T 585-215-521, *CMS Administration* for the action list procedures, common rules for field entry items, and field editing information.
- 

## Prerequisite System Administration

- To view login IDs, you need **read** permission for the Dictionary subsystem.
  - To add, delete, or modify login IDs or agent names, you must have **write** permission for the Dictionary subsystem. See Chapter 7, "Dictionary" for more information.
- 

## Relationships To Other Subsystems

### Reports

If you assign names to the login IDs, agent names appear on reports. If you make any additions or changes to login IDs, the changes do not appear on any real-time report that is currently running. You must exit the report and rerun it to see the new agent name(s).

### Timetable

You can place the Login Identification window on a timetable. See AT&T 585-215-521, *CMS Administration* for information about timetables.

---

## Login Identifications Window

To add, modify, delete, or view login IDs, you must complete the Login Identifications window.

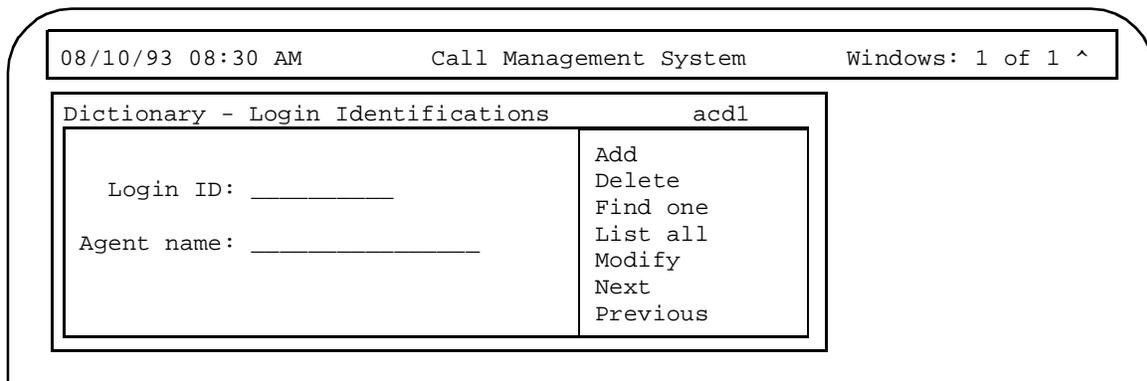


Figure 7-2: Login Identifications Window Example

### Field/Action List Usage

Add

Type the new Login ID and Agent name and select Add from the Action List.

Delete

Type the Login ID and select Delete from the Action List.

Modify

Use Find one to retrieve the record to be modified, then update the Login ID or Agent name and select Modify from the Action List.

Find one or List all

If you are doing a Find one or List all and leave the fields blank, all login IDs will be listed (the same as if you entered an \*).

List all displays a list of agent names and the corresponding login IDs.

## Field Descriptions

### Login ID

Type the login ID number that you want to view, add, delete, or modify. If you want to change the name `Login ID` field, you must first delete the existing name in the field and add the new one.

Login IDs for a Generic 2 or System 85 switch are 4-digit numbers, with the first digit always greater than 0. Login IDs for a Generic 1 or Generic 3 switch without Expert Agent Selection (EAS) may be 1- to 9-digit numbers. Login IDs for a Generic 3 Version 2 switch with EAS must be five digits or less. The following are examples of Login IDs:

For Generic 2/System 85:    1234  
                                  1000  
                                  9999

For Generic 1/Generic 3:    1 (1-digit logins)  
                                  423 (3-digit logins)  
                                  1234567 (7-digit logins)  
                                  999999999 (9-digit logins)

For G3V2:                    92345  
                                  99999  
                                  333

### Agent name

Type the name of the agent that corresponds to the login ID.



CMS lists names alphabetically based on the first character entered in the `Agent name` field. If the first character is the first name of an agent (i.e., Jane Brown), CMS will use the J, *not the B for Brown*, to sort alphabetically.

---

# Agent Groups

---

## Purpose

You group agents, without regard to split/skill assignment, to meet your special needs. For example, you could create a group for new employees or employees with special qualifications.

From the Agent Groups window, you will create and name, copy, or delete your group(s). You will also add, delete, or list the agents in your group by selecting `Get Contents` which will display a secondary window (see "Get Contents" later in this section).

---

## Things to Know Before You Start

- Creating Agent Groups is an optional administration procedure.
  - The "Dictionary-Specific Rules" apply.
  - See AT&T 585-215-521, *CMS Administration* for the action list procedures, common rules for field entry items, and field editing information.
- 

## Prerequisite System Administration

- To view agent groups, you must have **read** permission for the Dictionary subsystem.
  - To add, delete, or change an agent group, you must have **write** permission for the Dictionary subsystem.
  - See AT&T 585-215-521, *CMS Administration* for information about assigning read and write permission.
- 

## Relationships To Other Subsystems

### Reports

CMS can generate reports on the group(s) you create. With these reports, you can compare agents in a group to each other or compare one entire group with another group(s).

**Note**

If you add or modify agent groups while displaying the real-time Agent Group report, you will have to exit the report window to see the new or modified agent group information.

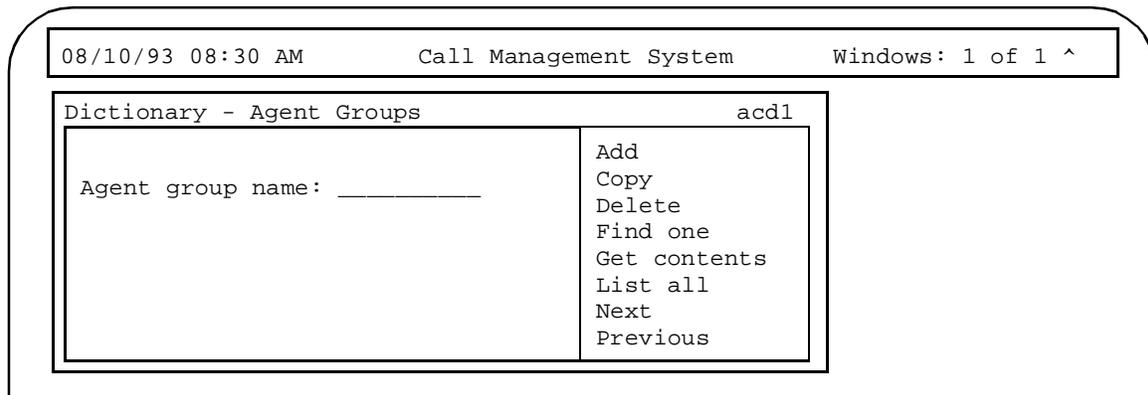
### Timetable

You can also place the Agent Groups window on a timetable. See AT&T 585-215-521, *CMS Administration* for information about timetables.

---

## Agent Groups Window

To add, copy, delete, modify, or view agent groups, you must complete the Agent Groups window.



**Figure 7-3: Agent Groups Window Example**

### Field/Action List Usage

#### Copy

Creates a new group from an existing group. See "Nonstandard Action List Items and Procedures" later in this chapter for more information.

#### Delete

Removes the entire group.

#### Get contents

Adds members (agents) to, deletes members from, or lists the members of an existing agent group. See "Nonstandard Action List Items and Procedures" later in this chapter for more information.

#### List all

Lists all the members of the agent group specified in the Agent group name field.

### Field Description

**Agent group name**

Type the name, up to 20 alphanumeric characters long, for the group you want to add, delete, view, or copy. Your group name should be descriptive and accurately reflect your reasons for creating the group.

### Nonstandard Action List Items and Procedures

The following action list items and procedures are different from the standard action list items and standard procedures described in “User Basics” in the *CMS Administration* document.

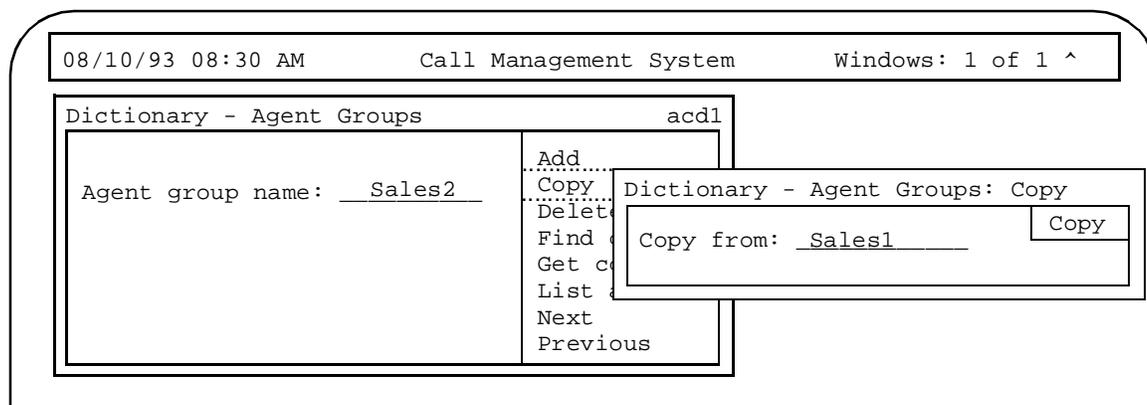
### Copy

`Copy` (Figure 7-4) allows you to create a new group from an existing group. With `Copy`, you can rename a group without having to reenter the members of the group a second time or form a new group starting with an existing agent group. `Copy` creates a secondary window with a `Copy from` field.



The new group name can not already exist in the database as an agent group name.

If you are only renaming the group, delete the original group you copied from if you no longer need that group. This will save space in the database.



**Figure 7-4: Agent Groups—Copy Window**

### Field Description

**Copy from** (Requires an entry.)

Enter the name of the existing Agent Group that you want to copy in the `Copy from` field.

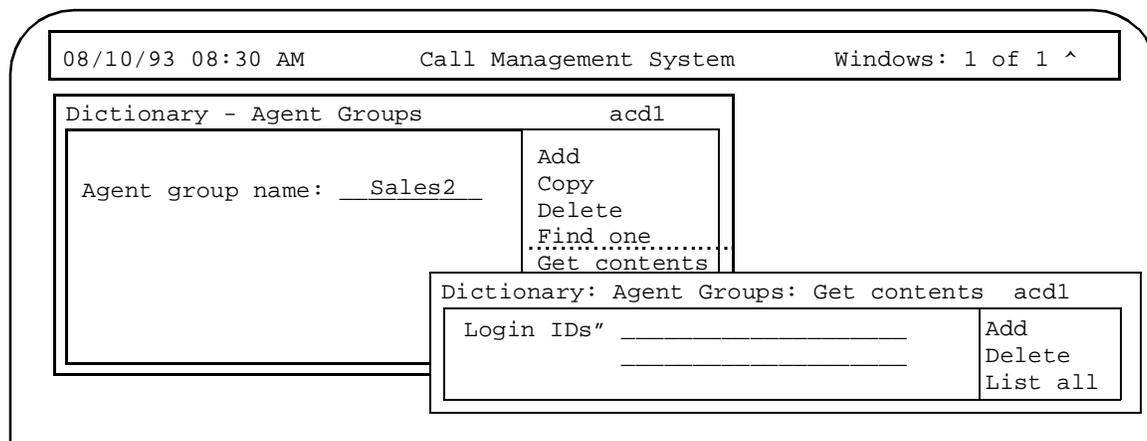
## How to “Copy” Agent Groups

1. Select Agent Groups from the Dictionary menu by typing **AG** and pressing **Return**. → *The Agent Groups window displays.*
2. Type the *new* group name in the Agent group name field and press **Return**. → *Cursor moves to the action list.*
3. Press **c** to select Copy and then press **Return**. → *The Agent Groups Copy window displays.*
4. Type the Agent Group name you want to copy *from* in the Copy from field and press **Return**. → *Cursor moves to the action list.*
5. Press **Return**. → *Working displays on the status line until the action completes, then Successful displays to indicate that the information has been copied from the Dictionary database*

## Get Contents

Get contents brings up the following secondary window (Figure 7-5) that allows you to add members (agents) to, delete members from, or list the members of an existing agent group.

**Note** You must create the group before you can add members to or delete members (agents) from it.



**Figure 7-5: Agent Groups—Get Contents Example**

### Field/Action List Usage

Add

Adds the desired login IDs to the group you selected in the primary window.

Delete

Removes the desired login IDs from the group you selected in the primary window.

List all

Lists all members of the current group.

### Field Description

**Login IDs**

Type the Login IDs of the agents you are adding, deleting, or listing for the group you entered in the Agent group name field.

Up to 1000 values (login IDs) can be entered in this field. Type a semicolon ( ; ) to separate individual values (1001;1004). Type a dash (-) to define a range of values (1001-1004 includes login IDs 1001, 1002, 1003, and 1004).

## How to “Add” Agents Using Agent Groups—Get Contents

1. Select `Agent Groups` from the Dictionary menu by typing **AG** and pressing `Return`. → *The Agent Groups window displays.*
2. Type the name in the `Agent groups name` field, and press `Return`. → *The cursor moves to the action list.*
3. Select `Add` from the action list, and press `Return` to add the name of the agent group if is not already created. If the agent group already exists, go to Step 4. → *Cursor moves back to the Agent Groups window.*
4. To bring up the `Get Contents` window, type **G**, and then press `Return`. → *The Agent Groups: Get Contents window displays.*
5. Type the login IDs you want to add for this particular agent group in the `Login IDs` field, and then press `Return`. → *The cursor moves to the action list.*
6. Type **A** to select `Add`, and then press `Return`. → *Working displays on the status line until the add completes, then Successful displays to indicate that the information has been added to the Dictionary database.*

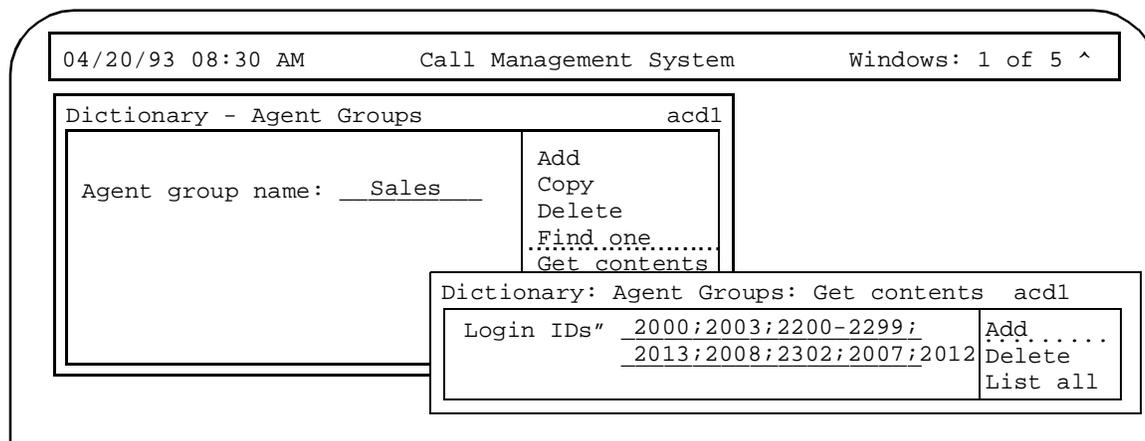


Figure 7-6: Get Contents—Add Example

## How to “Delete” Agents Using Agent Groups—Get Contents

1. Select Agent Groups from the Dictionary menu by typing **AG** and pressing **Return**. → *The Agent Groups window displays.*
2. Type the name in the Agent groups name field and press **Return**. → *The cursor moves to the action list.*
3. To bring up the Get contents window, type **G** and then press **Return**. → *The Agent Groups: Get Contents window appears.*
4. Type the login IDs you want to delete for this particular agent group in the Login IDs: field, and then press **Return**. → *The cursor moves to the action list.*
5. Type **D** to select Delete, and then press **Return**. → *Working displays on the status line until the deletion completes, then Successful displays to indicate that the login IDs have been deleted from the agent group.*

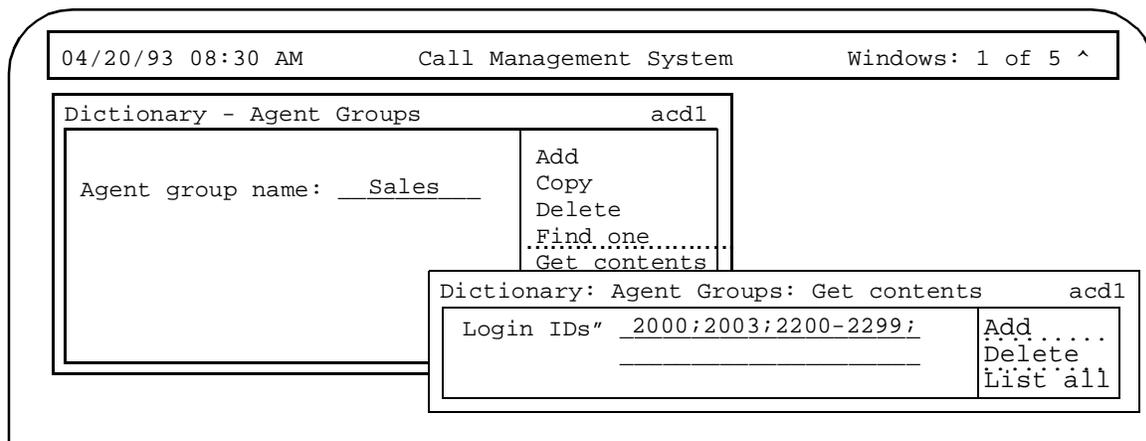


Figure 7-7: Get Contents—Delete Example

## How to “List all” Agents in an Agent Group Using Get Contents

1. Select Agent Groups from the Dictionary menu by typing the **AG** and pressing **Return**. → *The Agent Groups window displays.*
2. Enter the group name in the Agent group name field and press **Return**. → *Cursor moves to the action list.*
3. Type **G** to select Get contents and press **Return**. → *The Agent Groups: Get Contents window displays.*
4. Press **Return** to move the cursor to the action list, and then type **L** to select List all and press **Return** again. → *Working displays on the status line until the action completes, then Successful replaces it. Another window displays listing the agent login IDs. n matches found; permitted ones displayed displays on the List all status line.*

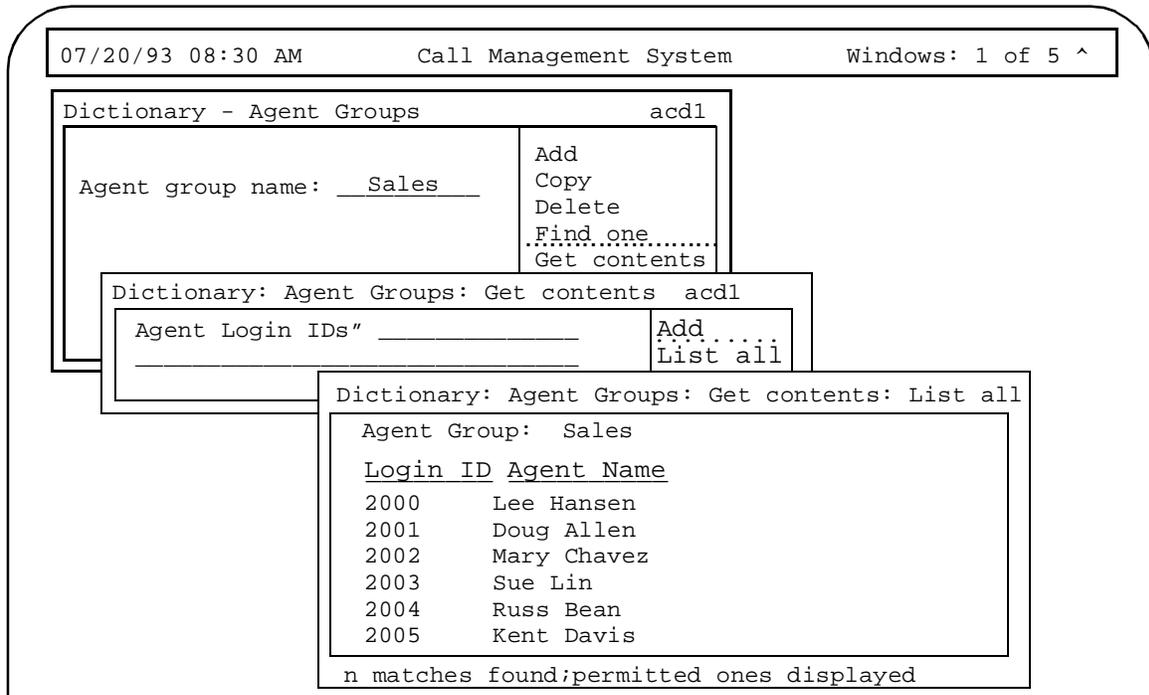


Figure 7-8: Get Contents—List All Window

---

# Calculations

---

## Purpose

Calculation names are abbreviated names for the calculation that is used to create reports. You can view or change standard calculations, or create your own custom calculations for use in custom reports. The calculations for standard reports already exist in the Dictionary.

---

## Things to Know Before You Start

- You can not delete standard calculations.
  - You should identify your own calculations with an all-lower-case letter format to distinguish them from the standard CMS calculations, which have an all-upper-case letter format.
  - If you change a standard CMS calculation, standard reports could be adversely affected. Reports should run, but the results may be different.
  - You can not embed calculations within calculations to more than three levels deep (reports will not run if you do).
  - You can not create calculations that reference each other in a circular fashion (reports will not run if you do).
  - The standard CMS calculations are listed in Appendix A, "Database Items and Calculations".
  - The "Dictionary-Specific Rules" apply.
  - See AT&T 585-215-521, *CMS Administration* for the action list procedures, common rules for field entry items, and field editing information.
- 

## Prerequisite System Administration

- To view calculations, you must have **read** permission for the Dictionary subsystem.
- To change or create a new calculation, you must have **write** permission for the Dictionary subsystem.
- See AT&T 585-215-521, *CMS Administration* for information about assigning read and write permission.

## Relationships To Other Subsystems

### Reports

Standard reports use calculations. You should become familiar with the calculations to understand standard reports better.

### Custom Reports

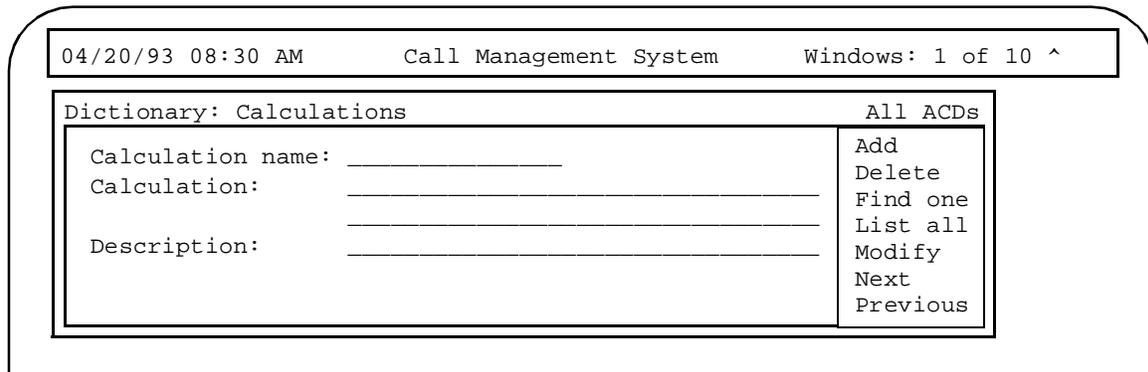
You will use the standard CMS calculations or create your own custom calculations to define custom reports.

**Note** If you run a custom report that uses a calculation that is **not** in the Dictionary, you will receive an error message.

---

## Calculations Window

To view standard calculations and add, delete, modify, or view your own calculations, you must fill out the Calculations window.



**Figure 7-9: Calculations Window Example**

### Field/Action List Usage

#### Add

Type the new Calculation name and Calculation (definition). Remember to use lower-case letters in the name.

#### Delete

You can only delete calculations you create—not standard calculations.

Modify

Use the `Find one` action or type the `Calculation name` and `Calculation`. Make the changes and select `Modify` from the `Action List`.

List one/Find all

List one or all of the calculations in the Dictionary.

## Field Descriptions

### Calculation name

Type the name of the calculation you want to view, add to the database, modify, or delete. The name must be alphanumeric and no more than 20 characters long.

### Calculation

Type the formula for the calculation. For example, the formula for the agent calculation "Average ACD Talk Time" is:

**ACDTIME/ACDCALLS**

**Note**

Spaces are allowed in calculations.

Calculations can include:

- Database items (for example, `ACDCALLS` for ACD calls)
- Constants
- Calculation(s) (calculations within calculations up to three)
- The following arithmetic operators:
  - + (Add)
  - (subtract)
  - \* (multiply)
  - / (divide)
  - ( ) (do first, as in standard mathematical operations).

### Description

Type the description of the calculation. The common rules for Dictionary descriptions apply.

---

# Constants

---

## Purpose

Constants are items with fixed numerical values that you can enter into the database and use in custom reports. Constants do not exist in CMS when it is first installed.

---

## Things to Know Before You Start

- The “Dictionary-Specific Rules” apply.
  - See AT&T 585-215-521, *CMS Administration* for the action list procedures, common rules for field entry items, and field editing information.
- 

## Prerequisite System Administration

- To view a constant, you need **read** permission for the Dictionary subsystem.
  - To add, delete, or change a constant, you need **write** permission for the Dictionary subsystem.
  - See AT&T 585-215-521, *CMS Administration* for information about assigning read and write permission.
- 

## Relationships To Other Subsystems

### Custom Reports

Constants are only used in Custom Reports.

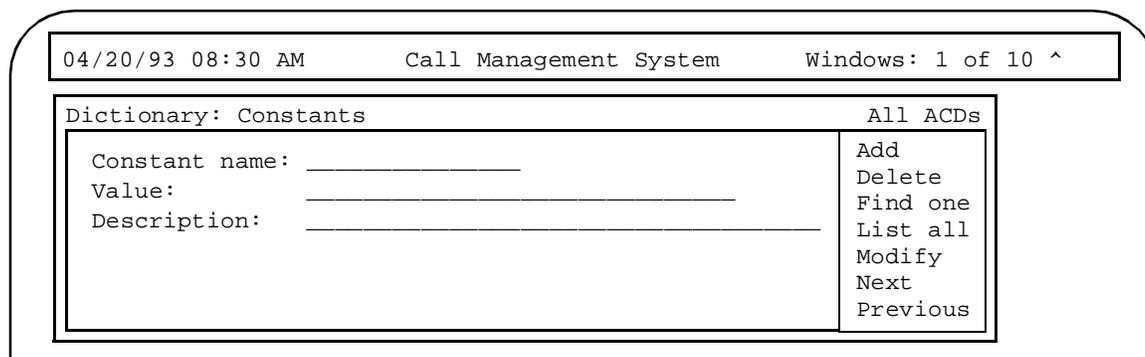


If you run a custom report that uses a constant that has **not** been specified in the Dictionary, you will receive an error message.

---

## Constants Window

To add, delete, modify, or view your own constants, you must complete this window.



**Figure 7-10: Constants Window Example**

**Field/Action List Usage**

Add

Type the new Constant name and Value, then select Add. The name must be alphabetic and no longer than 20 characters.

Delete

Type the Constant name, then select Delete.

Modify

Update the Constant name or Value field and select Modify.

Find one or List all

Displays the constant name, value, and a description of the constant.

**Field Descriptions**

**Constant name**

Type the name of the constant you want to view, add, delete, or modify in the database.

The common rules for entering names applies.

**Value**

Type the numerical value of the constant.

The range is -99999 to +999999.

**Description**

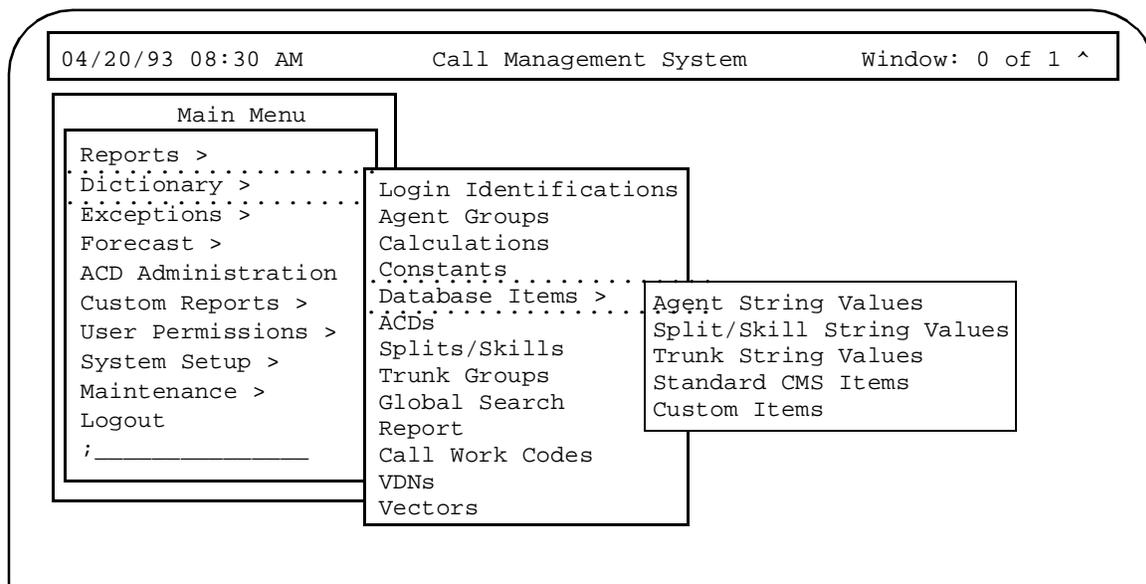
Type the description of the constant.

## Database Items >

Selections from the Database Items menus (Figure 7-11) contain the names for specific types of information stored in the CMS database. Database items may store login IDs, extension numbers, split or skill numbers, trunk numbers, and trunk group numbers. In addition, database items may store statistical data compiled from your call center's activity. The number of ACD calls, the wait time for calls in queue, and whether an agent is currently on an ACD call are examples of this statistical data.

The Database Items subsystem is divided into the following five categories. Descriptions follow for each one.

- Agent String Values
- Split/Skill String Values
- Trunk String Values
- Standard CMS Items
- Custom Items.



**Figure 7-11: Database Items Menu**

---

## Agent String Values

Agent string values are the descriptive words on reports dealing with agents. The *word* is used to describe the value of the data. From the Agent String Values window, you can change the CMS default values for these words to correspond to your own requirements.

### Things to Know Before You Start

- If you assign values that are longer than the field lengths allowed on standard reports, the values will be truncated on those reports.
- If you do **not** assign different values to the Agent String Values, the default values will be used.
- The “Dictionary-Specific Rules” apply.
- See AT&T 585-215-521, *CMS Administration* for the action list procedures, common rules for field entry items, and field editing information.

### Prerequisite System Administration

- To view agent string values, you need **read** permission for the Dictionary subsystem.
- To change any value, you need **write** permission for the Dictionary subsystem.
- See AT&T 585-215-521, *CMS Administration* for information about assigning read and write permission.

### Relationships To Other Subsystems

#### Reports

Any change you make here affects what you see in the descriptive data (word) fields on your standard agent reports.

#### Timetable

The Agent String Values window can be placed on a timetable. See AT&T 585-215-521, in the *CMS Administration* for information about timetables.

### Agent String Values Window

To modify the default agent string values, you must complete this window.

04/20/93 08:30 AM		Call Management System	Windows: 1 of 4 ^
Dictionary: Database Items: Agent String Values		All ACDs	
Work Mode		Call Direction	Modify
ACD:	ACD	IN:	IN
ACW:	ACW	OUT:	OUT
AUX:	AUX		
AVAIL:	AVAIL	Call Origination	
DACD:	DACD	PHONE:	PHONE
DACW:	DACW	KEYBOARD:	KEYBOARD
OTHER:	OTHER	Call Destination	
RINGING:	RINGING	PBX:	PBX
UNKNOWN:	UNKNOWN	OFF:	OFF
UNSTAFF:	UNSTAFF		
Agent Trace Work Mode			
LOGON:	LOGON		
LOGOFF:	LOGOFF		

**Figure 7-12: Agent String Values Window Example**

### Field/Action List Usage

Modify

This window displays with the default values for each agent work mode.

### Field Descriptions

#### Agent Work Mode

If you want to modify any of the agent work mode names, type the new descriptive word in the appropriate `Work Mode` field. Agents can be in any one of the following work states:

- ACD: — The agent is on an ACD call.
- ACW: — The agent is in the after call work state.
- AUX: — The agent is in the auxiliary work state.
- AVAIL: — The agent is available to take an ACD call.
- DACD: — The agent is on a direct agent ACD call.
- DACW: — The agent is in the after call work state for a direct agent ACD call.
- OTHER: — The agent is working on a direct agent call, working on a call for another split or skill, or has put a call on hold and has not chosen another work mode.
- RINGING: — An ACD call is ringing at the agent's voice terminal.
- UNKNOWN: — CMS does not recognize the current state.
- UNSTAFF: — The agent is not staffed (logged into CMS).

### Agent Trace Work Mode

If you want to modify the default Agent Trace Work Mode name, type the change next to LOGON or LOGOFF.

- LOGON: — An agent is logged in and available to take ACD calls.
- LOGOFF: — An agent is logged out and not available to take ACD calls.

### Call Direction

If you want to modify the default Call Direction names, type the change next to IN or OUT.

- IN: — The agent is currently on an incoming call.
- OUT: — The agent is currently on an outbound call.

### Call Origination

**Note** Call origination is used only with the OCM (Outbound Call Management) feature. For more information on OCM, see the documentation shipped with your OCM software package.

If you want to change the default Call Origination names, type the change next to PHONE or KEYBOARD. Agents can be on two different types of outbound calls:

- PHONE: — The agent dials an outbound call using the voice terminal (telephone) dialing pad.
- KEYBOARD: — The agent dials an outbound call using the computer keyboard.

### Call Destination

If you want to modify the default Call Destination names, type the change next to PBX or OFF.

**Note** Call destination is used only with the OCM (Outbound Call Management) feature. For more information on OCM, see the documentation shipped with your OCM software package.

- PBX: — Internal to the switch.
- OFF: — External to the switch.

## Split/Skill String Values

Split/Skill string values are the descriptive words on the Split/Skill Call Profile reports. The *word* is used to describe the value of the data. From the Split/Skill String Values window, you can change the CMS default string values to correspond to your own requirements.

### Things to Know Before You Start

- If you assign values that are longer than the field lengths allowed on standard reports, the values will be truncated to fit on those reports.
- If you do **not** assign different values to the Split/Skill String Values, the default values will be used.
- The “Dictionary-Specific Rules” apply.
- See AT&T 585-215-521, *CMS Administration* for the action list procedures, common rules for field entry items, and field editing information.

### Prerequisite System Administration

- To view any of the split or skill string values, you need **read** permission for the Dictionary subsystem.
- To change any split or skill string values, you need **write** permission for the Dictionary subsystem. See Chapter 7, "Dictionary" for more information.

### Relationships To Other Subsystems

#### Reports

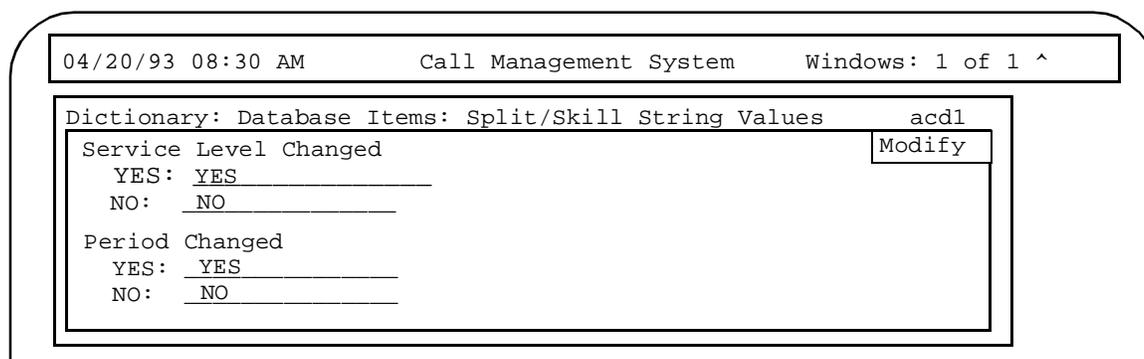
Any change you make here affects what you see in the corresponding fields on the Split/Skill Call Profile report.

#### Timetable

The Split/Skill String Values window can be placed on a timetable. See AT&T 585-215-521, *CMS Administration* for information about timetables.

### Split/Skill String Values Window

To modify the default values for split or skill strings, you must complete the Split/Skill String Values window.



**Figure 7-13: Split String Values Window Example**

**Field/Action List Usage**      Modify

This window displays with the default values for each split/skill state. After changing any of the descriptions, select `Modify` to save the new values in the database.

**Field Descriptions**

**Service Level Changed**

On the Split/Skill Call Profile window (see AT&T 585-215-521, *CMS Administration*), you can change the service levels at any time. From the Split/Skill String Values window, you can modify the following `service level changed` default values that appear on the Split/Skill Call Profile report:

- **YES:** — Type the descriptive word you want to appear on the report if you have changed the service level on the Split/Skill Call Profile.
- **NO:** — Type the descriptive word you want to appear on the report if you have **not** changed the service level on the Split/Skill Call Profile.

**Period Changed**

On the Split/Skill Call Profile report (both real-time and historical), there are ten time increments of administrable length. You can modify the following `period changed` default values that appear on the Split/Skill Call Profile report:

- **YES:** — Type the descriptive word you want to appear on the report if you have changed the time periods on the Split/Skill Call Profile report. If you want to change `YES`, enter your descriptive word.
- **NO:** — Type the descriptive word you want to appear on the report if you have **not** changed the time periods on the Split/Skill Call Profile report. If you want to change `NO`, enter your descriptive word.

## Trunk String Values

Trunk string values are descriptive words on trunk reports (for example, IDLE, HOLD, QUEUED, etc.). A *word* is used to describe the value of the data. From the Trunk String Values window, you can change the CMS default values that appear on these reports to anything that fits your particular needs.

### Things to Know Before You Start

- If you assign values that are longer than the field lengths allowed on standard reports, the values will be truncated to fit on those reports.
- If you do **not** assign different values to the Trunk String Values, the default values will be used.
- The “Dictionary-Specific Rules” apply.
- See AT&T 585-215-521, *CMS Administration* for the action list procedures, common rules for field entry items, and field editing information.

### Prerequisite System Administration

- To view any trunk string values, you need **read** permission for the Dictionary subsystem.
- To make any changes to trunk string values, you need **write** permission for the Dictionary subsystem.
- See AT&T 585-215-521, *CMS Administration* for information about assigning read and write permission.

### Relationships To Other Subsystems

#### Reports

Any changes you make to the trunk string values affect what you see in the corresponding fields on any of the standard trunk reports.

#### Timetable

The Trunk String Values window can be placed on a timetable. See AT&T 585-215-521, *CMS Administration* for information about timetables.

### Trunk String Values Window

To change the default trunk string values, you must complete this window.

04/20/93 08:30 AM		Call Management System		Windows: 1 of 1 ^	
Dictionary: Database Items: Trunk String Values				All ACDs	
Trunk State				Modify	
IDLE:	_____	IDLE	_____	Call Priority (Non-vectoring)	
SEIZED:	_____	SEIZED	_____	YES:	_____
QUEUED:	_____	QUEUED	_____	NO:	_____
CONN:	_____	CONN	_____	Call Priority (Vectoring)	
DABN:	_____	DABN	_____	LOW:	_____
FBUSY:	_____	FBUSY	_____	MED:	_____
FDISC:	_____	FDISC	_____	HIGH:	_____
HOLD:	_____	HOLD	_____	TOP:	_____
MBUSY:	_____	MBUSY	_____	Call Direction	
RINGING:	_____	RINGING	_____	IN:	_____
UNKNOWN:	_____	UNKNOWN	_____	OUT:	_____
Agent Trace Work Mode		All Trunks Busy			
LOGON:	_____	LOGON	_____	YES:	_____
LOGOFF:	_____	LOGOFF	_____	NO:	_____

**Figure 7-14: Trunk String Values Window Example**

**Field/Action List Usage**      Modify

This window is displayed with the default values for each trunk state. After changing any of the descriptions, select `Modify` to save the new values in the database.

**Field Descriptions**      **Trunk State**

If you want to modify any of the trunk states, type the new descriptive word next to any of the following `Trunk State` fields. Trunks can be in any of the following states:

- `IDLE`: — The trunk is waiting for a call.
- `SEIZED`: — A call is holding the trunk, either incoming or outgoing.
- `QUEUED`: — An ACD call has seized a trunk and is queued to a split or skill waiting for an agent to become available.
- `CONN`: — The caller and an agent are connected on an ACD call.
- `DABN`: — The caller abandoned the call.
- `FBUSY`: — The caller receives a forced busy signal (Generic 1, Generic 3, or Generic 2/System 85 with Call Vectoring only).

- **FDISC**: — The caller receives a forced disconnect (Generic 1, Generic 3, or Generic 2/System 85 with Call Vectoring only).
- **HOLD**: — The agent has put the caller on hold.
- **MBUSY**: — The trunk is out of service for maintenance purposes.
- **RINGING**: — The call is ringing at an agent's voice terminal.
- **UNKNOWN**: — CMS can not recognize the trunk state.

#### **Queue Type**

To replace the default value for `Queue Type`, type the new descriptive name next to any of the following fields. The name you enter here will appear instead of the default in any real-time reports containing the trunk database item queue type. (No standard reports contain this item.)

- **MAIN**: — The call seizing the trunk is queued to a split or skill as a result of a “queue to main split/skill” vector command.
- **BACKUP**: — The call seizing the trunk is queued to a split or skill as a result of a “check backup split/skill” vector command.

#### **Call Priority (Non-vectoring)**

To replace the `Call Priority` default values, type your descriptive name next to any of the following.

- **YES**: — The call seizing the trunk has priority entering the split.
- **NO**: — The call seizing the trunk does not have priority entering the split.

#### **Call Priority (Vectoring)**

To replace the `Call Vectoring` with vectoring default values, type the new descriptive name next to any of the following. The priority level at which calls on a trunk will queue to a split or skill is specified using either the “queue to main split/skill” or “check backup split/skill” command in the vector associated with the trunk. The name you enter here will appear instead of the default in real-time reports containing the trunk database item `priority`. (No standard reports contain this item.)

- **LOW**: — The call seizing the trunk is queued to a split or skill at the lowest priority level.
- **MED**: — The call seizing the trunk is queued to a split or skill at the second lowest priority level.

- **HIGH:** — The call seizing the trunk is queued to a split or skill at the second highest priority level.
- **TOP:** — The call seizing the trunk is queued to a split or skill at the highest priority level.

#### Call Direction

If you want to modify the `Call Direction` items, type the new descriptive next to `IN` or `OUT`.

- **IN:** — The trunk is currently carrying an incoming call.
- **OUT:** — The trunk is currently carrying an outgoing call.

#### All Trunks Busy

To change the `All Trunks Busy` default values, type the new descriptive next to `YES` or `NO`.

- **YES:** — All trunks are currently busy (in use or MBUSY).
- **NO:** — Not all trunks are busy.

## Standard CMS Items

Standard CMS items (database items) are names of columns in CMS database tables. CMS uses these tables to collect, store, and retrieve ACD data.

## How the Tables Are Used

Each column in a table represents a specific type of ACD data (number of ACD calls, abandons, time on ACD calls, etc.). Therefore, standard database items can not be **modified or deleted**. You are allowed access to the information about each database item, the description for that item, and the table(s) where the item appears.

To help you understand how CMS uses these tables, an example of a Current Real-Time Agent table with standard CMS database item column headings follows:

**Table 7-1: Current Real-Time Agent Example**

EXTENSION	SPLIT	LOGID	LOGONSTART	WORKMOD	STARTED	DIRECTION	CHANGED	>*
1000	1	4000	8:00	AVAIL	8:00	NUL	8:01	>
1001	1	5966	7:58	ACD	8:00	IN	8:04	>
1002	1	2200	7:59	ACD	8:00	IN	8:03	>
.	.	.	.	.	.	.	.	>

**Table 7-1: Current Real-Time Agent Example**

EXTENSION	SPLIT	LOGID	LOGONSTART	WORKMOD	STARTED	DIRECTION	CHANGED	>*
.	.	.	.	.	.	.	.	>
.	.	.	.	.	.	.	.	>

> \* indicates that more database item column headings follow, and the . (dots) indicate more data follows down the table.

### Column Headings (Database Items) Explanations for Table 7-1

EXTENSION	The extension number that the agent is using.
SPLIT	The split or skill number that the extension is assigned to and/or that the agent logged into.
LOGID	The login identification the agent used to staff the extension.
LOGONSTART	The time the agent logged into CMS.
WORKMODE	The agent's current work mode (AVAIL, AUX, ACD, ACW, OTHER, DACD, DACW).
STARTED	The time of day the agent started this workmode.
DIRECTION	The direction (IN, OUT, NULL) of the current call.
CHANGED	The time of day when the agent started a new activity.

As you can see from this very brief example, each extension will have an entry for each agent activity, and these tables can become quite large. Initially, you will probably be looking up database items for their definitions, but you will use them most when creating custom reports. See Appendix A, "Database Items and Calculations" for more information.

## Things to Know Before You Start

- You can not modify or delete standard database items.
- You can only view information about each database item. This section of the Dictionary is **read** only.
- The "Dictionary-Specific Rules" apply.
- See AT&T 585-215-521, *CMS Administration* for the action list procedures, common rules for field entry items, and field editing information.

## Prerequisite System Administration

- You need **read** permission for the Dictionary subsystem to view the database items.

## Relationships To Other Subsystems

### Custom Reports

You will use the database items when creating custom reports.

## Standard CMS Items Window

To view standard CMS items, complete the following window.

04/20/93 08:30 AM		Call Management System		Windows: 1 of 10 ^	
Dictionary: Standard CMS Items				All ACDs	
Database item:	_____	Find one			
Description:	_____	List all			
Table:	_____	Next			
		Previous			

**Figure 7-15: Standard CMS Items Window Example**

## Field/Action List Usage

You may use pattern searching in any of the fields on the Standard CMS Items window.

Find one/List all

Displays the database item name(s), the table(s) in which the item occurs, and a description of the database item(s).

## Field Descriptions

### Database item

Type the name of the database item you want to look up.

### Description

Describes the database item. If you know the description, type it here.

### Table

Lists all the tables (one table at a time) that contain this particular database item (real-time and historical), or all of the items in one database. Table names must be alphabetic.

## Custom Items

From the Custom Items window, you can define your own database items which will be stored in their own tables within the CMS database. This allows you to combine your own data with CMS data on custom reports. You will also be able to change or delete your own database items.

### Prerequisite System Administration

- You need **write** permission for the Dictionary subsystem and Custom Reports to create custom database items.
- You should first create the table in INFORMIX\* before you create a custom database item.

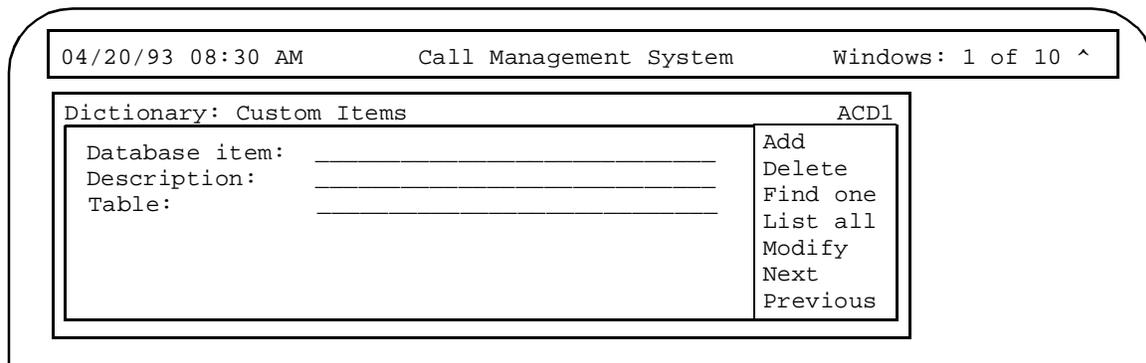
### Relationships To Other Subsystems

#### Custom Reports

If you run a custom report that uses a database item that has **not** been added to the Dictionary, you will receive an error message.

### Custom Items Window

To add, delete, modify, or view your own custom database items, complete the Custom Items window.



**Figure 7-16: Custom Items Window Example**

---

\*INFORMIX is a registered trademark of Informix Software, Inc.

**Field/Action List Usage****Add**

Type the Database item name, Description, and Table name. The item and table fields are required to add an item.

**Delete**

Type the Database item name and Table name to delete items.

**Modify**

Use Find one to retrieve the item information, then update it appropriately.

**Find one/List all**

Displays the database item name(s), the table(s) in which it occurs, and a description of the database item(s).

**Field Descriptions****Database item**

Type the name of the custom database item you want to add, modify, delete, or view. The custom database item must be unique with the table you specify in the table field. Item names must be alphanumeric and no more than 20 characters long.

**Description**

Type a description of the database item. You can add, modify, or delete this description. Item descriptions can be up to 50 characters long.

**Table**

Type the name of the table in which this particular database item appears. You should first create and define the table in INFORMIX.

---

# ACDs

---

## Purpose

From the ACDs window, you assign names to any real or pseudo-ACD(s).

---

## Things to Know Before You Start

- You can add, delete, or change an ACD name regardless of the ACD you are currently logged into. For example, you could be logged into *ACD 1* and change the name for *ACD 3*.



This change will not appear on the changed ACD's window border until you open a new window.

- The “Dictionary-Specific Rules” apply.
  - See AT&T 585-215-521, *CMS Administration* for the action list procedures, common rules for field entry items, and field editing information.
- 

## Prerequisite System Administration

- To add, delete, or change an ACD's name, you need **write** permission for the Dictionary subsystem.
  - To view ACD names, you need **read** permission for the Dictionary subsystem.
  - See AT&T 585-215-521, *CMS Administration* for information about assigning read and write permission.
- 

## Relationships To Other Subsystems

### All Subsystems

The name you assign to a specific ACD appears on all reports and window titles associated with that particular ACD (real or pseudo).

### Timetable

You can place the ACDs window on a timetable. See AT&T 585-215-521, *CMS Administration* for information about timetables.

## ACDs Window

To add, modify, delete, or view ACD names, complete the following window.

**Figure 7-17: ACDs Window Example**

### Field/Action List Usage

Add

Requires an entry in the `ACD name` and `ACD Number` fields.

Delete

Requires an entry in the `ACD name` field.

Modify

Requires an entry in the `ACD number` field.

Find one/List all

Displays the `ACD name`, `ACD number`, and a description of that ACD.

### Field Descriptions

**ACD name**

Type the `ACD name` you want to add, delete, modify, or view.

**ACD number**

Enter a number between 1 and 26 that corresponds to the name entered in the `ACD name` field.

**Description**

Enter any descriptive information about this ACD, up to 50 characters long.

---

## Splits/Skills

---

### Purpose

You can assign names to your ACD splits or skills from the Splits/Skills window. The split or skill names then appear on your split or skill reports, making your reports easier to identify and read.

---

### Things to Know Before You Start

- Split or skill names should reflect the configuration of your splits or skills and ACD(s). For example, if you want splits in your system to be broken out by “Sales,” “Customer Service,” and “Wholesale,” assign those names to the splits that handle those areas of the business. On the other hand, if you want skills in your system to be broken out by “French,” “Spanish,” and “German,” assign those names to the skills that handle calls in those languages.
  - When naming splits or skills, you may want to be consistent with the names given splits or skills by your switch administrator.
  - If you assign a name to a split or skill, the split or skill number will no longer appear on split or skill reports or windows. The split or skill name will appear instead.
  - The “Dictionary-Specific Rules” apply.
  - See AT&T 585-215-521, *CMS Administration* for the action list procedures, common rules for field entry items, and field editing information.
- 

### Prerequisite System Administration

- To list the assigned split or skill names, you need **read** permission for the Dictionary subsystem.
- To add, delete, or change a split or skill name, you need **write** permission for the Dictionary subsystem and the appropriate split or skill.
- See AT&T 585-215-521, *CMS Administration* for information about assigning read and write permission.

## Relationships To Other Subsystems

### Reports

When you assign a split or skill name, that name appears on all Split/Skill windows and Split/Skill reports (real-time and historical). If you make any additions or changes to split or skill names, the changes do not appear on any real-time report that is currently running. You must exit the report and rerun it to see the new split or skill name(s).

### Exceptions

If you assign exceptions to splits or skills, the split or skill names you assign appear in the exceptions text. Also, if you change a split or skill name, the new name appears in the exception text for all exceptions logged after the change.

### Forecasting

Split or skill names appear on forecasting reports if you have purchased and are using the Forecasting feature.

### Timetable

You can place the Splits/Skills window on a timetable. See AT&T 585-215-521, *CMS Administration* for information about timetables.

## Splits/Skills Window

To add, delete, modify, or view split or skill names, you must complete the following window.

04/20/93 08:30 AM		Call Management System	Windows: 1 of 10 ^
Dictionary: Splits/Skills			
Split/Skill name:	_____	Add	
Split/Skill number:	_____	Delete	
Description:	_____	Find one	
		List all	
		Modify	
		Next	
		Previous	

Figure 7-18: Splits/Skills Window Example

**Field/Action List Usage**

Add

Requires an entry in the `Split/Skill name` and `Split/Skill number` fields.

Delete

Requires an entry in the `Split/Skill name` field.

Modify

Requires an entry in the `Split/Skill name` and `Split/Skill number` field.

Find one/List all

Displays the split or skill name(s), split or skill number(s), and a description(s) of the split or skill.

**Field Descriptions**

**`split/skill name`**

Type the name you want to add, delete, modify, or view for this split or skill. The name must begin with a letter and can be no more than 20 characters long.

**`split/skill number`**

Type the split or skill number that corresponds to the name entered in the `Split/Skill name` field. The split/skill numbers must be between 1 and 60.

**`Description`**

Type any descriptive information, up to 50 characters long, for this split or skill.

---

# Trunk Groups

---

## Purpose

From the Trunk Groups window, you can assign names to your ACD trunk groups. The trunk group names appear on reports, making your reports easier to identify and read.

---

## Things to Know Before You Start

- A trunk group name can be a published phone number (that begins with an alphabetic character), a variation of an associated split or skill name, or any other name that reflects the configuration of your trunk groups, splits or skills, and ACD(s).
  - When naming trunk groups, you may want to be consistent with the names given trunk groups and splits or skills by your switch administrator.
  - If you assign a trunk group name, the name appears on trunk group reports or windows instead of the trunk group number.
  - The “Dictionary-Specific Rules” apply.
  - See AT&T 585-215-521, *CMS Administration* for the action list procedures, common rules for field entry items, and field editing information.
- 

## Prerequisite System Administration

- To list the assigned trunk group names, you need **read** permission for the Dictionary subsystem.
  - To add, delete, or change a trunk group name, you need **write** permission for the Dictionary subsystem and the appropriate split.
- 

## Relationships To Other Subsystems

### Reports

When you assign a trunk group name, that name appears on all Trunk Group windows and reports (real-time and historical). If you make any additions or changes to trunk group names, the changes do not appear on any real-time report that is currently running. You must exit the report and rerun it to see the new trunk group name(s).

### Exceptions

If you assign exceptions to trunk groups, the trunk group names you assign appear in the exceptions text. Also, if you change a trunk group's name, the new name appears in the exception text for all exceptions logged after the change.

### Forecasting

Trunk group names appear on forecasting reports if you have purchased and are using the Forecasting feature.

### Timetable

You can place the Trunk Groups window on a timetable. See AT&T 585-215-521, *CMS Administration* for information about timetables.

---

## Trunk Groups Window

To add, delete, modify, or view trunk group names, you must complete the following window.

04/20/93 08:30 AM      Call Management System      Windows: 1 of 10 ^	
Dictionary: Trunk Groups	
Trunk group name: _____	Add
Trunk group number: _____	Delete
Description: _____	Find one
_____	List all
	Modify
	Next
	Previous

**Figure 7-19: Trunk Groups Window Example**

### Field/Action List Usage

Add

Requires entries in the Trunk group name and Trunk group number fields.

Delete

Requires an entry in the Trunk group name field.

Modify

Requires entries in the Trunk group name and Trunk group number field.

Find one/List all

Displays the trunk group name(s), trunk group number(s), and a description(s) of the trunk group.

## Field Descriptions

### Trunk group name

Type the name you want to add, delete, modify, or view for this trunk group. The name must begin with a letter and can not be more than 20 characters long.

### Trunk group number

Enter the trunk group number that corresponds to the name entered in the Trunk group name field. The number must be between 18 and 255.

### Description

Type any descriptive information, up to 50 characters long, about this trunk group.

---

# Global Search

---

## Purpose

From the Global Search window, you can search for anything in the Dictionary. This might be a login ID or a group of login IDs; split/skill, trunk, or ACD names; database items; calculations; agent names; etc.

---

## Things to Know Before You Start

- You can search on any pattern. For example, ACD.
- You can search on any pattern that includes an asterisk (\*) or question mark (?). For example, Split\*. See “User Basics” in AT&T 585-215-521, *CMS Administration* for the basic search rules.

**Note**

If you enter an asterisk (\*) by itself, you will get **everything** in the Dictionary subsystem. This will take a very long time and use a lot of processor time.

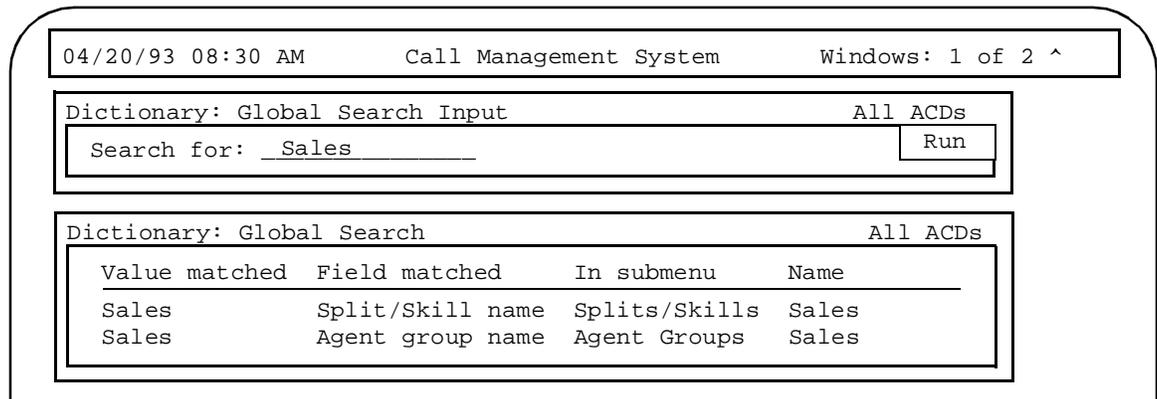
- Searching is case-sensitive (i.e., there is a difference between searching on upper- or lower-case letters).
  - The “Dictionary-Specific Rules” apply.
  - See AT&T 585-215-521, *CMS Administration* for the action list procedures, common rules for field entry items, and field editing information.
- 

## Prerequisite System Administration

- To search for anything in the Dictionary, you must have **read** permission for the Dictionary subsystem.
  - See AT&T 585-215-521, *CMS Administration* for information about assigning read and write permission.
- 

## Global Search Window

To run a global search of the Dictionary, complete the following window.



**Figure 7-20: Global Search Example**

**Field/Action List  
Usage**

Run

Runs the global Dictionary search for the criteria you specify.

**Field Descriptions**

**Search for**

Type the search pattern.

**Value matched** (Display only field)

The matches for your search pattern.

**Field matched** (Display only field)

The name of the field in the Dictionary subsystem that corresponds to the Value matched field.

**In submenu** (Display only field)

The Dictionary submenu where your search pattern was found.

**Name** (Display only field)

The name that corresponds to the Value matched field.

---

# Report

---

## Purpose

From the Report window, you can select any section of the Dictionary listed on the Report window to be printed, filed, or displayed in a set of reports (one report for each section of the Dictionary), or you can produce a report on all the Dictionary sections listed.

---

## Prerequisite System Administration

- You need **read** permission for the Dictionary subsystem to obtain a report.
- 

## Relationships To Other Subsystems

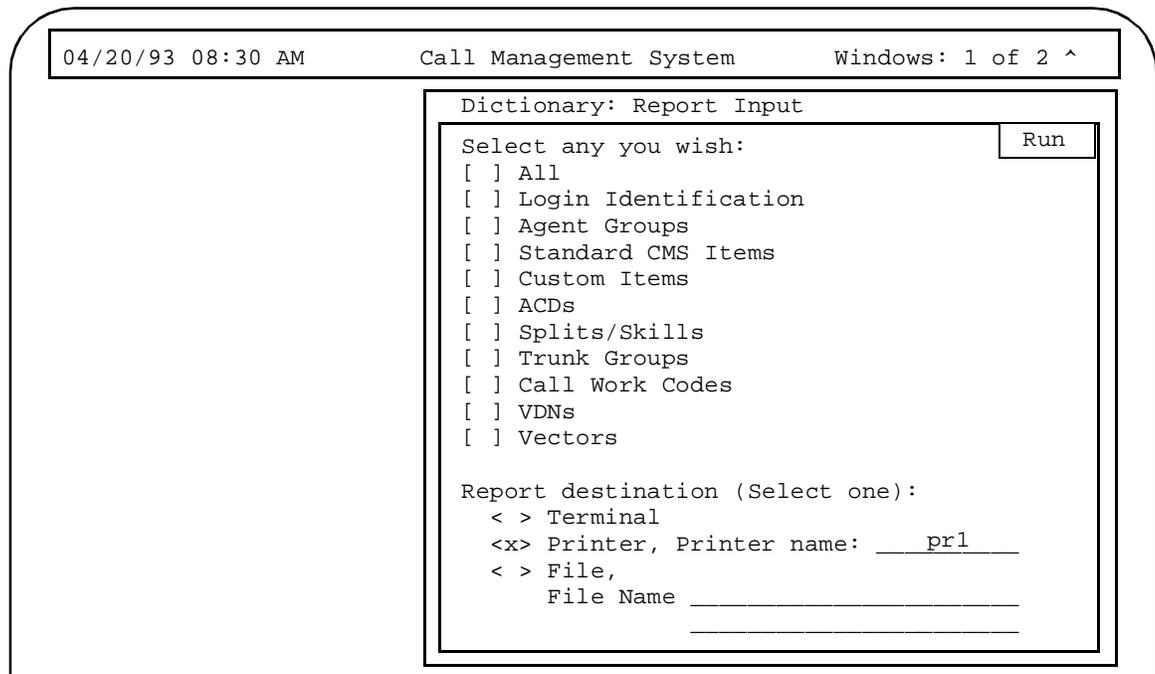
### Timetable

You can place this report on a timetable. See AT&T 585-215-521, *CMS Administration* for information about timetables.

---

## Report Window

To get a report of any section of the Dictionary listed on the Report window (Figure 7-21), you must complete the following window.



**Figure 7-21: Dictionary Report Input Window**

## Field/Action List Usage

Run

Generates the report to the terminal, printer, or file.

## Field Descriptions

**Select any you wish**

Type an **x** next to only the sections of the Dictionary you want a report for. If you want all the Dictionary sections listed, select **All**.

**Report destination (Select one)**

Type an **x** next to **Terminal**, **Printer**, or **File**.

- **Terminal** is the default destination.
- If you select **Printer** and want to use a printer other than your default printer, type the printer name in addition to the **x**.
- If you select **File**, type a file name, and then press **Return**. If the file name already exists, the existing file will be overwritten with the new report data. The file is in your home directory in the UNIX<sup>®</sup> system (`/usr/<your login ID>`) unless you specify a full path name.

**Note**

The **All** selection takes a long time to run. You may want to schedule this selection for off-peak hours.

---

# Call Work Codes

---

## Purpose

From the Call Work Codes window, you can add, delete, modify, or view call work codes and their names. These names then appear on the call work code standard historical reports.

---

## Things to Know Before You Start

- For the call work codes menu item to appear, you must have purchased the Call Work Codes feature on the DEFINITY Generic 2.2 switch or the DEFINITY Generic 3 switches.
- Call work code "0" is reserved for unknown/unadministered work codes so that summary data can be collected. The default name for call work code 0 is *Unadministered codes*. You can modify this name.
- Call work codes with **names** can be no longer than nine digits.

**Note**

Even though you can administer call work codes with digits up to 16 in the ACD Administration subsystem, a call work code associated with a name can not exceed nine digits. See "ACD Administration—Call Work Codes" in AT&T 585-215-521, *CMS Administration* for more information on administering call work codes.

---

## Prerequisite System Administration

- You should administer the call work codes in the ACD Administration subsystem Call Work Codes window before you can assign names to the work codes. See "ACD Administration—Call Work Codes" in AT&T 585-215-521, *CMS Administration* for more information.
- To view call work code names, you must have **read** permission for the Dictionary subsystem.
- To add, delete, or modify a call work code name, you must have **write** permission for the Dictionary subsystem.
- See AT&T 585-215-521, *CMS Administration* for information about assigning read and write permission.

## Relationships To Other Subsystems

### Standard Historical Reports

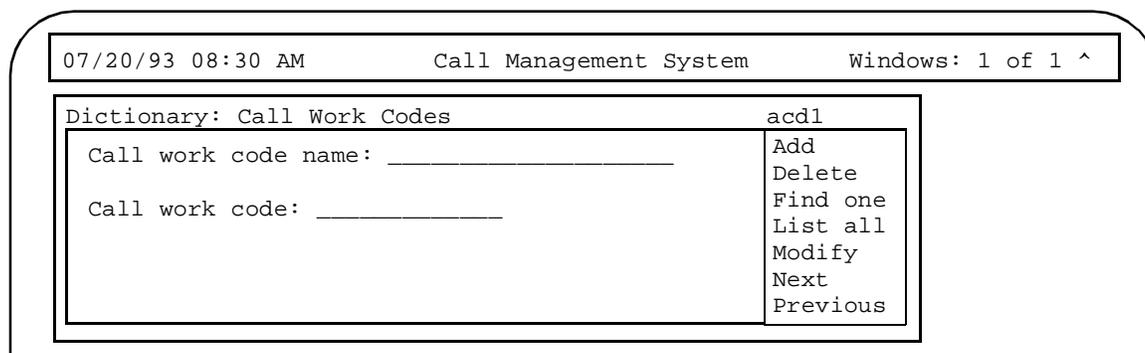
Daily, weekly, and monthly historical reports are available for call work codes. The names you add in this window are displayed on the Call Work Code reports.

### Timetable

You can place the Call Work Codes window on a timetable. See AT&T 585-215-521, *CMS Administration* for information about timetables.

## Call Work Codes Window

You must fill out this window if you want names associated with your call work codes to appear on the standard call work code historical reports.



**Figure 7-22: Call Work Codes Window Example**

### Field/Action List Usage

Add

The Call work code name and Call work code fields must be completed to add a call work code.

Delete

The Call work code name field is the only required field to delete a work code from the database.

Modify

Update the Call work code name and Call work code fields to modify any call work code record.

Find one/List all

Lists one or all of the call work codes stored in the database.

## Field Descriptions

### Call work code name

Type the name you want to add, delete, modify, or view for this call work code. The name must begin with a letter and be no more than 20 characters long.

### Call work code

Type the call work code, a number between 0 and 9999999, that corresponds to the name entered in the Call work code name field.

---

# VDNs

**Note** If you have not purchased the Vectoring feature, this window will **not** be available.

---

## Purpose

You assign names to VDNs so that names, instead of VDN numbers, appear on VDN reports and VDN administration windows. Your VDN names should reflect the configuration of your ACD. A name may indicate a VDN's purpose (sales, customer service, and so on), the destination vector of the VDN (for example, **Forc Busy-Nat.Accts**), the trunk group(s) assigned to the VDN (for example, **wats800-331-1111**), and so on.

Use the VDNs window (Figure 7-23) to assign, delete, modify, and view names of your VDNs.

---

## Things to Know Before You Start

- If you assign names to VDNs on the PBX, you may want to assign the same names in CMS. However, the names can be different since the PBX sends only VDN numbers, not VDN names, to CMS.
  - A `Find one/List all` will list only the VDNs that have already been assigned names. To know what other VDNs are available to you for naming, you should do a `List all` on the ACD Administration: VDN Assignments window. See “VDN Assignments” in AT&T 585-215-521, *CMS Administration* for more information.
  - The “Dictionary-Specific Rules” apply.
  - See AT&T 585-215-521, *CMS Administration* for the action list procedures, common rules for field entry items, and field editing information.
- 

## Prerequisite System Administration

- VDNs must be created on the PBX and assigned to CMS measurement.
- To list names already assigned to VDNs, you need **read** permission for the Dictionary subsystem and for the specific VDNs whose names you want to see.
- To add, delete, or change a VDN name, you need **write** permission for the Dictionary subsystem and the appropriate VDN.

- See AT&T 585-215-521, *CMS Administration* for information about assigning read and write permission.

## Relationships To Other Subsystems

### Reports

When you assign a VDN name, that name appears on all reports (real-time and historical) that include that VDN. If you make any additions or changes to VDN names, the changes do not appear on any real-time report that is currently running. You must exit the report and rerun it to see the new VDN name(s).

### Exceptions

If you assign exceptions to VDNs, the VDN names you assign appear in the exceptions text. Also, if you change a VDN name, the new name appears in the exception text for all exceptions logged after the change.

## VDNs Window

To add, delete, modify, or view VDN names, you must complete the following window.

Dictionary: VDNs		acd1
VDN name:	_____	Add
VDN:	acd1	Delete
Description:	_____	Find one
	_____	List all
		Modify
		Next
		Previous

**Figure 7-23: VDNs Window**

---

## Field/Action List Usage

### Find one/List all

To view the name(s) assigned to VDN(s), enter the characters you want to search on in any field(s) and select `Find one` or `List all`.

### Add

To add a VDN name, you must complete the `VDN name` and `VDN fields` and select `Add`. The `Description` field is optional.

### Modify

To modify a VDN name, you must complete the `VDN name` and `VDN fields` and select `Modify`. To **modify** a VDN description, you must complete either the `VDN name` or `VDN field`, change the description, and select `Modify`.

### Delete

To delete a VDN name, complete the `VDN name` and `VDN field`, and select `Delete`.

## Field Descriptions

### VDN Name

Type the name of a VDN you want to add, change, delete, or find.

### VDN

Type the VDN number (up to five digits) for which you want to add, change, delete, or find a name.

### Description

Type a description of the VDN (for example, `customer service - local retail 993-0000`).

---

# Vectors

**Note** If you have not purchased the Vectoring feature, this window will **not** be available.

---

## Purpose

You assign names to vectors so that the names, instead of vector numbers, appear on vector reports and administration windows. Your vector names should reflect the configuration of your ACD. A name may indicate a vector's purpose (**sales**, **customer service**, etc.), the VDN(s) assigned to the vector (for example, **2001,3001,4001**), or the split(s) or skill(s) the vector sends calls to (for example, **sales1, sales2, audix**).

Use the Vectors window (Figure 7-24) to assign, delete, modify, or view names of your vectors.

---

## Things to Know Before You Start

- You can assign a name to a vector even if the steps in the vector have not actually been defined.
  - A `Find one/List all` will list only vectors that have already been assigned names. To get a list of other vectors available to you for naming, you should do a `List all` on the Vector Configuration Report window. See “Vector Configuration” in AT&T 585-215-521, *CMS Administration* for more information.
  - The “Dictionary-Specific Rules” apply.
  - See AT&T 585-215-521, *CMS Administration* for the action list procedures, common rules for field entry items, and field editing information.
- 

## Prerequisite System Administration

- To list assigned vector names, you need **read** permission for the Dictionary subsystem and for the specific vectors whose names you want to see.
- To add, delete, or change a vector name, you need **write** permission for the Dictionary subsystem and the appropriate vector.
- See AT&T 585-215-521, *CMS Administration* for information about assigning read and write permission.

## Relationships To Other Subsystems

### Reports

When you assign a vector name, that name appears on all reports (real-time and historical) that include that vector. If you make any additions or changes to vector names, the changes do not appear on any real-time report that is currently running. You must exit the report and rerun it to see the new vector name(s).

### Exceptions

The vector names you assign appear in the text for vector exceptions. Also, if you change a vector name, the new name appears in the exception text only for exceptions logged after the change.

## Vectors Window

To add, delete, modify, or view vector names, you must complete the following window.

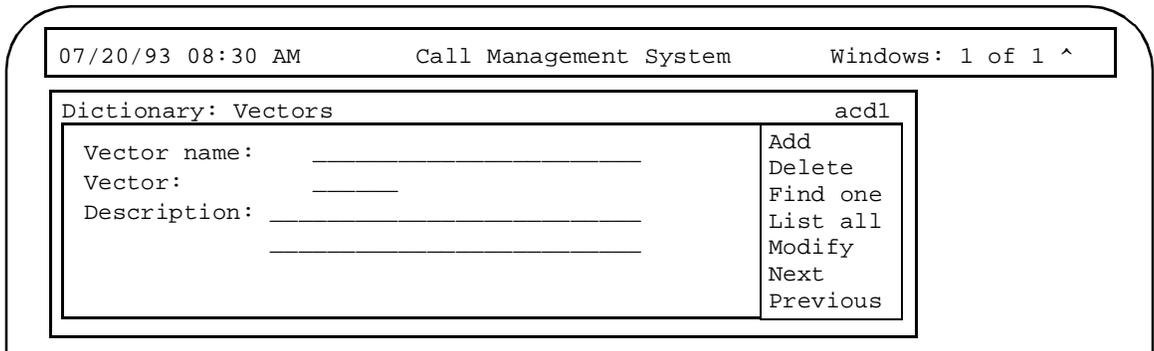


Figure 7-24: Vectors Window

**Field/Action List Usage**

Find one/List all

To view the name(s) assigned to vector(s), enter the characters you want to search on in any field(s) and select `Find one` or `List all`.

Add

To add a vector name, you must complete the `Vector name` and `Vector number` fields and select `Add`. The `Description` field is optional.

Modify

To modify a vector name, you must complete the `Vector name` and `Vector number` fields and select `Modify`. To **modify** a vector description, you must complete either the `Vector name` or `Vector number` field, change the description, and select `Modify`.

Delete

To delete a vector name, complete the `Vector name` and `Vector number` field and select `Delete`.

**Field Descriptions**

**Vector Name**

Type the name of a vector you want to add, change, delete, or find.

**Vector**

Type the vector number for which you want to add, change, delete, or find a name.

**Description**

Type a description of the vector (for example, `customer service - local retail`).

## General Information

This appendix describes the CMS database tables, the items in the database tables, and the standard dictionary calculations that use the database items. Database items are grouped by ACD element (split/skill, agent, trunk group, trunk, vector, VDN, etc.) and are listed alphabetically. Many database items appear in more than one database table. Database items that appear in the description of other database items are presented in bold-face type. The **indexes** in each table are marked. Indexes add structure to table rows so that CMS can retrieve data faster. The row search criteria you define for custom reports should be based on indexes whenever possible. For historical custom reports, always include a “where” clause based on the ROW\_DATE database item.

Each real-time database item contains one of the following types of data:

- |                                |  |
|--------------------------------|--|
| <b>C = Cumulative data</b>     | This type of data accumulates throughout the collection interval. Most real-time database items contain cumulative data.   |
| <b>A = Administrative data</b> | This type of data is administered on the switch or on CMS. For example, the database item <b>INTRVL</b> in the split/skill real-time table contains the number of minutes in the intrahour interval (15, 30, 60) currently assigned to the specified split/skill on CMS. |
| <b>S = Status data</b>         | This type of data gives the current status, that is a snapshot of a particular ACD element. For example, the database item <b>INQUEUE</b> in the split/skill real-time table contains the number of split/skill calls currently waiting in queue.                        |

The letter C, A, or S appears in the Type column for each real-time database item.

**Cumulative** and **Administrative** data items are in the historical database tables along with the real-time database tables. **Status** items appear in the real-time database tables only.

In addition to the types of data described above, items in the CMS database can be either call-based or interval-based. Most CMS database items are call-based. **Call-based data** is committed to the database after a call completes. Therefore, if a call starts and ends in different collection intervals, all of the data is recorded in the interval in which the call and any after call work are completed.

**Interval-based data** represents the amount of time during a collection interval spent doing a particular activity. Interval-based items are updated throughout the collection interval and timing is restarted at the end of the interval. Most interval-based items start with **I\_** or **TI\_**. The database items **ALLINUSETIME** (trunk-group tables) and **MBUSYTIME** (trunk and trunk-group tables) are also interval-based.

Interval-based items should only be used to calculate percentages such as percentage of time staffed or in AUX work. Interval-based items should not be used, for example, to calculate average talk time; use call-based items for this type of calculation. Furthermore, because call-based and interval-based items may not track the same events, a calculation should use only one type of item and comparisons of call-based calculations and interval-based calculations may not be relevant or meaningful. For example, the call-based ACD time and interval-based ACD time for an agent will not be equal if the agent handled one or more ACD calls that crossed over interval boundaries.

**Note** Report data may not add up if the report has a combination of call-based and interval-based items.

---

## Interactions With Switch Features and Database Rules

The following features have an impact on CMS database items.

### Adjunct-Placed and Adjunct-RoutedCalls

For Generic 2.2 with the ASAI Gateway Interface feature and Generic 3 with the ASAI feature, CMS tracks outbound calls placed by an adjunct processor or host computer on behalf of an agent and adjunct-routed calls (Generic 3 only). Database items that start with **O\_** track outbound split/skill calls and database items that contain **ADJ** track adjunct-routed calls.

Adjunct-placed outbound split/skill calls are also included as part of ACD database items such as **ACDCALLS**, **ACDTIME**, and **ACWTIME**. Inbound split/skill calls can be calculated as **ACDCALLS - O\_ACDCALLS**.

## Converse Vector Command (G3V2)

The “converse” command integrates Voice Response Units (VRUs) and the Call Vectoring feature. The “converse” command allows voice-response scripts to be execute while, for example, a call waits in queue. This command also allows data to be passed between the switch and a VRU or from the VRU through the switch to an ASAI adjunct processor.

## Look-Ahead Interflow Calls

For Generic 2.2 and Generic 3, CMS tracks look-ahead interflow calls attempted and completed separately (database items that start with **LOOK**) and as part of interflow calls. For 85 R2V4 and Generic 2.1, CMS tracks look-ahead interflow calls as part of interflow calls only. The “LOOK” database items will not be used.

## Personal Call Tracking

The Personal Call Tracking (PCT) feature on the Generic 3 and Generic 2.2 switches sends CMS information to track all personal calls an agent makes and receives. This includes calls made or received when the agent has a call on **hold**.

With the Personal Call Tracking feature, CMS tracks calls an agent makes or receives with a call on hold. Calls are tracked as AUXIN or AUXOUT calls. Time is tracked as OTHER or AUX. If you upgraded from an older switch release to a Generic 3 or Generic 2.2 switch, you will see the following data tracking changes:

- An increase in the number of extension in/out calls made or received by agents, if agents make or receive calls while they have a call on hold.
- Agent time on AUXIN/AUXOUT calls will increase.
- If agents do a lot of conferences and transfers, the average talk time for extension out calls will probably drop, since time spent in AUX for conferences and transfers is very short (a matter of seconds).
- The average talk time on ACD calls will drop if agents put calls on hold, since the time on hold is no longer included as ACD talk time.

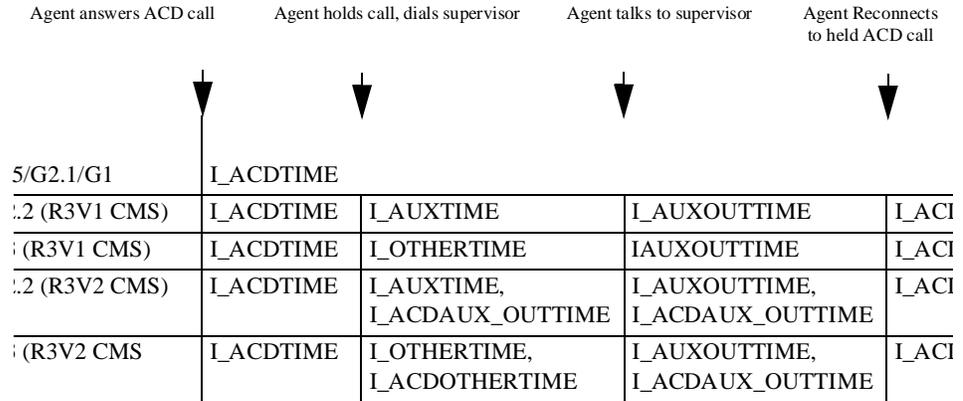
## Hold Calls/Agent State With Personal Call Tracking

Personal Call Tracking offers the following data tracking capabilities:

- Data is available for calls on hold, time for calls on hold, and calls abandoned from hold. Without personal call tracking, time for calls on hold was counted as talk time.
- CMS split and agent data reflect calls made while another call is on hold.
- When an agent places a call on hold, the agent returns to his or her previous state before the call unless the previous state was AVAIL. If the agent was in the AVAIL state, the agent is placed in the

OTHER state until the agent dials a valid number (if the number dialed is invalid, the agent remains in OTHER), reconnects with the held call, or the held call abandons. When the agent reconnects to the held call, the original agent state for the call displays.

- The following example shows how R3V2 CMS tracks hold calls with the new database items.



**Figure A-1: Hold Tracking for Supervisor Assist Example**

- Agents do not have a **hold** state. Hold time is associated with a call placed on hold. Agent states reflect the current activity of the agent.
- Hold time (HOLDTIME) is the time the call spent on hold. HOLDCALLS is the number of calls that were placed on hold at least once, and HOLDABNCALLS is the number of calls that abandoned while on hold.
- I\_OTHERTIME is the time during the collection interval that the agent was doing other work.
- For Generic 3, this includes time while in the Auto-In or Manual-In mode during which the agent put a call on hold and performed no further action, the agent placed a call or activated a feature, or a personal call rang with no further activity.
- When an agent dials a valid extension, the agent's state changes to AUX OUT (if the agent was in AUX or OTHER) or to ACW OUT (if the agent was in ACW).

**Abandoned Calls**

VDN calls that route to extensions and are then abandoned are counted as abandoned calls for the VDN.

**Transferred and Conferenced Calls**

- Transferred and conferenced calls are tracked as held calls while the call(s) wait to be transferred or added to a conference.
- When an agent ends a conference call, the agent returns to the call state prior to setting up the conference.
- If an agent is talking, then places the ACD call on hold to transfer that call, and then completes the transfer, the agent then goes to the AVAIL state (Auto-In) or to ACW (Manual-In) following the transfer.
- Transferred or conferenced unmeasured split, trunk group, or VDN calls are now tracked. Prior to Personal Call Tracking, these calls were not tracked.

**Audio Difficulty**

You now get the trunk associated with audio difficulty for personal calls if the trunk group is measured. Prior to Personal Call Tracking, audio difficulty was restricted to ACD calls.

**Direct Agent Calling (G3)**

Direct agent calls are tracked separately from other ACD calls in the CMS database tables. Since direct agent calls are not split/skill calls but are calls to a specific agent, most of the direct agent data is collected in the agent tables in items starting with "DA\_" or "I\_DA". Reports can be customized to include direct agent data. In the real-time split/skill table, the number of agents on direct agent calls and the number of agents in ACW associated with direct agent calls are collected, but they are subsets of the number of agents in the **OTHER** agent state, that is, doing work but not for the split/skill. Only the **OTHER** value will appear on standard real-time reports. The number of direct agent calls queued and ringing appears on the Queue/Agent Summary report.

**Multiple Call Handling (G2/ System 85 R2V4 only)**

The Multiple Call Handling feature allows an ACD agent to put a call on hold and to push the Auto-In or Manual-In key to become available to take another ACD call. CMS tracks the hold state as a call state, not an agent state. This means that hold time is counted for each call. For example, an agent who places two calls on hold for 5 minutes to answer a third will accrue 10 minutes' time on hold for the two calls in the space of only 5 minutes on the clock.

For Generic 2.1 and System 85 R2V4, an agent with ACD calls on hold continues to accrue interval-based talk time. The call-based ACD talk time is stopped while the calls are on hold, until the agent reconnects to one of them.

**Hold Tracking (G3, G2, System 85 R2V4)**

CMS will track and report hold state for calls put on hold for Generic 3, Generic 2, and System 85 R2V4 switches. This means that CMS will be notified when an agent puts a call on hold. For Generic 3 and Generic

2.2, CMS tracks **all** calls put on hold. For Generic 2.1 and System 85 R2V4, CMS tracks **split** ACD calls put on hold.

### **Ringling (G3, G2, System 85 R2V4)**

CMS displays the number of agents with split/skill ACD calls ringing at their voice terminals. This information is only meaningful if agents' voice terminals are programmed to ring rather than receive zip tone. The switch sends a message to CMS when a call is directed to an agent and alerting begins. Currently, this is only supported on System 85 R2V4, Generic 2, and Generic 3. If your switch does not have this change, the ring state columns in standard reports will display blanks.

### **Transfer Tracking**

For Generic 3 and Generic 2.2, CMS tracks all transferred calls made by measured agents. For Generic 2.1 and System 85 R2V4, transferred calls to a VDN are tracked in the VDN tables. The agent and split/skill reports display these transfers.

Transfers into a split/skill, agent, or VDN are not tracked explicitly (i.e., the party initiating the transfer is credited with a transfer, not the party receiving the transfer).

### **Conference Tracking (G2.2 and G3)**

CMS tracks conferenced calls for Generic 2.2 and Generic 3. Agents that transfer a call by conferencing and then dropping off will be credited with a conference and not a transfer.

### **Call Pickup**

CMS tracks ACD calls that are answered by an agent using the Call Pickup feature as AUXIN calls.

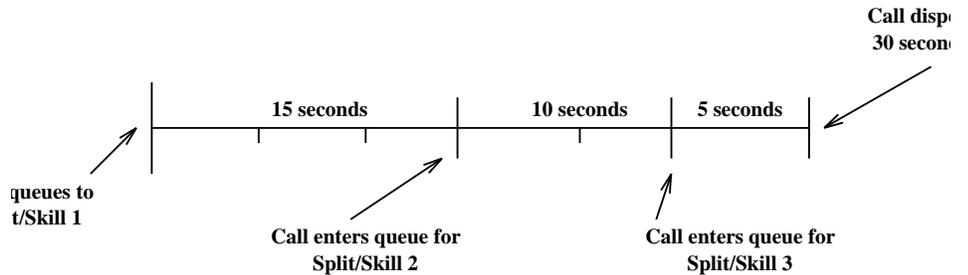
### **Multiple-Split/Skill Queuing (G3)**

On a Generic 3, calls can be queued to as many as three splits/skills simultaneously. For the first split/skill to which a call is queued (primary split/skill), CMS pegs an answer, outflow (leaves vector processing or is answered by an agent in another split/skill), or abandon. For the second or third split/skill to which a call is queued, CMS pegs an answer and an inflow if the call is answered in that split/skill. If the call is answered in another split, the call outflows, or the caller abandons, CMS pegs a dequeued.

**Note** If a call rings in a second or third split and then abandons, an inflow and abandon will be counted for that split; an outflow or dequeue will be counted for the other splits.

In the following Multiple-Split/Skill Queuing example, you see the call queue to Split/Skill 1 first, then queue to Split/Skill 2 after 15 seconds, then after another 10 seconds, the call enters Split/Skill 3's queue. The

call is now queued to Splits/Skills 1, 2, and 3 at the same time. See the example for disposition of the call for all three splits if the call abandoned, was answered, or routed to a VDN.



Disposition	Split/Skill 1	Split/Skill 2	Split/Skill 3
Abandoned in queue	ABANCALLS ABNTIME = 30	DEQUEUECALLS DEQUETIME = 15	DEQUEUECALLS DEQUETIME = 15
Answered	OUTFLOWCALLS OUTFLOWTIME = 30	ACDCALLS ANSTIME = 15 INFLOWCALLS	DEQUEUECALLS DEQUETIME = 15
VDN	OUTFLOWCALLS OUTFLOWTIME = 30	DEQUEUECALLS DEQUETIME = 15	DEQUEUECALLS DEQUETIME = 15
Transfer from Skill 2	OUTFLOWCALLS OUTFLOWTIME = 30	ABNCALLS ABNTIME=15	DEQUEUECALLS DEQUETIME = 15

Figure A-2: Multiple-Split/Skill Queuing Example

### Agents in Multiple Splits/Skills

CMS requires agents to log into multiple splits/skills using the same login ID for all splits/skills. This allows CMS to track the agent as a single person and to coordinate the data for that agent.

Real-time reports assume that agents can only be doing one thing at a time. Agents can be in the following states: AVAIL, ACD, ACW, AUX, DACD, DACW, RING, UNKNOWN, OTHER, or UNSTAFFED. When an agent logs into multiple splits/skills, the split/skill number(s) will be shown on the report(s) for the states (ACD, DACD, ACW, AVAIL, and RING) associated with the call. For example, if an agent logged into Split/Skill 1 and Split/Skill 2 and answered an ACD call for Split/Skill 2, the split/skill number shown in the standard real-time report(s) will be "2".

For splits, as long as the agent is not on a call or the agent is in AUX and is available in at least some splits, real-time reports will show all the splits in which the agent is available. For skills, the agent cannot be available in some skills and in AUX in others. The Skill Status report shows all the agent's login skills. If an ACD call is ringing the agent's voice terminal, the

real-time report will show the RING state. If a personal call is ringing at the agent's voice terminal, the real-time report will show the OTHER state. No split/skill will be shown for the AUX and UNKNOWN states because these states are not split/skill related. The agent will be shown as being in AUX **only** if the agent is in AUX in **all** splits/skills.

With real-time split/skill reports, if an agent is available in Split 1 and in AUX in Split 2 and you request the Split/Skill report which displays both splits, the report will show the agent as AVAIL in Split 1 and as OTHER in Split 2.

## Agent State Tracking at Login

CMS does not know what state agents are in immediately after they have logged in (or right after the link to the switch has come up) until it is notified by the switch of the agent's current state. The time the agent spent in this state is tracked as I\_OTHERTIME and TI\_OTHERTIME and the agent's state is displayed as **OTHER**.

For System 85 R2V3 and Generic 2 switches, the time between logging in and moving to the AUX state depends on the time it takes for the agent logging in to release the call or go on-hook, completing the login sequence.

For Generic 1/Generic 3 switches, the time between logging in and moving to the AUX state depends on the time it takes for the agent logging in to release the call or go on-hook or for the switch to time the call out (about 5 to 10 seconds).

## Go To Vector

When a "go to vector" command is executed, an outflow and a "goto call" are counted for the first vector and an inflow is counted for the second vector. The timing and statistics associated with the first vector for that call stop and are started for the second vector. The call remains in the original VDN, however, and tracking in that VDN continues.

## Outbound Call Management (OCM)

Outbound call management calls to splits/skills are included as a subset of the ACD call database items (talk time, ringing, ACW, etc.). OCM calls also have their own database items which start with "O\_" in the agent, split/skill, trunk and trunk group tables. Inbound split/skill calls can be calculated as ACDCALLS - O\_ACDCALLS.

## Redirection on No Answer (G3 V2)

When a ringing call times out and is requeued to the same split/skill by the Redirection on No Answer feature (Generic 3 Version 2 only), an outflow and an inflow are counted for the split/skill. Thus, the redirected call appears as two offered calls to the split/skill. The database item NOANSREDIR is also incremented. The unique calls offered to the

split/skill can then be calculated by subtracting the value of NOANSREDIR from CALLSOFFERED.

**Note** This assumes that the split/skill is set up so that split/skill calls will not cover back to the same split/skill except through the Redirection on No Answer feature. If they can cover back to the same split/skill, each call that does this will be counted as an outflow and inflow to that same split/skill. In this case, NOANSREDIR is **not** incremented.

### Tracking of Times/Duration

In the trunk, trunk group, and VDN tables, the “TIME” items are typically based on the IDLE message at the end of the call, unless the items are queue time or ring time or other similar items.

In the split/skill, and vector tables, the “TIME” items are typically based on when the call leaves the split/skill/vector and the disposition is known. For example, when the DFWD is received and the call outflows or when the caller starts hearing the forced busy.

### Trunk No Answer Timeout (G3V2)

This timer starts when the call first seizes the trunk and is stopped when answer supervision is sent for the call. If it times out, the call is dropped by the switch and the CMS pegs the call as an abandoned call. (This time is for switches in countries that lack disconnect supervision for trunks. The assumption is that the caller abandoned long ago.)

### Vector Disconnect Timer (G3V2)

The Vector Disconnect Timer is started when a call begins vector processing and stops when the call is routed successfully. This means that the call rings at a destination or the trunk is connected to a destination. In the case of adjunct routing, the timer is stopped at the point at which the call is routed successfully. If the timer times out, the call is dropped by the switch and the CMS records a forced disconnect for the call.

### Wait Answer Supervision Timer (WAST)

This timer is started when a call begins ringing at an agent or station. It is stopped if the call is answered or connected or redirected. Once a redirected call begins ringing, the timer will be restarted. In the case of redirection on no answer, if the call cannot be redirected, the WAST is restarted. If the WAST times out, the call is dropped by the switch and the CMS records an abandon (from ringing) for the call.

## Terminology

The following terms are used in the database item descriptions.

**Abandoned Call** A call is considered an abandoned call if the caller hangs up before the call is answered or connected. Calls may also be considered abandoned if certain timers in the switch time out [see explanations of the Wait Answer Supervision Timer (WAST) and the trunk No Answer Timeout (NATO) above]. These timers are used primarily in locations where the central office trunks lack disconnect supervision.

Calls may abandon during many phases of processing, including during vector processing, after being queued to a split/skill, while ringing at an agent or station. The calls that are counted as abandons differ depending on the table. The agent table counts as abandons those calls that abandoned while ringing at the agent. The split/skill table counts as abandons those calls that abandoned while queued to the split/skill or while ringing at an agent in the split/skill. The VDN table counts as abandons those calls that abandoned while in the VDN, including calls in vector processing not yet queued to a split/skill (for example, calls that abandoned while listening to an announcement), calls queued to one or more splits/skills, calls ringing at agents or stations. The definitions in each table state which abandons are counted in that table.

**ACD Call** An ACD call is a call that queued to a split/skill and was answered by an agent in that split/skill or a call that queued as a direct agent call and was answered by the agent to whom it was queued.

**Agent** Agent refers to the login id that staffed the extension. This term is often extended to mean the person who used the id to staff the extension. In all cases, the term agent implies measurement by CMS.

<b>Agent position (no EAS)</b>	In traditional ACD, that is, without the Expert Agent Selection (EAS) feature, agent position refers to the combination of agent login ID and split the agent logged into. Agents logged into multiple splits have multiple positions associated with them. Call data are collected for each agent/split combination separately, so that it is possible to report on the calls handled and time spent by agents in each of the splits they were in. To report on the total work performed by the agent, call data must be summed for the agent over all the splits in which he or she worked.
<b>Agent position (with EAS)</b>	When Expert Agent Selection (EAS) is enabled, there is a single agent position associated with each logged-in agent, regardless of the number of skills assigned to the agent. Data are still collected for the agent by skill, so the total work for the agent must be summed over all skills in which the agent worked.
<b>Answered Call</b>	A call is considered to be answered when the agent's state changes to ACD or DACD. The term answered is used only for split/skill and direct agent ACD calls. (See <b>Connected</b> for non-ACD calls.) For manual answer agents, the call is answered when the agent selects the ringing line appearance. For automatic answer agents, the call is answered directly after the zip tone is applied.

**After Call Work** There are two types of after call work: call-related after call work and after call work not associated with a call. An agent enters a call-related after call work state by completing a manual-in call or, on Generic 1/Generic 3 switches, by pressing the after call work key during an automatic-in call, then completing the call. CMS tracks call-related after call work in the call-based ACWTIME item and in the interval-based I\_ACWTIME item.

An agent on a Generic 1 or Generic 3 switch can enter the after call work state without having an associated call by pressing the after call work key while available or in the AUX mode. CMS will track this after call work time in the I\_ACWTIME item, but not in the ACWTIME item.

For Generic 1/Generic 3 without the EAS feature, the after call work time not associated with an ACD call will be tracked for the split whose after call work key the agent pressed. For Generic 3 with EAS, the after call work time not associated with an ACD call will be tracked for the first skill administered for and successfully logged into by the agent.

**Connected Call** A non-ACD call is considered to be connected to an extension (not a VDN or direct agent) when the call rings at the station and the caller does not abandon. The System 85 R2V4 and Generic 2.1 switch releases do not notify CMS when non-ACD calls abandon, so all non-ACD calls that route to an extension are tracked as connected calls for these switch releases. For Generic 1, Generic 3 and Generic 2.2 switches, only calls that routed to an extension and did not abandon are tracked as connected calls.

**Default Skill (Generic 2.2)** On the Generic 2.2 with EAS, every skill that ends with a "0" is called a "default skill", since every agent in the skill group is logged into this skill by default. The default skill is the first skill for each skill group.

<b>Direct Agent ACD Call (Generic 3)</b>	A direct agent ACD call is a call that queues for a specific agent. Direct agent ACD calls can be generated by an ASAI adjunct (Generic 3) or by calling an agent's login id (G3 with EAS), given the proper class of restriction for the caller and for the receiving agent. Direct agent ACD calls are tracked as ACD calls along with split/skill ACD calls in the trunk, trunk group, VDN and vector tables. Direct agent ACD calls are tracked separately from split/skill ACD calls in the agent tables. Direct agent ACD calls are not tracked in the split/skill tables (since they are not split/skill ACD calls).
<b>Extension Call</b>	Extension calls are any calls originated by agents and non-ACD calls received by agents. For the Generic 2.2 and Generic 3 switch releases, these include calls an agent makes to set up a conference or a transfer.
<b>Hold</b>	A call is considered to be on hold whenever an agent places it on hold by using the Hold key or the hard hold feature access code, by using the Transfer or Conference key or by flashing the switch hook. CMS only tracks calls on hold for the switch releases that notify CMS when calls are placed on hold. Releases that notify CMS are System 85 R2V4/Generic 2.1 for split/skill ACD calls placed on hold via the Hold key or feature access code; Generic 2.2 and Generic 3 for all calls.
<b>Nonprimary Split/Skill</b>	When a call is queued to multiple splits/skills (Generic 3 with vectoring, Generic 2.2 with EAS), the second and third splits/skills to which the call queues in a VDN are called "non-primary splits/skills". They are also referred to as secondary and tertiary splits/skills, respectively.
<b>Nonzero (0) Skill (Generic 2.2)</b>	On Generic 2.2 with EAS, any skill that does not end in "0" is called a nonzero skill.

<b>Primary Split/Skill</b>	When a call is queued to multiple splits/skills (Generic 3 with vectoring, Generic 2.2 with EAS), the first split/skill the call queues to in a VDN is called the primary split/skill. If the call leaves vector processing and queues to another split/skill (for example, routes to a split/skill extension, routes to another VDN), then that split/skill becomes the primary split/skill. If the call leaves vector processing and does not queue to another split/skill (for example, routes to an extension), then there is no new primary split/skill.
<b>Queued</b>	CMS is notified that an ACD call queued to a split/skill even if the call was immediately delivered to an available agent and spent no time waiting in queue. In the case of the Generic 1/Generic 3 switches, even though the call may never have physically occupied a queue slot on the switch (because it could be delivered immediately to an agent), CMS is still notified that the call queued to the split/skill.
<b>Secondary Split/Skill</b>	When a call is queued to multiple splits/skills (Generic 3 with vectoring, Generic 2.2 with EAS), the second split/skill the call queues to in a VDN is called the secondary split/skill.
<b>Split/Skill ACD Call</b>	A split/skill ACD call is a call that queued to a split/skill and was answered by an agent in that split/skill.
<b>Skill Group (Generic 2.2)</b>	On the Generic 2.2 with EAS, each consecutive ten skills ending with digits 0 through 9 constitute a skill tens group. For example, skills 10-19 form a skill tens group, as do skills 340-349.
<b>Station</b>	Station refers to an unmeasured extension, that is, an extension that is not currently staffed by an agent or that is a member of an unmeasured split/skill or hunt group.
<b>Tertiary Split/Skill</b>	When a call is queued to multiple splits/skills (Generic 3 with vectoring, Generic 2.2 with EAS), the third split/skill the call queues to in a VDN is called the tertiary split/skill.
<b>Zero (0) Skill (Generic 2.2)</b>	On the Generic 2.2 with EAS, every skill that ends with a "0" is called a zero skill. The zero skill is the first skill for each skill group.

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## Database Table Names

To select data for custom reports, you must use the names listed in Table A-1 and Table A-2. The database items are described in later sections of this appendix.

**Table A-1: Real-Time Table Names**

<b>Name</b>	<b>Data Stored</b>
csplit	Split/Skill data for the current interval.
psplit	Split/Skill data for the previous interval.
cagent	Agent data fro the current interval.
pagent	Agent data for the previous interval.
ctkgrp	Trunk group data for the current interval.
ptkgrp	Trunk group data for the previous interval.
ctrunk	Trunk data for the current interval.
ptrunk	Trunk data for the previous interval.
cvector	Vector data for the current interval.
pvector	Vector data for the previous interval.
cvdn	VDN data for the current interval.
pvdn	VDN data for the previous interval.
ccwc	Call Work Code (CWC) data for the current interval.
pcwc	CWC data for the previous interval.

**Table A-2: Historical Table Names**

<b>Name</b>	<b>Data Stored</b>
hsplit	Split/Skill data for each intrahour interval.
dsplit	Split/Skill data summarized by day.
wsplit	Split/Skill data summarized by week.
msplit	Split/Skill data summarized by month.
hagent	Agent data for each intrahour interval.
dagent	Agent data summarized by day.
wagent	Agent data summarized by week.
magent	Agent data summarized by month
htkgrp	Trunk group data for each intrahour interval.
dtkgrp	Trunk group data summarized by day.
wtkgrp	Trunk group data summarized by week.
mtkgrp	Trunk group data summarized by month.
htrunk	Trunk data for intrahour interval.
dtrunk	Trunk data summarized by day.
wtrunk	Trunk data summarized by week.
mtrunk	Trunk data summarized by month.
hvector	Vector data for each intrahour interval.
dvector	Vector data summarized by day.
wvector	Vector data summarized by week.
mvector	Vector data summarized by month.
hvdn	VDN data for each intrahour interval.
dvdn	VDN data summarized by day.
wvdn	VDN data summarized by week.
mvdn	VDN data summarized by month.
hcwc	CWC data for each intrahour interval.
dcwc	CWC data summarized by day.
wcwc	CWC data summarized by week.
mcwc	CWC data summarized by month.

**Table A-2: Historical Table Names (Contd)**

<b>Name</b>	<b>Data Stored</b>
call_rec	Call record data.
agex	Agent exceptions.
spex	Split exceptions
tgex	Trunk group exceptions.
vecex	Vector exceptions.
vdnex	VDN exceptions.
linkex	Link down exceptions.
mctex	Malicious call trace exceptions.
f_cday	Forecast current day configuration data by split/skill.
f_cdayrep	Current day forecast data by split/skill.

## Split/Skill Database Items

The Split/Skill Database Item descriptions apply to real-time and historical items. The **Type** column refers to **Cumulative**, **Administrative**, or **Status** data. See the descriptions at the beginning of this Appendix.

### Real-Time

For real-time, split/skill database items apply to the Current Interval Split/Skill (`csplit`) and Previous Interval Split/Skill (`psplit`) tables. The indexes for real-time are **ACD** and **SPLIT**.

Cumulative (C) and Administrative (A) items typically apply to both the current and previous interval real-time tables. Status items (S) only apply to the current interval real-time tables.

### Historical

Split/Skill historical database items apply to the Intrahour Split/Skill (`hsplit`), Daily Split/Skill (`dsplit`), Weekly Split/Skill (`wsplit`), and Monthly Split/Skill (`msplit`) tables, except as noted. The indexes are **SPLIT** and **ROW\_DATE**.

**Table A-3: Split/Skill Database Items**

Database Item	Description	Type
<b>ABNCALLS</b>	Number of <b>CALLSOFFERED</b> that were abandoned while in queue or ringing at an agent position. For System 85 R2V4, Generic 2.1, and Generic 3 switches with vectoring, this also includes calls that were queued to the split/skill and abandoned while listening to a forced disconnect announcement. When a call abandons while queued to multiple splits/skills, only the primary split/skill pegs <b>ABNCALLS</b> . <b>ABNCALLS</b> includes <b>O_ABNCALLS</b> .	C
<b>ABNCALLS1-10</b>	Number of <b>ABNCALLS</b> that were abandoned during the collection interval in each of the service level increments <b>PERIOD1</b> through <b>PERIOD9</b> (as defined on the ACD Administration: Call Profile window). <b>ABNCALLS10</b> counts calls that abandoned after <b>PERIOD9</b> .	C
<b>ABNRINGCALLS</b>	Number of <b>ABNCALLS</b> that abandoned while ringing at an agent position. This database item is only available with Generic 2 and Generic 3.	C
<b>ABNTIME</b>	Time callers waited in queue or ringing before abandoning	C

Table A-3: Split/Skill Database Items (Contd)

Database Item	Description	Type
<b>ACCEPTABLE</b>	Number of <b>ACDCALLS</b> answered by an agent within the acceptable service level (as defined on the ACD Administration: Call Profile window).	C
<b>ACD (index)</b>	The ACD number for which data was collected.	A
<b>ACDAUXOUTCALLS</b>	Number of <b>AUXOUTCALLS</b> agents in the split/skill made with at least one split/skill ACD call on hold. For agents in multiple splits (Generic 3), the call is counted for the split/skill of the last ACD call the agent put on hold. <b>ACDAUXOUTCALLS</b> includes calls made to transfer or conference the ACD call. The database item is available only with Generic 2.2 and Generic 3.	C
<b>ACDCALLS</b>	Number of <b>CALLSOFFERED</b> calls that were answered by an agent in the split/skill.	C
<b>ACDCALLS1-10</b>	Number of <b>ACDCALLS</b> during the collection interval that were answered in each of the service level increments <b>PERIOD1</b> through <b>PERIOD9</b> (as defined on the ACD Administration: Call Profile window). <b>ACDCALLS10</b> is the number of calls answered after the last increment <b>PERIOD9</b> .	C
<b>ACDOTHER (real-time)</b>	Number of agents in <b>OTHER</b> with one or more ACD calls on hold. <b>ACDOTHER</b> is a subset of <b>OTHER</b> .	C
<b>ACDTIME</b>	Talk time of all <b>ACDCALLS</b> (does not include <b>HOLDTIME</b> , but it does include <b>O_ACDTIME</b> ).	C
<b>ACWINCALLS</b>	Number of inbound extension calls received by agents while in ACW (after call work) for split/skill ACD calls or in ACW not associated with a call.	C
<b>ACWINTIME</b>	Talk time of all <b>ACWINCALLS</b> (does not include hold time on Generic 2.2 and Generic 3 switches).	C
<b>ACWOUTADJCALLS</b>	Number of <b>ACWOUTCALLS</b> an adjunct processor or host computer placed on behalf of an agent (keyboard dialed). If such calls are placed to off-switch destinations, then they are also counted as <b>ACWOUTOFFCALLS</b> . This database item is only available with Generic 2.2 switches that have the ASAI Gateway Interface feature and Generic 3 switches that have the ASAI feature.	C
<b>ACWOUTCALLS</b>	Number of outbound extension calls made by agents while in ACW for split/skill ACD calls or in <b>ACW</b> not associated with a call.	C
<b>ACWOUTOFFCALLS</b>	Number of <b>ACWOUTCALLS</b> that were made to a destination outside the switch. If such calls are placed by an adjunct on behalf of an agent then they are also counted as <b>ACWOUTADJCALLS</b> . This database item is only available with Generic 2.2 and Generic 3 switches.	C

Table A-3: Split/Skill Database Items (Contd)

Database Item	Description	Type
<b>ACWOUTOFFTIME</b>	Talk time of all <b>ACWOUTOFFCALLS</b> (does not include hold time). This database item is only available with Generic 2.2 and Generic 3 switches.	C
<b>ACWOUTTIME</b>	Talk time of all <b>ACWOUTCALLS</b> (does not include hold time on Generic 2.2 and Generic 3 switches).	C
<b>ACWTIME</b>	Duration of all after call work associated with <b>ACDCALLS</b> .	C
<b>AGINRING (real-time)</b>	<i>Current number of POSITIONS</i> at which split/skill calls are ringing for this split/skill. When an agent makes or answers a personal call while an ACD call is ringing, that position is no longer counted in <b>AGINRING</b> (because the agent is then on an AUXIN/OUT call). This database item is available only with Generic 2 and Generic 3.	S
<b>ANSTIME</b>	Time spent by callers in queue or ringing before being answered by an agent.	C
<b>ASSISTS</b>	Number of times supervisor was called (supervisor assists) by agents on ACD calls or in call-related after call work for this split/skill.	C
<b>AUXINCALLS</b>	Number of inbound extension calls received by agents while in AUX (auxiliary work), AVAILABLE, or, for Generic 2.2 and Generic 3, with an ACD or AUXIN/AUXOUT call on hold.	C
<b>AUXINTIME</b>	Talk time of all <b>AUXINCALLS</b> (does not include hold time on Generic 2.2 and Generic 3).	C
<b>AUXOUTADJCALLS</b>	Number of <b>AUXOUTCALLS</b> an adjunct processor or host computer placed on behalf of an agent. If such calls are placed to off-switch destinations, then they are also counted as <b>AUXOUTOFFCALLS</b> . This database item is only available with Generic 2.2 switches that have the ASAI Gateway Interface feature and Generic 3 switches that have the ASAI feature.	C
<b>AUXOUTCALLS</b>	Number of outbound extension calls made by agents while in AUX (auxiliary work), AVAILABLE, or, for Generic 2.2 and Generic 3, with an ACD or AUXIN/AUXOUT call on hold.	C
<b>AUXOUTOFFCALLS</b>	Number of <b>AUXOUTCALLS</b> that were made to a destination outside the switch. If such calls are placed by an adjunct on behalf of an agent then they are also counted as <b>AUXOUTADJCALLS</b> . This database item is only available with Generic 2.2 and Generic 3 switches.	C
<b>AUXOUTOFFTIME</b>	Talk time of all <b>AUXOUTOFFCALLS</b> (does not include hold time). <b>AUXOUTOFFTIME</b> is included in <b>AUXOUTTIME</b> . This database item is only available with Generic 2.2 and Generic 3 switches.	C
<b>AUXOUTTIME</b>	Talk time of all <b>AUXOUTCALLS</b> (does not include hold time, but does include <b>AUXOUTOFFTIME</b> ).	C

Table A-3: Split/Skill Database Items (Contd)

Database Item	Description	Type
<b>AVAILABLE</b> (real-time)	Current Number of <b>POSITIONS</b> that are available in this split/skill.	S
<b>BACKUPCALLS</b>	Number of <b>ACDCALLS</b> that were delivered to this split/skill by a vector command other than a "queue to main split" command. This includes calls delivered by "messaging split/skill", "check backup", and "route to" split/skill vector commands. This database item is only available with 85 R2V4, Generic 2, and Generic 3 switches that have the Call Vectoring feature.	C
<b>BUSYCALLS</b>	Number of <b>CALLSOFFERED</b> calls that were given a busy signal by the switch. This happens when a "busy" vector command is executed while the call is queued to this split/skill (and this is the primary split/skill the call is queued to) or if a call queued to this split/skill forwards to another split/skill whose queue is full.	C
<b>BUSYTIME</b>	Time the callers waited in queue until hearing busy tone for all <b>BUSYCALLS</b> .	C
<b>CALLSOFFERED</b>	Number of calls that queued to the split/skill. This does <b>not</b> include calls on Generic 1 and Generic 3 switches that could not queue to the split/skill because the queue was full or there was no queue. <b>CALLSOFFERED = ACDCALLS + ABNCALLS + BUSYCALLS + DISCCALLS + OUTFLOWCALLS + DEQUECALLS</b>	C
<b>CONFERENCE</b>	Number of <b>ACDCALLS</b> that were conferenced (Generic 2.2, Generic 3).	C
<b>DA_ACWINCALLS</b>	Number of in calls while ACW for direct agent call.	
<b>DA_ACWINTIME</b>	Duration of all <b>DA_ACWINCALLS</b> .	
<b>DA_ACWOCALLS</b>	Number of out calls while ACW for direct agent call.	
<b>DA_ACWOTIME</b>	Duration of all <b>DA_ACWOCALLS</b> .	
<b>DA_INACW</b> (real-time)	Current number of <b>POSITIONS</b> that are in after call work associated with direct agent calls. This includes agents who are on ACWIN/OUT calls. <b>DA_INACW</b> is a subset of <b>OTHER</b> . Total number of agents in after call work = <b>INACW + DA_INACW</b> . This database item is only available with Generic 3 switches.	S
<b>DA_INQUEUE</b> (real-time)	Current number of direct agent ACD calls waiting in this split/skill queue. This database item is only available with Generic 3 switches.	S
<b>DA_INRING</b> (real-time)	Current number of direct agent ACD calls ringing at an agent in this split/skill. This database item is available only with Generic 3 switches.	S
<b>DA_OLDESTCALL</b> (real-time)	Length of time that the oldest direct agent ACD call has been waiting in queue or ringing at an agent position. This database item is only available with Generic 3 switches.	S

Table A-3: Split/Skill Database Items (Contd)

Database Item	Description	Type
<b>DA_ONACD</b> (real-time)	Current number of <b>POSITIONS</b> that are on direct agent ACD calls. <b>DA_ONACD</b> is a subset of <b>OTHER</b> . Total number of agents on ACD calls = <b>ONACD + DA_ONACD</b> . This database item is only available with Generic 3 switches.	S
<b>DA_OLDEST</b> (real-time)	Time oldest call waiting was placed in agent queue.	
<b>DEQUECALLS</b>	Number of calls that queued to this split/skill as a nonprimary split/skill, but whose disposition was recorded in another split/skill (as answered, abandoned, outflowed, busy, or forced disconnect). This database item is only available with Generic 2.2 with EAS and Generic 3.	C
<b>DEQUETIME</b>	Amount of time <b>DEQUECALLS</b> waited in this split/skill queue before dequeuing. This database item is only available with Generic 2.2 with EAS and Generic 3.	C
<b>DISCCALLS</b>	For Generic 2.2 switches, this is the number of <b>INCALLS</b> that were disconnected by the switch via the "disconnect" vector command. For System 85 R2V4, Generic 2.1, and Generic 3 switches, this is the number of <b>INCALLS</b> that were given a forced disconnect announcement, listened to the entire announcement, then were disconnected by the switch. For the Generic 3 Version 2 switch release, this also includes the number of <b>INCALLS</b> that were disconnected by the switch when the vector disconnect timer expired or that reached the end of vector processing without being queued	C
<b>DISCTIME</b>	Time all <b>DISCCALLS</b> spent in this <b>VECTOR</b> . For Generic 2.2, this is the time until the end of the announcement or until the trunk drops (the caller hangs up without listening to the entire announcement). For System 85 R2V4, Generic 2.1, and Generic 3 switches, this is the time until the announcement ends, and the caller is disconnected by the switch. For the Generic 3 Version 2 switch, if the call is disconnected due to the expiration of the vector disconnect timer or because it reached the end of vector processing without queuing, this is the time until the caller is disconnected by the switch.	C
<b>EVENT1-9</b>	Number of times each event (stroke count) key (keys 1 to 9) was pressed by agents on ACD calls or in after call work associated with an ACD call for this split/skill. This database item is only available with 85, Generic 2, and Generic 3 switches.	C
<b>HIGHCALLS</b>	Number of <b>ACDCALLS</b> with high priority that were answered by agents in this split/skill. This database item is only available with 85 R2V4, Generic 2, and Generic 3 switches that have the Call Vectoring feature.	C

Table A-3: Split/Skill Database Items (Contd)

Database Item	Description	Type
<b>HOLDABNCALLS</b>	Number of times split/skill ACD caller abandoned while on hold. This database item is only available with 85 R2V4, Generic 2, and Generic 3 switches.	C
<b>HOLDCALLS</b>	Number of split/skill ACD calls that were placed on hold at least once. This database item is only available with 85 R2V4, Generic 2, and Generic 3 switches.	C
<b>HOLDTIME</b>	Time spent by split/skill ACD callers on hold. This database item is only available with 85 R2V4, Generic 2, and Generic 3 switches.	C
<b>I_ACDAUXINTIME</b>	Time during the collection interval that <b>POSITIONS</b> were talking on AUXIN calls with at least one split/skill ACD call on hold. This database item is only available with Generic 2.2 and Generic 3 switches.	C
<b>I_ACDAUX_OUTTIME</b>	Time during the collection interval that <b>POSITIONS</b> spent dialing (Generic 2.2) and talking on AUXOUT calls with at least one split/skill ACD call on hold. This database item is available only with Generic 2.2 and Generic 3 switches.	C
<b>I_ACDOTHERTIME</b>	Time during the collection interval that <b>POSITIONS</b> spent in the OTHER state (dialing an outgoing call with a Generic 3 switch, with a ringing personal call with Generic 3, or with calls on hold and with no other state selected) with at least one split/skill ACD call on hold. This database item is available only with Generic 2.2 and Generic 3 switches.	C
<b>I_ACDTIME</b>	Time during the collection interval that <b>POSITIONS</b> were on split/skill ACD calls. This includes time on <b>O_ACDCALLS</b> as well as on <b>ACDCALLS</b> .	C
<b>I_ACWINTIME</b>	Time during the collection interval that <b>POSITIONS</b> were in ACW for this split/skill and on inbound extension calls.	C
<b>I_ACWOUTTIME</b>	Time during the collection interval that <b>POSITIONS</b> were in ACW for this split/skill and on outbound extension calls.	C
<b>I_ACWTIME</b>	Time during the collection interval that <b>POSITIONS</b> were in ACW for split/skill ACD calls or were in ACW not associated with an ACD for this split/skill. This includes <b>I_ACWINTIME</b> and <b>I_ACWOUTTIME</b> .	C
<b>I_AUXINTIME</b>	Time during the collection interval that <b>POSITIONS</b> were in AUX work, AVAILABLE, or, for Generic 2.2 and Generic 3, had an ACD or AUXIN/AUXOUT call on hold <b>and</b> were on inbound extension calls.	C
<b>I_AUXOUTTIME</b>	Time during the collection interval that <b>POSITIONS</b> were in AUX work, AVAILABLE or, for Generic 2.2 and Generic 3, had an ACD or AUXIN/AUXOUT call on hold <b>and</b> were on outbound extension calls.	C
<b>I_AUXTIME</b>	Time during the collection interval that <b>POSITIONS</b> were in AUX. This includes <b>I_AUXINTIME</b> and <b>I_AUXOUTTIME</b> .	C

Table A-3: Split/Skill Database Items (Contd)

Database Item	Description	Type
<b>I_AVAILTIME</b>	Time during the collection interval that <b>POSITIONS</b> were available for calls from this split/skill.	C
<b>I_OTHERTIME</b>	Time during the collection interval that <b>POSITIONS</b> were doing other work. For Generic 3, other work includes: while in Auto-In or Manual-In mode, an agent put any call on hold and performed no further action; the agent had a direct agent call ringing, was on a direct agent call or in ACW for a direct agent call; the agent dialed to place a call or activate a feature; or a personal call rang at the agent with no other activity. For Generic 1, and Generic 3 without EAS, agents were logged into multiple splits and doing work for a split other than this one (on an ACD call, in call-related ACW, or on a personal call attributed to a split other than this one). For Generic 2.2 and Generic with EAS, agents were logged into multiple skills and doing work for a skill other than this one (on an ACD call, in call-related ACW or on a personal call attributed to a skill other than this one). For all switches, <b>I_OTHERTIME</b> is collected for the time period after the link to the switch comes up or after the agent logs in and before the CMS receives notification of the agent's state from the switch.	C
<b>I_RINGTIME</b>	Time during the collection interval that <b>POSITIONS</b> had split/skill ACD calls ringing. If an agent changes work modes or makes/answers another call instead of answering the ringing call, <b>I_RINGTIME</b> stops accumulating. <b>RINGTIME</b> is the time the caller spends ringing and is independent of agent activity. This database item is only available with Generic 2 and Generic 3 switches.	C
<b>I_STAFFTIME</b>	Time during the collection interval that <b>POSITIONS</b> were staffed (logged in).	C
<b>INACW (real-time)</b>	Current number of <b>POSITIONS</b> that are in ACW for this split/skill. This includes agents on ACW-IN/AUX-OUT calls as well as agents in ACW not associated with an ACD call.	S
<b>INAUX (real-time)</b>	Current number of <b>POSITIONS</b> that are in AUX work for all splits/skills (this includes agents on AUX-IN/AUX-OUT calls).	S
<b>INCOMPLETE</b>	Indicates whether or not the data for this collection interval is complete	C

Table A-3: Split/Skill Database Items (Contd)

Database Item	Description	Type
<b>INFLOWCALLS</b>	<p>Number of calls that were redirected to the split's/skill's queue.</p> <p>With multiple split/skill queueing (Generic 3 with vectoring and Generic 2.2 with EAS), calls answered by an agent in a non-primary split/skill are counted as inflows to the split/skill. Calls that abandon from ringing an agent in a non-primary split/skill are also counted as inflows to the split/skill.</p> <p>On the Generic 2.2 with EAS, calls that queue to the "zero" skill after having been queued to a "nonzero" skill are counted as inflows to the "zero" skill. The opposite also applies; calls that queue to a "nonzero" skill after having been queued to the "zero" skill are counted as inflows to the "nonzero" skill. Calls that are queued to one skill group and are subsequently queued to a different skill group are not counted as inflows to the subsequent skill group.</p> <p>Calls that ring at an agent position and then are requeued to the same split/skill by the Redirection on No Answer feature (Generic 3 Version 2 and later) are counted as inflows to the split/skill to which they are requeued.</p> <p>When a call leaves a vector, for example by routing to a split/skill or routing to another VDN, the next split/skill to which a call queues will not be credited with an inflow.</p>	C
<b>INQUEUE (real-time)</b>	Current number of split/skill ACD calls waiting in queue.	S
<b>INRING (real-time)</b>	Current number of split/skill ACD calls which are ringing at agent positions for this split/skill. This database item is available only for Generic 2 and Generic 3 switches.	S
<b>INTERFLOWCALLS</b>	Number of <b>OUTFLOWCALLS</b> that were redirected to a destination outside the switch.	C
<b>INTRVL</b>	Number of minutes in the intrahour interval (15, 30, 60). <b>INTRVL</b> applies to intrahour reports only.	A
<b>LOWCALLS</b>	Number of <b>ACDCALLS</b> with low or no priority that were answered by this split/skill.	C
<b>MAXINQUEUE</b>	Maximum number of calls in queue at any time during the collection interval.	C
<b>MAXOCWTIME</b>	Maximum time during the collection interval that a call waited in queue ringing before an agent answered in this split/skill, the caller abandoned, or the call was redirected, received a busy signal, or was disconnected.	C

Table A-3: Split/Skill Database Items (Contd)

Database Item	Description	Type
<b>MAXSTAFFED</b>	The maximum number of agent <b>POSITIONS</b> that were staffed during the collection interval.	C
<b>MEDCALLS</b>	Number of <b>ACDCALLS</b> medium or "yes" priority that were answered by agents in this split/skill.	C
<b>NOANSREDIR</b>	Number of split/skill ACD calls that rang at agent positions in the split/skill and then were automatically redirected back to the split/skill queue by the Redirection on No Answer feature because they were not answered. This database item is available only with the Generic 3 Version 2 switch.	
<b>O_ABNCALLS</b>	Number of <b>OUTCALLS</b> on this trunk that were offered to ACD splits/skills and were abandoned by the far end. This database item is only available with Generic 2.2 switches that have the ASAI Gateway Interface feature and Generic 3 switches that have the ASAI feature.	C
<b>O_ACDCALLS</b>	Number of <b>ACDCALLS</b> that were placed by an adjunct (outbound predictive dialing). This database item is only available with Generic 2.2 switches that have the ASAI Gateway Interface feature and Generic 3 switches that have the ASAI feature.	C
<b>O_ACDTIME</b>	Talk time of all <b>O_ACDCALLS</b> (does not include <b>HOLDTIME</b> ). This database item is only available with Generic 2.2 switches that have the ASAI Gateway Interface feature and Generic 3 switches that have the ASAI feature.	C
<b>O_ACWTIME</b>	Duration of all after call work associated with <b>O_ACDCALLS</b> . This database item is only available with Generic 2.2 switches that have the ASAI Gateway Interface feature and Generic 3 switches that have the ASAI feature.	C
<b>OLDESTCALL (real-time)</b>	Current number of seconds the oldest split/skill call has been waiting in queue or ringing at an agent position.	S
<b>ONACD (real-time)</b>	Current number of <b>POSITIONS</b> that are on inbound and outbound ACD calls to this split/skill.	S
<b>ONACDAUXIN (real-time)</b>	Number of agents in <b>AUXIN</b> with one or more ACD calls on hold. ONACDAUXIN is a subset on ONAUXIN.	C
<b>ONACDAUXOUT (real-time)</b>	Number of agents in <b>AUXOUT</b> with one or more ACD calls on hold and are on an outbound extension call. ONACDAUXOUT is a subset of ONAUXOUT.	
<b>ONACDOUT (real-time)</b>	Current number of <b>POSITIONS</b> that are on outbound calls to this split/skill. This database item is only available with Generic 2.2 switches that have the ASAI Gateway Interface feature and Generic 3 switches that have the ASAI feature.	S

Table A-3: Split/Skill Database Items (Contd)

Database Item	Description	Type
<b>ONACWIN</b> (real-time)	Current number of <b>POSITIONS</b> that are in <b>ACW</b> and on inbound extension calls. These agents also appear in either <b>INACW</b> or <b>DA_INACW</b> .	S
<b>ONACWOUT</b> (real-time)	Current number of <b>POSITIONS</b> that are in <b>ACW</b> and on outbound extension calls. These agents also appear in either <b>INACW</b> or <b>DA_INACW</b> .	S
<b>ONAUXIN</b> (real-time)	Current number of <b>POSITIONS</b> that are in AUX work or AVAILABLE, or, for Generic 2.2 and Generic 3 switches, with an ACD or AUXIN/AUXOUT call on hold, and on inbound extension calls.	S
<b>ONAUXOUT</b> (real-time)	Current number of <b>POSITIONS</b> that are in AUX work or AVAILABLE or, for Generic 2.2 and Generic 3 switches, with an ACD or AUXIN/AUXOUT call on hold, and on outbound extension calls.	S
<b>ONHOLD</b> (real-time)	Current number of split/skill calls on hold at agent positions. This database item is only available with System 85 R2V4, Generic 2, and Generic 3.	S
<b>O_OTHERCALLS</b>	Number of outbound calls queued to this split/skill that were not answered or abandoned as ACD split/skill calls. These include forced busy calls and calls with unknown dispositions.	C
<b>OTHER</b> (real-time)	Current number of <b>POSITIONS</b> doing <b>OTHER</b> work. For Generic 3, other work includes: while in Auto-In or Manual-In mode, an agent put any call on hold and performed no further action; the agent is on a direct agent call or in ACW for a direct agent call; the agent is dialing to place a call or to activate a feature; a personal call or a direct agent ACD call is ringing with no other activity. For Generic 1 and Generic 3 without EAS, agents are logged into multiple splits and doing work for a split other than this one (on an ACD call, in ACW, or on a personal call attributed to a split other than this one). For Generic 2.2 and Generic 3 with EAS, agents are logged into multiple skills and doing work for a skill other than this one (on an ACD call, in call-related ACW, or on a personal call attributed to a skill other than this one). Agent <b>POSITIONS</b> will show up as in <b>OTHER</b> directly after the link to the switch comes up and directly after the agents log in before the CMS is notified of the agent's work state.	S
<b>OTHERTIME</b>	Time <b>OTHERCALLS</b> waited in queue until the disposition was known and the call left the split.	C

Table A-3: Split/Skill Database Items (Contd)

Database Item	Description	Type
<b>OUTFLOWCALLS</b>	<p>Number of <b>CALLSOFFERED</b> that were redirected to another destination while queued to this split/skill. This can happen if:</p> <ul style="list-style-type: none"> <li>• The call intraflowed or interflowed.</li> <li>• The split/skill call forwarding was active.</li> </ul> <p>This can happen with vectoring:</p> <ul style="list-style-type: none"> <li>• if the call was routed to another VDN.</li> <li>• if the call routed to a number or digits.</li> <li>• if the call queued to another split (Generic 2)</li> <li>• if the call queued to a messaging split/skill (Generic 3).</li> <li>• if the call queued to this split/skill as the primary split/skill, and the call left vector processing and was redirected.</li> <li>• by queuing to multiple splits/skills and being answered by an agent in another split/skill if queued to this split/skill as primary (Generic 3 and Generic 2.2 with EAS).</li> <li>• by queuing to multiple splits/skills if queued to this split/skill as primary.</li> <li>• by ringing at an agent position in another split/skill and then abandoning if queued to this split/skill as primary (Generic 3 and Generic 2.2 with EAS).</li> <li>• by requeuing to the same split/skill via the Redirection on No Answer feature (Generic 3 Version 2).</li> </ul> <p>On Generic 2.2 with EAS, if a call is queued to skills other than the "zero" skill and then is queued to the "zero" skill, the call is counted as an outflow from the primary skill to which it queued. Similarly, a call queued to the "zero" skill which is subsequently queued to a nonzero skill counts as an outflow from the "zero" skill. Calls that queue to one skill group and then subsequently queue to another skill group count as outflows from all the skills to which they were queued in the first skill group.</p>	C
<b>OUTFLOWTIME</b>	Time <b>OUTFLOWCALLS</b> waited in queue or ringing before being redirected.	C
<b>PERIOD 1-9</b>	Length, in seconds, of each service level increment as defined in the ACD Administration: Call Profile window. Each increment represents a progressively longer wait time. CMS counts answered or abandoned calls that wait beyond the last increment ( <b>PERIOD9</b> ) in either <b>ACDCALLS10</b> or <b>ABNCALLS10</b> .	A
<b>PERIODCHG</b>	Indicates whether or not service level increments <b>PERIOD1-9</b> (as defined on the ACD Administration: Call Profile window) changed during the collection interval. Values: YES, NO	A
<b>POSITIONS (real-time)</b>	Current number of agent positions that are assigned to this <b>SPLIT</b> .	A

Table A-3: Split/Skill Database Items (Contd)

Database Item	Description	Type
<b>RINGCALLS</b>	Number of this split's/skill's calls that rang at agent positions. This database item is only available with Generic 2 and Generic 3.	C
<b>RINGTIME</b>	Time this split's/skill's calls spent ringing at agent positions independent of final disposition and other agent activity. <b>I_RINGTIME</b> is the time the agent spends with ringing calls and is affected by other agent activity. <b>RINGTIME</b> is the time the caller spends ringing and is independent of agent activity. This database item is only available with Generic 2 and Generic 3.	C
<b>ROW_DATE (index)</b>	Date on which data was collected.	
<b>SERVICELLEVEL</b>	Number of seconds within which calls must be answered in order to be considered acceptable (as defined on the ACD Administration: Call Profile window).	A
<b>SPLIT (index)</b>	The split/skill number for which data was collected.	A
<b>STAFFED (real-time)</b>	Current number of <b>POSITIONS</b> that are staffed (logged in). <b>STAFFED = AVAILABLE + AGINRING + ONACD + INACW + INAUX + OTHER</b>	S
<b>STARTTIME (real-time)</b>	Start time for the interval data was collected.	S
<b>SVCLEVELCHG</b>	indicates whether or not the service level was changed during the collection interval. Values: YES, NO	A
<b>TOPCALLS</b>	Number of <b>ACDCALLS</b> with top priority that were answered by agents in this split/skill. This database item is only available with 85 R2V4, Generic 2, and Generic 3 switches that have the Call Vectoring feature.	C
<b>TRANSFERRED</b>	Number of <b>ACDCALLS</b> that were transferred to another destination (Generic 1 = transfers to a measured split or transfers from a measured trunk to a measured trunk, 85 R2V4 and Generic 2.1 = transfers to a VDN or a split/skill, Generic 2.2 and Generic 3 = all split/skill calls transferred).	

## Agent Database Items

The Agent Database Item descriptions apply to real-time and historical data.

The column **Type** refers to **Cumulative**, **Administrative**, or **Status** real-time data. See the descriptions at the beginning of this Appendix.

### Real-Time

Agent real-time database items apply to the Current Interval Agent (*cagent*) and Previous Interval Agent (*pagent*) tables. The indexes are **ACD**, **LOGID**, **POSITION**, and **SPLIT**.

Cumulative (C) and Administrative (A) items typically apply to both the current and previous interval real-time tables. Status (S) items only apply to the current interval real-time tables.

### Historical

Agent historical database items apply to the Intrahour Agent (*hagent*), Daily Agent (*dagent*), Weekly Agent (*wagent*), and Monthly Agent (*magent*) tables, except as noted. The indexes are **LOGID**, **SPLIT** and **ROW\_DATE**.

**Table A-4: Agent Database Items**

Database Item	Description	Type
<b>ABNCALLS</b>	Number of split/skill ACD calls that were abandoned while ringing the agent's voice terminal (after being directed to the agent voice terminal, but before being answered). This database item is available with Generic 2 and Generic 3 switches.	C
<b>ABNTIME</b>	Time split/skill ACD callers waited while ringing the agent before being abandoned. This database item is available with Generic 2 and Generic 3 switches.	C
<b>ACD (index)</b>	The ACD number for which data was collected	A
<b>ACDAUXOUTCALLS</b>	The number of <b>AUXOUTCALLS</b> the agent made with at least one split/skill or direct agent ACD call on hold. This includes calls made to transfer or conference the ACD call. This database item is available with Generic 2.2 and Generic 3 switches only.	C

Table A-4: Agent Database Items (Contd)

Database Item	Description	Type
<b>ACDCALLS</b>	Number of calls that were queued to <b>SPLIT</b> and answered by this agent in this <b>SPLIT</b> (includes <b>O_ACDCALLS</b> ).	C
<b>ACDONHOLD (real-time)</b>	Number of direct agent and split/skill ACD calls on hold for the agent. This database item is available with System 85 R2V4, Generic 2, and Generic 3 switches only.	S
<b>ACDTIME</b>	Talk time of all <b>ACDCALLS</b> (does not include <b>HOLDTIME</b> ).	C
<b>ACWINCALLS</b>	Number of inbound extension calls received by the agent while in ACW (after call work). This includes ACW for split/skill ACD calls and ACW not associated with a call.	C
<b>ACWINTIME</b>	Talk time of all <b>ACWINCALLS</b> (does not include <b>HOLDTIME</b> ).	C
<b>ACWOUTADJCALLS</b>	Number of <b>ACWOUTCALLS</b> an adjunct processor or host computer placed on behalf of the agent (keyboard dialed). If such calls are placed to off-switch destinations, then they are also counted as <b>ACWOUTOFFCALLS</b> . This database item is only available with Generic 2.2 switches that have the ASAI Gateway Interface feature and Generic 3 switches that have the ASAI feature.	C
<b>ACWOUTCALLS</b>	Number of outbound extension calls made by the agent or on behalf of the agent while in ACW. This includes ACW for split/skill ACD calls and ACW not associated with a call. <b>ACWOUTCALLS</b> includes <b>ACWOUTADJCALLS</b> and <b>ACWOUTOFFCALLS</b> .	C
<b>ACWOUTOFFCALLS</b>	Number of <b>ACWOUTCALLS</b> that were made to a destination outside the switch. If these calls were placed by an adjunct on behalf of the agent (keyboard dialed), then they are also counted as <b>ACWOUTADJCALLS</b> . This database item is only available with Generic 2.2 and Generic 3 switches.	C
<b>ACWOUTOFFTIME</b>	Talk time of all <b>ACWOUTOFFCALLS</b> (does not include <b>HOLDTIME</b> ). <b>ACWOUTOFFTIME</b> is included in <b>ACWOUTTIME</b> . This database item is only available with Generic 2.2 and Generic 3 switches.	C
<b>ACWOUTTIME</b>	Talk time of all <b>ACWOUTCALLS</b> (does not include <b>HOLDTIME</b> ). This includes time on <b>ACWOUTADJCALLS</b> and on <b>ACWOUTOFFCALLS</b> .	C
<b>ACWTIME</b>	Duration of all ACW associated with <b>ACDCALLS</b> , including time on <b>ACWINCALLS</b> and <b>ACWOUTCALLS</b> .	C
<b>AGSTATE (real-time)</b>	Agent's current <b>WORKMODE</b> and call <b>DIRECTION</b> , for example, <b>AUXOUT</b> .	S
<b>AGTIME (real-time)</b>	Current time since the last agent state change for any split/skill.	S

Table A-4: Agent Database Items (Contd)

Database Item	Description	Type
<b>ANSRINGTIME</b>	Time split/skill and direct agent calls spent ringing at the agent's position before being answered. This database item is only available with Generic 2.2 and Generic 3.	C
<b>ASSIST (real-time)</b>	Current request for supervisor assistance is active for this agent for any split/skill.	S
<b>ASSISTS</b>	Number of times the agent requested assistance from the split/skill supervisor by pressing the ASSIST key or dialing the supervisor's extension. The agent must be handling an ACD call or in call-related after call work for this item to be recorded.	C
<b>AUXINCALLS</b>	Number of inbound extension calls the agent received while in AUX (auxiliary work), AVAILABLE, or, for Generic 2.2 and Generic 3 switches, with an ACD or AUXIN/AUXOUT call on hold.	C
<b>AUXINTIME</b>	Talk time of all <b>AUXINCALLS</b> (does not include <b>HOLDTIME</b> ).	C
<b>AUXOUTADJCALLS</b>	Number of <b>AUXOUTCALLS</b> an adjunct processor or host computer placed on behalf of the agent (keyboard dialed). If such calls are placed to off-switch destinations, then they are also counted as <b>AUXOUTOFFCALLS</b> . This database item is only available with Generic 2.2 switches that have the ASAI Gateway Interface feature and Generic 3 switches that have the ASAI feature.	C
<b>AUXOUTCALLS</b>	Number of outbound extension calls made by the agent or on behalf of the agent while in AUX work, AVAILABLE or, for Generic 2.2 and Generic 3 switches, with an ACD or AUXIN/AUXOUT call on hold. <b>AUXOUTCALLS</b> includes <b>AUXOUTADJCALLS</b> and <b>AUXOUTOFFCALLS</b> .	C
<b>AUXOUTOFFCALLS</b>	Number of <b>AUXOUTCALLS</b> the agent made to a destination outside the switch. If these calls were placed by an adjunct on behalf of the agent (keyboard dialed), they are also counted as <b>AUXOUTADJCALLS</b> . This database item is only available with Generic 2.2 and Generic 3 switches.	
<b>AUXOUTOFFTIME</b>	Talk time of all <b>AUXOUTOFFCALLS</b> (does not include <b>HOLD-TIME</b> ). This time is included in <b>AUXOUTTIME</b> . This database item is only available with Generic 2.2 and Generic 3 switches.	C
<b>AUXOUTTIME</b>	Talk time of all <b>AUXOUTCALLS</b> (does not include <b>HOLDTIME</b> ). This includes time on <b>AUXOUTOFFCALLS</b> and <b>AUXOUTADJCALLS</b> .	C
<b>CHANGED (real-time)</b>	Time of day that new agent activity started (i.e., when <b>WORKMODE</b> or <b>DIRECTION</b> changed). Values: NULL, time-of-day	S
<b>CONFERENCE</b>	Number of times the agent completed a conference, that is, pushed the conference key a second time (Generic 3 and Generic 2.2 = all calls).	C

Table A-4: Agent Database Items (Contd)

Database Item	Description	Type
<b>DA_ABNCALLS</b>	Number of direct agent ACD calls that were abandoned by callers while in queue or ringing the agent's voice terminal. This database item is only available with Generic 3 switches that have the ASAI or EAS feature.	C
<b>DA_ABNTIME</b>	Time <b>DA_ABNCALLS</b> were waiting in queue or ringing before being abandoned. This database item is only available with Generic 3 switches that have the ASAI or EAS feature.	C
<b>DA_ACDCALLS</b>	Number of direct agent ACD calls that the agent answered. This database item is only available with Generic 3 switches that have the ASAI or EAS feature.	C
<b>DA_ACDTIME</b>	Talk time of all <b>DA_ACDCALLS</b> (does not include <b>HOLDTIME</b> ). This database item is only available with Generic 3 switches that have the ASAI or EAS feature.	C
<b>DA_ACWINCALLS</b>	Number of inbound extension calls received by the agent in ACW for direct agent ACD calls. This database item is only available with Generic 3 switches that have the ASAI or EAS feature.	C
<b>DA_ACWINTIME</b>	Talk time of all <b>DA_ACWINCALLS</b> (does not include <b>HOLDTIME</b> ). This database item is only available with Generic 3 switches that have the ASAI or EAS feature.	C
<b>DA_ACWOCALLS</b>	Number of outbound extension calls made by the agent in ACW for direct agent ACD calls. This database item is only available with Generic 3 switches that have the ASAI or EAS feature.	C
<b>DA_ACWOTIME</b>	Talk time of all <b>DA_ACWOCALLS</b> (does not include <b>HOLDTIME</b> ). This database item is only available with Generic 3 switches that have the ASAI or EAS feature.	C
<b>DA_ACWOADJCALLS</b>	Number of <b>DA_ACWOCALLS</b> that were placed by an ASAI adjunct on behalf of the agent (keyboard dialed). If these calls were placed to off-switch destinations, they are also counted as <b>DA_ACWOFFCALLS</b> . This database item is only available with Generic 3 switches that have the outbound ASAI.	C
<b>DA_ACWOFFCALLS</b>	Number of <b>DA_ACWOCALLS</b> that were made to an off-switch location. If these calls were placed by an adjunct on behalf of the agent (keyboard dialed), they are also counted as <b>DA_ACWOADJCALLS</b> .	C
<b>DA_ACWOFFTIME</b>	Talk time of all <b>DA_ACWOFFCALLS</b> (does not include <b>HOLDTIME</b> ). This time is included in <b>DA_ACWOTIME</b> . This database item is only available with Generic 3 switches that have the ASAI or the EAS feature.	C

Table A-4: Agent Database Items (Contd)

Database Item	Description	Type
<b>DA_ACWTIME</b>	Duration of after call work associated with <b>DA_ACDCALLS</b> , including time on <b>DA_ACWINCALLS</b> and <b>DA_ACWOCALLS</b> . This database item is only available with Generic 3 switches that have the ASAI or the EAS feature.	C
<b>DA_ANSTIME</b>	Time spent by callers in direct agent queue and ringing before being answered. This database item is only available with Generic 3 switches that have the ASAI or EAS feature.	C
<b>DA_INQUEUE (real-time)</b>	Current number of direct agent calls waiting in any split/skill queue for this agent. This database item is only available with Generic 3 switches that have the ASAI or EAS feature.	S
<b>DA_OLDESTCALL (real-time)</b>	Length of time that the current oldest direct agent call has waited in any split/skill queue for this agent. This database item is only available with Generic 3 switches that have the ASAI or EAS feature.	S
<b>DA_OTHERCALLS</b>	Number of direct agent calls that were redirected to another destination. This database item is only available with Generic 3 switches that have the ASAI or EAS feature.	C
<b>DA_OTHERTIME</b>	Time spent in queue or ringing by <b>DA_OTHERCALLS</b> before being redirected. This database item is only available with Generic 3 switches that have the ASAI or EAS feature.	C
<b>DESTINATION (real-time)</b>	Outbound call destination for the call the agent is active on for any split/skill (NULL, PBX, OFF, or as defined in Dictionary). If the agent is <b>not</b> handling an outbound call, the value is blank.	S
<b>DIRECTION (real-time)</b>	The direction of the call the agent is currently handling for any split/skill (NULL, IN or OUT, or as defined in Dictionary). If the agent is not on a call, the value is blank.	S
<b>DURATION (real-time)</b>	Duration of current <b>WORKMODE</b> and <b>DIRECTION</b> for this <b>SPLIT</b> (i.e., length of time in current <b>AGSTATE</b> for this <b>SPLIT</b> ).	S
<b>EVENT1-9</b>	Number of times each event (stroke count) key (1 to 9) was pressed while the agent was on an ACD call or in call-related after call work. This database item is only available with 85, Generic 2, and Generic 3 switches.	C
<b>EXTENSION</b>	The extension number for which data was collected.	A
<b>HOLDABNCALLS</b>	Number of times callers abandoned from hold (Generic 3 and Generic 2.2 = all callers, 85 R2V4 and Generic 2.1 = split callers)	C
<b>HOLDCALLS</b>	Number of calls that were placed on hold at least once (Generic 2.2 and Generic 3 = all calls, 85 R2V4 and Generic 2.1 = split calls). This includes calls that abandoned from hold.	C
<b>HOLDTIME</b>	Time spent by callers on hold (Generic 3 and Generic 2.2 = all calls, 85 R2V4 and Generic 2.1 = split calls)	C

Table A-4: Agent Database Items (Contd)

Database Item	Description	Type
<b>I_ACDAUXINTIME</b>	Time during the collection interval that the agent spent talking on AUXIN calls with at least one split/skill or direct agent ACD call on hold. This database item is available on Generic 2.2 and Generic 3 switches only.	C
<b>I_ACDAUX_OUTTIME</b>	Time during the collection interval that the agent spent dialing (Generic 2.2) and talking on AUXOUT calls with at least one split/skill or direct agent ACD call on hold. This database item is available on Generic 2.2 and Generic 3 switches only.	C
<b>I_ACDOTHERTIME</b>	Time during the collection interval that the agent spent in the OTHER state (dialing an outgoing call [Generic 3], with a ringing personal call [Generic 3], or with calls on hold and with no other state selected) with at least one split/skill or direct agent ACD call on hold. This database item is available on Generic 2.2 and Generic 3 switches only.	C
<b>I_ACDTIME</b>	Time during the collection interval that the agent was talking on ACD calls for <b>SPLIT</b> . This includes time spent on <b>O_ACDCALLS</b> . For System 85 R2V4 and Generic 2.1 switches, this also includes the time ACD calls spent on hold.	C
<b>I_ACWINTIME</b>	Time during the collection interval that the agent was in <b>ACW</b> and on inbound extension calls. This includes ACW for split/skill ACD calls and ACW not associated with a call. <b>I_ACWINTIME</b> does not include <b>HOLDTIME</b> .	C
<b>I_ACWOUTTIME</b>	Time during the collection interval that the agent was in <b>ACW</b> and on outbound extension calls. This includes ACW for split/skill ACD calls and ACW not associated with a call. <b>I_ACWOUTTIME</b> does not include <b>HOLDTIME</b> .	C
<b>I_ACWTIME</b>	Time during the collection interval that the agent was in ACW. This includes ACW for split/skill ACD calls and ACW not associated with a call. It also includes <b>I_ACWINTIME</b> and <b>I_ACWOUTTIME</b> .	C
<b>I_AUXINTIME</b>	Time during the collection interval that the agent was in AUX work, AVAILABLE, or for Generic 2.2 and Generic 3 switches, with an ACD or AUXIN/AUXOUT call on hold and on inbound extension calls and <b>SPLIT</b> was the <b>OLDEST_LOGON</b> (does not include <b>HOLDTIME</b> ).	C
<b>I_AUXOUTTIME</b>	Time during the collection interval that the agent was in AUX work, AVAILABLE, or, for Generic 2.2 and Generic 3 switches, with an ACD or AUXIN/AUXOUT call on hold and on outbound extension calls and <b>SPLIT</b> was the <b>OLDEST_LOGON</b> (does not include <b>HOLDTIME</b> ).	C
<b>I_AVAILTIME</b>	Time during the collection interval that the agent was available for ACD calls in this split/skill.	C

Table A-4: Agent Database Items (Contd)

Database Item	Description	Type
<b>I_DA_ACDTIME</b>	Time during the collection interval that the agent spent talking on direct agent calls (does not include <b>HOLDTIME</b> ). This database item is only available with Generic 3 switches that have the ASAI or EAS feature.	C
<b>I_DA_ACWTIME</b>	Time during the collection interval that the agent was doing after call work associated with direct agent ACD calls. This database item is only available with Generic 3 switches that have the ASAI or EAS feature.	C
<b>I_OTHERTIME</b>	Time during the collection interval that the agent was doing other work. For Generic 3, other work includes: while in Auto-In or Manual-In mode, an agent put any call on hold and performed no further action; the agent dialed to place a call or activate a feature; or a personal call rang at the agent with no other activity. For Generic 1 and Generic 3 without EAS the agent was logged into multiple splits and doing work for a split other than this one (on an ACD call, in call-related ACW, or on a personal call attributed to a split other than this one). For Generic 2.2 and Generic with EAS, the agent was logged into multiple skills and doing work for a skill other than this one (on an ACD call, in call-related ACW or on a personal call attributed to a skill other than this one). For all switches, <b>I_OTHERTIME</b> is collected for the time period after the link to the switch comes up or after the agent logs in and before the CMS receives notification of the agent's state from the switch.	C
<b>I_RINGTIME</b>	Time during the collection interval that the agent had split/skill and direct agent ACD calls ringing. If the agent changes work modes or makes/receives another call instead of answering the ringing call, <b>I_RINGTIME</b> stops accumulating. <b>RINGTIME</b> is the time the caller spends ringing and is independent of agent activity.  This database item is only available with Generic 2 and Generic 3 switches.	C
<b>I_STAFFTIME</b>	Time during the collection interval that the agent was staffed (logged in) in this split/skill.	C
<b>INCOMPLETE</b>	Indicates whether or not the data for this collection interval is complete.	C
<b>INTRVL</b>	Number of minutes in the intrahour interval (15, 30, 60). <b>INTRVL</b> applies to intrahour reports only.	A
<b>LOGID (index) (real-time)</b>	The login ID that was used to staff the <b>EXTENSION</b> . Agents in multiple splits/skills have <b>LOGID</b> .	S
<b>LOGONSKILL (real-time)</b>	First skill the agent logged in with. This is also stored in <b>SPLIT</b> . This database item requires a Generic 2.2 or Generic 3 with the EAS feature.	S

Table A-4: Agent Database Items (Contd)

Database Item	Description	Type
<b>LOGONSKILL2-5</b> (real-time)	Second through fifth skills the agent logged in with. LOGONSKILL5 is only used with Generic 2.2. This database item requires a Generic 2.2 or Generic 3 with the EAS feature.	S
<b>LOGONSTART</b> (real-time)	Time of day that the agent logon session started for this <b>SPLIT</b> . If the agent has not logged in during the collection interval, the value will be blank. Values: NULL, time-of-day.	S
<b>MALICIOUS</b> (real-time)	Indicates whether a malicious call trace is active for the agent for any split/skill. This database item is available with Generic 2 and Generic 3 switches, but not for Generic 3i Version 1.	S
<b>NOANSREDIR</b>	The number of split/skill and direct agent ACD calls that rang at this agent and then were automatically requeued to the split/skill by the Redirection on No Answer feature because they were not answered. This database item is available only with the Generic 3 Version 2 switch.	C
<b>O_ACDCALLS</b>	Number of outbound <b>ACDCALLS</b> that an adjunct processor or host computer placed. This database item is only available with Generic 2.2 switches that have the ASAI Gateway Interface feature and Generic 3 switches that have the ASAI feature.	C
<b>O_ACDTIME</b>	Talk time of all <b>O_ACDCALLS</b> (does not include <b>HOLDTIME</b> ). This time is included in <b>ACDTIME</b> . This database item is only available with Generic 2.2 switches that have the ASAI Gateway Interface feature and Generic 3 switches that have the ASAI feature.	C
<b>O_ACWTIME</b>	Duration of all after call work associated with the <b>O_ACDCALLS</b> . This time is included in <b>ACWTIME</b> . This database item is only available with Generic 2.2 switches that have the ASAI Gateway Interface feature and Generic 3 switches that have the ASAI feature.	C
<b>OLDEST_LOGON</b> (real-time)	Current record of the split/skill the agent has been logged into the longest. For Generic 2.2 with EAS, this is always the default ("zero") skill.	S
<b>ONHOLD</b> (real-time)	Current number of calls for any split/skill on hold at the agent's station (Generic 2.2 and Generic 3 = all calls, 85 R2V4 and Generic 2.1 = split ACD calls).	S
<b>ORIGIN</b> (real-time)	How the outbound call the agent is currently handling, if any, originated for any split/skill. Values: NULL, PHONE, or KEYBOARD (adjunct dialed).	S
<b>POSITION (index)</b> (real-time)	The position number associated with this <b>EXTENSION</b> . Agents in multiple splits without EAS have multiple <b>POSITIONS</b> . Agents in multiple skills with EAS have a single <b>POSITION</b> .	A
<b>RINGCALLS</b>	Number of split/skill and direct agent (Generic 3) calls that rang at the agent's position. This database item is only available with Generic 2 and Generic 3 switches.	C

Table A-4: Agent Database Items (Contd)

Database Item	Description	Type
<b>RINGTIME</b>	Time split/skill and direct agent ACD calls spent ringing at the agent's position (independent of disposition or other agent activity). <b>I_RINGTIME</b> is the time the agent spends in the ringing state and is affected by other agent activity. <b>RINGTIME</b> is the time the caller spends ringing and is independent of agent activity. This database item is only available with Generic 2 and Generic 3.	C
<b>ROW_DATE (index)</b>	Date on which data was collected.	
<b>SPLIT (index)</b>	Assigned split/skill number or skill number the agent is logged into for this <b>EXTENSION</b> .	A
<b>SKILLTYPE (real-time)</b>	Type (primary or secondary) of the first skill. This database item is available only with Generic 3 Version 2 with EAS.	S
<b>SKILLTYPE2-4 (real-time)</b>	Type (primary or secondary) of the second, third, and fourth skills. This database item is available only with Generic 3 Version 2 with EAS.	S
<b>STARTED (real-time)</b>	Time of day that <b>WORKMODE</b> began. Values: NULL, time-of day	S
<b>STARTTIME (real-time)</b>	Time of day that the <b>INTRVL</b> for data collection began.	S
<b>TI_AUXTIME</b>	Time during the collection interval that the agent was in AUX for all splits/skills or on <b>AUXINCALLS</b> or <b>AUXOUTCALLS</b> and <b>SPLIT</b> was <b>OLDEST_LOGON</b> . "TI_" time is only stored for the split/skill the agent has been logged into the longest. "TI_" needs to be summed across the splits/skills the agents may log into, in case the logon order changes.	C
<b>TI_AVAILTIME</b>	Time during the collection interval that the agent was in the available state for split/skill or direct agent ACD calls in any split/skill. <b>TI_AVAILTIME</b> is collected for the split/skill that was the <b>OLDEST_LOGON</b> . For traditional (non-EAS) operation, if an agent logged into multiple splits and is in AUX mode in one split and is available for ACD calls in another split, the agent will accrue <b>I_AVAILTIME</b> for the split in which the agent is available and <b>TI_AVAILTIME</b> in the split logged into the longest. "TI_" time is only stored for the split/skill the agent has been logged into the longest. "TI_" time needs to be summed across the splits/skills the agents may log into, in case the logon order changes.	C

Table A-4: Agent Database Items (Contd)

Database Item	Description	Type
<b>TI_OTHERTIME</b>	Time during the collection interval that the agent was doing other work in all splits/skills. For Generic 3, other work includes: while in Auto-In or Manual-In mode, the agent put any call on hold and performed no further action, the agent dialed to place a call or to activate a feature, or a personal call rang with no further activity. For all switches, <b>TI_OTHERTIME</b> is collected for the time period after the link to the switch comes up or after the agent logs in and before the CMS receives notification of the agent's state from the switch. "TI_" time is only stored for the split/skill the agent has been logged into the longest. "TI_" time needs to be summed across the splits/skills the agent may be log into, in case the logon order changes.	C
<b>TI_STAFFTIME</b>	Time during the collection interval that the agent was staffed in any split/skill and <b>SPLIT</b> was <b>OLDEST_LOGON</b> . "TI_" time is only stored for the split/skill the agent has been logged into the longest. "TI_" time needs to be summed across the splits/skills the agent may be log into, in case the logon order changes.	C
<b>TRANSFERRED</b>	Number of times the agent completed a transfer, that is, pressed the transfer key the second time (Generic 1 = measured call to measured split or measured trunk to measured trunk, Generic 3 and Generic 2.2 = all calls, 85 R2V4 and Generic 2.1 = transfers to a VDN or split)	C
<b>VDN (real-time)</b>	Vector directory number associated with the agent's <b>current ACD call</b> for any split/skill. This database item is only available with 85 R2V4, Generic 2, and Generic 3 switches that have the Call Vectoring feature.	S
<b>WORKMODE (real-time)</b>	Current work mode of the agent. Agent work modes include: AVAIL, ACD, ACW, AUX, DACD, DACW, RING, UNKNOWN, OTHER, and UNSTAFF. If the agent has not been logged in during the collection interval, the value will be blank.	S
<b>WORKSKILL (real-time)</b>	Current work state of the agent. The <b>WORKSKILL</b> can be <b>ACW</b> (agent is on a skill or direct agent call, or in ACW) or <b>OLDEST_LOGON</b> (agent is on an AUXIN/AUXOUT call), When the agent is in <b>AUX</b> or <b>OTHER</b> , the <b>WORKSKILL</b> is null. This database item requires a Generic 2.2 or Generic 3 Version 2 switch with the EAS feature.	S
<b>WORKSPLIT (real-time)</b>	When the agent is handling a split/skill or direct agent call or in ACW, this is the split/skill associated with the call or the ACW. When the agent is on an AUXIN or AUXOUT call, this is <b>OLDEST_LOGON</b> . When the agent is available, this is the last split/skill in which the agent was available. This database item is available only with Generic 1 and Generic 3. For switch releases with the EAS feature active, it is recommended you use <b>WORKSKILL</b> instead of <b>WORKSPLIT</b> in reports.	S

**Table A-4: Agent Database Items (Contd)**

<b>Database Item</b>	<b>Description</b>	<b>Type</b>
<b>WORKSPLIT2-3 (real-time)</b>	For agents available in multiple splits/skills, other splits/skills in which the agent is available. This database item is only available with Generic 2.2 with EAS, Generic 1 and Generic 3.	S
<b>WORKSPLIT4 (real-time)</b>	For agents available in multiple splits/skills, another splits/skills in which the agent is available. This database item is only available with Generic 2.2 with EAS and Generic 3 Version 2.	S
<b>WORKSPLIT5 (real-time)</b>	For agents available in multiple splits/skills, another splits/skills in which the agent is available. This database item is only available with Generic 2.2 with EAS.	S

## Trunk Group Database Items

The Trunk Group Database Item descriptions apply to real-time and historical data. The column **Type** refers to **Cumulative**, **Administrative**, or **Status** real-time data. See the descriptions at the beginning of this Appendix.

### Real-Time

Trunk group real-time database items apply to the Current Interval Trunk Group (`ctkgrp`) and Previous Interval Trunk (`ptkgrp`) tables. The indexes are **ACD** and **TKGRP**.

Cumulative (C) and Administrative (A) items typically apply to both the current and previous interval real-time tables. Status (S) items only apply to the current interval real-time tables.

### Historical

Trunk Group historical database items apply to the Intrahour Trunk Group (`htkgrp`), Daily Trunk Group (`dtkgrp`), Weekly Trunk Group (`wtkgrp`), and Monthly Trunk Group (`mtkgrp`) tables, except as noted. The indexes are **ROW\_DATE** and **TKGRP**.

**Table A-5: Trunk Group Database Items**

Database Item	Description	Type
<b>ABNCALLS</b>	Number of calls carried by this trunk that were abandoned by the caller before being answered by an agent. For Generic 2.2 and Generic 3, this is all calls abandoned by the caller that were carried by this trunk, except for calls directly to unmeasured stations that did not go through a VDN or split/skill. For Generic 2.1 and System 85 R2V4, this is ACD calls that abandon from the split queue or from ringing, calls that abandon from vector processing and calls that abandon after being routed to an extension (via the "route to" vector command). For Generic 3, Generic 2.1, and System 85 R2V4, calls that abandon while listening to a forced disconnect announcement are also included. For Generic 1, this is ACD calls that abandon from queue or ringing.	C
<b>ABNQUECALLS</b>	Number of <b>ABNCALLS</b> that were abandoned while in a split/skill or direct agent queue.	C

Table A-5: Trunk Group Database Items (Contd)

Database Item	Description	Type
<b>ABNRINGCALLS</b>	Number of <b>ACDCALLS</b> that were abandoned by the caller while ringing at an agent position. This database item is only available with Generic 2 and Generic 3 switches.	C
<b>ABNVECCALLS</b>	Number of <b>ABNCALLS</b> that abandoned while in vector processing. This includes vector calls that abandoned while in queue or while ringing at an agent position. This database item is only available with 85 R2V4, Generic 2, and Generic 3 switches with Call Vectoring	C
<b>ACD (index)</b>	ACD number for which data was collected	A
<b>ACDCALLS</b>	Number of <b>INCALLS</b> that were answered by an agent as a split/skill or direct agent ACD call	C
<b>ADJUNCTOUT (real-time)</b>	Current number of <b>OUTBOUND</b> calls an adjunct processor originated. This database item is only available with Generic 2.2 switches that have the ASAI Gateway Interface feature and Generic 3 switches that have the ASAI feature.	S
<b>ALLINUSE (real-time)</b>	Current use status of all trunks in the trunk group (on calls or maintenance busy). Values: YES, NO	S
<b>ALLINUSETIME</b>	Length of time during the interval that all trunks in the trunk group were in use (on calls or maintenance busy).	C
<b>AUDIO</b>	Number of calls for which audio difficulty problems were reported for trunks in this trunk group. This database item is available only with System 85 R2V4, Generic 2, and Generic 3.	C
<b>BACKUPCALLS</b>	Number of <b>ACDCALLS</b> that were queued to the answering split/skill using a vector command other than "queue to main". <b>MAINCALLS</b> is then calculated as <b>ACDCALLS - BACKUPCALLS</b> . <b>BACKUPCALLS</b> includes messaging split/skill calls, check backup calls, and route to split/skill calls; it also includes direct agent calls, if you are using this feature. <b>MAINCALLS</b> , therefore, does <b>not</b> include direct agent calls. This database item is only available with System 85 R2V4, Generic 2, and Generic 3 switches with the Call Vectoring feature.	C
<b>BLOCKAGE</b>	Number of outbound call attempts that were blocked because all trunks were busy. This database item is only available with System 85 and Generic 2 switches.	C
<b>BUSYCALLS</b>	Number of <b>INCALLS</b> that were given a busy signal by the switch via the "busy" vector command (System 85 R2V4, Generic 2, and Generic 3) or because the split queue was full (Generic 1 and Generic 3).	C
<b>BH_ABNCALLS</b>	Number of busy hour incoming calls abandoned.	
<b>BH_ACDCALLS</b>	Number of busy hour incoming calls answered.	
<b>BH_ALLINUSETIME</b>	Number of busy hour length of time all trunks were in use.	

Table A-5: Trunk Group Database Items (Contd)

Database Item	Description	Type
<b>BH_BUSYCALLS</b>	Number of busy hour incoming calls forced busy.	
<b>BH_DISCCALLS</b>	Number of busy hour incoming calls disconnected.	
<b>BH_INCALLS</b>	Number of busy hour incoming calls.	
<b>BH_INTIME</b>	Duration of busy hour incoming calls.	
<b>BH_OABNCALLS</b>	Number of busy hour outgoing calls abandoned.	
<b>BH_OACDCALLS</b>	Number of busy hour outgoing calls answered.	
<b>BH_OOTHERCALLS</b>	Number of busy hour outgoing other calls.	
<b>BH_OTHERCALLS</b>	Number of busy hour incoming other calls.	
<b>BH_OUTCALLS</b>	Number of busy hour outgoing calls.	
<b>BH_OUTTIME</b>	Duration of busy hour outgoing calls.	
<b>BH_STARTTIME</b>	Hour for which data was collected.	
<b>COMPLETED</b>	Number of <b>OUTCALLS</b> that were completed (far end answered). This database item is only available with Generic 1 and Generic 3.	C
<b>CONNECTCALLS</b>	Number of <b>INCALLS</b> that were answered at a station and were not split/skill or direct agent ACD calls.	C
<b>DISCCALLS</b>	With Generic 2.2, the number of <b>INCALLS</b> that were disconnected by the switch via the "disconnect" vector command. With System 85 R2V4, Generic 2.1, and Generic 3, the number of <b>INCALLS</b> that were given a forced disconnect announcement (via the disconnect vector) and listened to the entire announcement, then were disconnected by the switch. With Generic 3 Version 2, the number also includes calls disconnected due to the expiration of the vector disconnect timer and those that were disconnected because they reached the end of vector processing without being queued.	C
<b>FAILURES</b>	Number of trunk failures for this <b>TKGRP</b> (System 85 R2V4 and Generic 2). No time or call is recorded in any of the CMS tables. Trunk failures can be due to trunk sequencing failures (usually hardware problems on the trunk or incompatible trunk types on either end of a call) or due to internal switch errors (such as errors in call processing or vectoring translations). This database item is only available with 85 and Generic 2. <b>This item does not include calls with short holding times.</b> (When the Generic 1/Generic 3 switches detect such a problem with trunks, they automatically place the trunks in the maintenance busy state.)	C

Table A-5: Trunk Group Database Items (Contd)

Database Item	Description	Type
<b>I_INOCC</b>	Total trunk hold time for all inbound calls carried by trunks in this trunk group for this collection interval. Trunk holding time is the time from the initial trunk seizure until the trunk goes idle (that is, until the caller drops, the agent releases the call, or the switch disconnects the call). If an incoming call on a measured trunk is transferred off the switch, the incoming trunk remains in use for the call and accrues trunk holding time until the caller drops or the call is released.	C
<b>I_OUTOCC</b>	Total trunk holding time for all outbound calls carried by trunks in this trunk group for this collection interval. Trunk hold time is the time from the initial trunk seizure until the trunk goes idle (i.e., until the far end drops, the agent releases the call, or the switch disconnects the call).	C
<b>INBOUND (real-time)</b>	Current number of <b>NUMINUSE</b> trunks that are busy on inbound calls.	S
<b>INCALLS</b>	Number of inbound calls that were carried by this <b>TKGRP</b> . <b>INCALLS = ACDCALLS + ABNCALLS + OTHERCALLS</b>	C
<b>INCOMPLETE</b>	Indicates whether or not the data for this collection interval is complete. Intervals in which there were trunk failures or in which any trunk in the trunk group was maintenance busy will be marked as <b>INCOMPLETE</b> .	C
<b>INTIME</b>	Trunk holding time for all inbound calls ( <b>INCALLS</b> ) carried by trunks in this trunk group. Trunk holding time is the time from the initial trunk seizure until the trunk goes idle (that is, until the caller drops, the agent releases the call, or the switch disconnects the call). If an incoming call on a measured trunk is transferred off the switch, the incoming trunk remains in use for the call and accrues trunk holding time until the caller drops or the call is released.	C
<b>INTRVL</b>	Number of minutes in the intrahour interval (15, 30, 60). <b>INTRVL</b> applies to intrahour reports only.	A
<b>MBUSY (real-time)</b>	Current number of <b>NUMINUSE</b> trunks that are maintenance busy.	S
<b>MBUSYTIME</b>	Total time during the collection interval that trunks in the trunk group were maintenance busy.	C
<b>NUMINUSE (real-time)</b>	Current number of <b>TRUNKS</b> that are busy (on calls or maintenance busy). <b>NUMINUSE = INBOUND + OUTBOUND + MBUSY</b>	S
<b>O_ABNCALLS</b>	Number of <b>OUTCALLS</b> that were offered to ACD splits/skills and were abandoned by the far end. This database item is only available with Generic 2.2 switches that have the ASAI Gateway Interface feature and Generic 3 switches that have the ASAI feature.	C

Table A-5: Trunk Group Database Items (Contd)

Database Item	Description	Type
<b>O_ACDCALLS</b>	Number of <b>OUTCALLS</b> that were offered to one or more splits/skills and were answered by an agent in one of those splits/skills. This database item is only available with Generic 2.2 switches that have the ASAI Gateway Interface feature and Generic 3 switches that have the ASAI feature.	C
<b>O_OTHERCALLS</b>	Number of <b>OUTCALLS</b> on trunks in this trunk group that were not answered or abandoned as ACD split/skill calls. These include extension out calls, forced busy calls, short outgoing calls, and calls with unknown dispositions.	C
<b>OTHERCALLS</b>	Number of <b>INCALLS</b> carried by this trunk group that were not answered or abandoned as split/skill or direct agent ACD calls. These include forced busy calls, forced disconnect calls, calls that were connected to a non-ACD destination, short inbound calls, and calls with unknown dispositions. <b>OTHERCALLS = INCALLS - ACDCALLS - ABNCALLS</b>	C
<b>OUTBOUND (real-time)</b>	Current number of <b>NUMINUSE</b> trunks that are busy on outbound calls.	S
<b>OUTCALLS</b>	Number of outbound calls that were carried by this <b>TKGRP</b> . <b>OUTCALLS = O_ACDCALLS + O_ABNCALLS + O_OTHERCALLS</b>	C
<b>OUTTIME</b>	This is the trunk holding time for all <b>OUTCALLS</b> carried by trunks in this trunk group. Trunk holding time is the time from the initial trunk seizure until the trunk goes idle (i.e., until the far end drops, the agent releases the call, or the switch disconnects the call).	C
<b>ROW_DATE (index)</b>	Date on which data was collected.	
<b>SETUPTIME</b>	Amount of time until <b>OUTCALLS</b> completed at the far end. This database item is only available with Generic 1 and Generic 3.	C
<b>SHORTCALLS</b>	Number of inbound and outbound calls that occupied a trunk in the trunk group for less than 2 seconds and that did not queue to a split/skill, forward to a split/skill, get answered by an agent, get a forced busy or forced disconnect from the switch, or produce a trunk failure or maintenance busy.	C
<b>SPLIT</b>	Split/skill this <b>TKGRP</b> terminates to.	A
<b>STARTTIME (real-time)</b>	Start time for the interval data was collected.	S
<b>TKGRP (index)</b>	Trunk group number for which data was collected.	A
<b>TRANSFERRED</b>	Number of calls that were transferred to another destination (Generic 1 = measured call to measured split/skill or measured trunk to measured trunk, Generic 3 and Generic 2.2 = all calls, 85 R2V4 and Generic 2.1 = transfers to VDNs an splits).	C

**Table A-5: Trunk Group Database Items (Contd)**

Database Item	Description	Type
<b>TRUNKS</b>	Current number of trunks assigned to this <b>TKGRP</b> .	A
<b>VDN</b>	VDN this <b>TKGRP</b> terminates to. This database item is only available with 85 R2V4, Generic 2, and Generic 3 switches that have the Call Vectoring feature.	A
<b>VECTOR</b>	Vector the <b>VDN</b> terminates to. This database item is only available with 85 R2V4, Generic 2, and Generic 3 switches that have the Call Vectoring feature.	A

## Trunk Database Items

The Trunk Database Item descriptions apply to real-time and historical data.

The column **Type** refers to **Cumulative**, **Administrative**, or **Status** real-time data. See the descriptions at the beginning of this Appendix.

### Real-Time

Trunk real-time database items apply to the Current Interval Trunk (`ctrunk`) and Previous Interval Agent (`ptrunk`) tables. The indexes are **ACD**, **ITN**, and **TKGRP**.

Cumulative (C) and Administrative (A) items typically apply to both the current and previous interval real-time tables. Status items (S) only apply to the current interval real-time tables.

### Historical

Trunk historical database items apply to the Intrahour Trunk (`htrunk`), Daily Trunk (`dtrunk`), Weekly Trunk Group (`wtrunk`), and Monthly Trunk (`mtrunk`) tables, except as noted. The indexes are **EQLOC**, **ROW\_DATE** and **TKGRP**.

**Table A-6: Trunk Database Items**

Database Item	Description	Type
<b>ABNCALLS</b>	Number of calls carried by this trunk that were abandoned by the caller before being answered by an agent. For Generic 2.2 and Generic 3, this is all calls abandoned by the caller that were carried by this trunk, except for calls directly to unmeasured stations that did not go through a VDN or split/skill. For Generic 2.1 and System 85 R2V4, this is ACD calls that abandon from the split queue or from ringing, calls that abandon from vector processing and calls that abandon after being routed to an extension (via the "route to" vector command). For Generic 3, Generic 2.1, and System 85 R2V4, calls that abandon while listening to a forced disconnect announcement are also included here. For Generic 1, this is ACD calls that abandon from queue or ringing.	C
<b>ACD (index)</b>	ACD number for which data was collected.	A

Table A-6: Trunk Database Items (Contd)

Database Item	Description	Type
<b>ACDCALLS</b>	Number of <b>INCALLS</b> on the trunk answered by an agent as a split/skill or direct agent ACD call.	C
<b>AUDIO</b>	Number of calls for which audio difficulty was reported for this trunk. This database item is available only with the System 85 R2V4, Generic 2, and Generic 3 switches.	C
<b>DIRECTION (real-time)</b>	Current call direction of trunk (IN, OUT, or as defined in Dictionary). The value is blank (NULL) if the trunk is not seized (trunk idle).	S
<b>DURATION (real-time)</b>	Current length of time the trunk has been in <b>TKSTATE</b> .	S
<b>EQLOC</b>	Physical equipment location (trunk number) for which data was collected.	A
<b>EXTENSION (real-time)</b>	Extension to which this trunk is <b>currently queued</b> , ringing, or connected.	S
<b>FAILURES</b>	Number of trunk failures for this trunk (System 85 R2V4 and Generic 2). No time or call is recorded in any of the CMS tables. Trunk failures can be due to trunk sequencing failures (usually hardware problems on the trunk or incompatible trunk types on either end of a call) or due to internal switch errors (such as errors in call processing or vectoring translations). This database item is only available with 85 and Generic 2. <b>This item does not include calls with short holding times.</b> (When the Generic 1/Generic 3 switches detect such a problem with trunks, they automatically place the trunks in the maintenance busy state.)	C
<b>I_INOCC</b>	Total trunk hold time for all inbound calls carried by trunks in this trunk group for this collection interval. Trunk holding time is the time from the initial trunk seizure until the trunk goes idle (that is, until the caller drops, the agent releases the call, or the switch disconnects the call). If an incoming call on a measured trunk is transferred off the switch, the incoming trunk remains in use for the call and accrues trunk holding time until the caller drops or the call is released.	C
<b>I_OUTOCC</b>	Total trunk holding time for all outbound calls carried by trunks in this trunk group for this collection interval. Trunk hold time is the time from the initial trunk seizure until the trunk goes idle (i.e., until the far end drops, the agent releases the call, or the switch disconnects the call).	C
<b>INCALLS</b>	Number of inbound calls carried by this trunk. This includes calls with short holding times (SHORTCALLS), but does not include calls that had a trunk failure (FAILURES).  <b>INCALLS = ABNCALLS + ACDCALLS + OTHERCALLS</b>	C

Table A-6: Trunk Database Items (Contd)

Database Item	Description	Type
<b>INCOMPLETE</b>	Indicates whether or not the data for this collection interval is complete. Intervals in which the trunk failed or in which the trunk was maintenance busy are marked as INCOMPELTE.	C
<b>INTIME</b>	Trunk holding time for all inbound calls ( <b>INCALLS</b> ) carried by trunks in this trunk group. Trunk holding time is the time from the initial trunk seizure until the trunk goes idle (that is, until the caller drops, the agent releases the call, or the switch disconnects the call). If an incoming call on a measured trunk is transferred off the switch, the incoming trunk remains in use for the call and accrues trunk holding time until the caller drops or the call is released.	C
<b>INTRVL</b>	Number of minutes in the intrahour interval (15, 30, 60). <b>INTRVL</b> applies to intrahour reports only.	A
<b>ITN (index) (real-time)</b>	Internal trunk number of the trunk.	A
<b>LOGID (real-time)</b>	Current agent (Login ID) handling the call. This is blank (NULL) when the trunk is idle.	S
<b>MBUSYTIME</b>	Length of time during the collection interval that this trunk was maintenance busy.	C
<b>O_ABNCALLS</b>	Number of <b>OUTCALLS</b> on this trunk that were offered to ACD splits/skills and were abandoned by the far end. This database item is only available with Generic 2.2 switches that have the ASAI Gateway Interface feature and Generic 3 switches that have the ASAI feature.	C
<b>O_ACDCALLS</b>	Number of <b>OUTCALLS</b> on this trunk that were offered to ACD splits/skills and were answered by an agent in one of those splits/skills. This database item is only available with Generic 2.2 switches that have the ASAI Gateway Interface feature and Generic 3 switches that have the ASAI feature.	C
<b>O_OTHERCALLS</b>	Number of <b>OUTCALLS</b> on trunks in this trunk group that were not answered or abandoned as ACD split/skill calls. These include extension out calls, forced busy calls, short outgoing calls, and calls with unknown dispositions.	C
<b>OTHERCALLS</b>	Number of <b>INCALLS</b> carried by this trunk group that were not answered or abandoned as split/skill or direct agent ACD calls. These include forced busy calls, forced disconnect calls, calls that were connected to a non-ACD destination, short inbound calls, and calls with unknown dispositions. <b>OTHERCALLS \ INCALLS - ACDCALLS - ABNCALLS</b>	C
<b>OUTCALLS</b>	Number of outbound calls that were carried by the trunk. <b>OUTCALLS = O_ACDCALLS + O_ABNCALLS + O_OTHERCALLS</b>	C

Table A-6: Trunk Database Items (Contd)

Database Item	Description	Type
<b>OUTTIME</b>	This is the trunk holding time for all <b>OUTCALLS</b> carried by trunks in this trunk group. Trunk holding time is the time from the initial trunk seizure until the trunk goes idle (i.e., until the far end drops, the agent releases the call, or the switch disconnects the call).	C
<b>PRIORITY (real-time)</b>	Priority at which call was queued. Without Call Vectoring, the values are: YES, NO, or as defined in Dictionary. With Call Vectoring, the values are: LOW, MED, HIGH, TOP, or as defined in Dictionary. This is blank (NULL) when the trunk idles, gets forced busy, or gets a forced disconnect.	C
<b>PRIORITY2-3 (real-time)</b>	Priority at which call was queued to a second or third Without Call Vectoring, the values are: YES, NO, or as defined in Dictionary. With Call Vectoring, the values are: LOW, MED, HIGH, TOP, or as defined in Dictionary. This is blank (NULL) when the trunk idles, gets forced busy, or gets forced disconnect (announcement). This database item is only available with Generic 2.2 that have the Call Vectoring and EAS feature, and Generic 3 switches that have the Call Vectoring feature.	C
<b>QUECOUNT (real-time)</b>	Number of ACD split/skill queues that the call is in. This is blank (NULL) when the trunk goes idle, gets forced busy, gets a forced disconnect, connects to a station or agent, or forwards out of the queue. Values: NULL, 1-3	S
<b>QUETYPE (real-time)</b>	Manner call entered into the queue. The values are: MAIN, BACKUP, or as defined in Dictionary. This is NULL for direct agent calls, when vectoring is not used, when the trunk idles, gets forced busy, or gets a forced disconnect. This database item is only available with Generic 3, System 85 R2V4, and Generic 2 switches that have the Call Vectoring feature.	S
<b>QUETYPE2-3 (real-time)</b>	Manner the call entered into the second or third queue. The values are: MAIN, BACKUP, or as defined in Dictionary. This is blank (NULL) when vectoring is not used, when the trunk idles, gets forced busy, or gets a forced disconnect. This database item is only available with Generic 2.2 switch with the EAS and Call Vectoring features and the Generic 3 switch with the Call Vectoring feature.	S
<b>ROW_DATE (index)</b>	Date on which data was collected.	
<b>SHORTCALLS</b>	Number of inbound and outbound calls that occupied a trunk in the trunk group for less than 2 seconds and that did not queue to a split/skill, forward to a split/skill, get answered by an agent, get a forced busy or forced disconnect from the switch, or produce a trunk failure or maintenance busy.	C
<b>SPLIT (real-time)</b>	Current split/skill number of the call. This can be the first split/skill number the call was queued to or the split/skill number in which the call was answered. This is blank (NULL) when the trunk idles.	S

Table A-6: Trunk Database Items (Contd)

Database Item	Description	Type
<b>SPLIT2-3</b> (real-time)	Current split/skill numbers of second and third splits/skills to which the call is queued. This is blank (NULL) when the trunk idles. This database item is available only with the Generic 2.2 switch with the Call Vectoring and EAS features and the Generic 3 switch with the Call Vectoring feature.	S
<b>STARTED</b> (real-time)	Time of day that <b>TKSTATE</b> started. Values: NULL, time-of-day	S
<b>STARTTIME</b>	Start time for the interval data was collected.	S
<b>TKGRP (index)</b>	Trunk group number to which the trunk is assigned.	A
<b>TKSTATE</b> (real-time)	Current state of the trunk. Trunk states include: IDLE, SEIZED, QUEUED, CONN, RING, DABN, FBUSY, FDISC, HOLD, MBUSY, UNKNOWN, or as defined in Dictionary.	S
<b>VDN</b> (real-time)	VDN that is associated with the current call. This stays set until the trunk idles, at which time it is set to NULL. This database item is only available with 85 R2V4, Generic 2, and Generic 3 switches that have the Call Vectoring feature.	S
<b>VECTOR</b> (real-time)	Vector that is associated with the current call. This stays set until the trunk idles, at which time it is set to NULL. This database item is only available with 85 R2V4, Generic 2, and Generic 3 switches that have the Call Vectoring feature.	C

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## Vector Database Items

The Vector Database Item descriptions apply to real-time and historical data.

The column **Type** refers to **Cumulative**, **Administrative**, or **Status** real-time data. See the descriptions at the beginning of this Appendix.

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### Real-Time

Vector database items are available only with the Vectoring feature. They apply to the Current Interval Vector (*cvector*) and Previous Interval Vector (*pvector*) tables. The indexes are **ACD** and **VECTOR**.

Cumulative (C) and Administrative (A) items typically apply to both the current and previous interval real-time table. Status (S) items only apply to the current interval real-time tables.

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### Historical

Vector historical database items apply to the Intrahour Vector (*hvector*), Daily Vector (*dvector*), Weekly Vector (*wvector*), and Monthly Vector (*mvector*) tables, except as noted. The indexes are **ROW\_DATE** and **VECTOR**.

**Table A-7: Vector Database Items**

Database Item	Description	Type
<b>ABNCALLS</b>	Number of <b>INCALLS</b> that were abandoned while <b>INPROGRESS</b> for this vector. This includes split/skill and direct agent ACD calls that abandon from queue or from ringing, calls that abandon from vector processing, and for the System 85 R2V4, Generic 2.1, and Generic 3 switches, calls that abandoned while listening to a forced disconnect announcement.	C
<b>ABNQUECALLS</b>	Number of <b>ABNCALLS</b> that were abandoned while in a split/skill or direct agent queue. System 85 R2V4 calls that abandon from ringing are included here.	C
<b>ABNRINGCALLS</b>	Number of split/skill or direct agent <b>ABNCALLS</b> that were abandoned by the caller while ringing at an agent position. This database item is only available with Generic 2 and Generic 3 switches.	C

Table A-7: Vector Database Items (Contd)

Database Item	Description	Type
<b>ABNTIME</b>	Time caller waited while vector steps were executed, the call was queued, and ringing.	C
<b>ACD (index)</b>	ACD number for which data was collected	A
<b>ACDCALLS</b>	Number of split/skill and direct agent ACD calls that were answered by an agent. Includes calls from "queue to main split/skill," "check backup split/skill," "messaging split/skill," "route to" split/skill or direct agent, and "adjunct routing" to split/skill or direct agent.	C
<b>ADJATTEMPTS</b>	Number of adjunct routing attempts for calls in this <b>VECTOR</b> . This database item is only available with Generic 3 switches that have the ASAI feature.	C
<b>ADJROUTED</b>	Number of adjunct-routing calls that were redirected by an adjunct processor or host computer. This database item is only available with Generic 3 switches that have the ASAI feature.	C
<b>ANSTIME</b>	Time split/skill and direct agent ACD calls waited while executing vector steps, queuing and ringing before being answered by an agent.	C
<b>BACKUPCALLS</b>	Number of <b>ACDCALLS</b> that were queued to the answering split/skill using a vector command other than "queue to main". <b>MAINCALLS</b> is calculated as <b>ACDCALLS - BACKUPCALLS</b> . <b>BACKUPCALLS</b> includes messaging split/skill calls, check backup calls, and route to split/skill calls; it also includes direct agent calls, if you are using this feature. Therefore, <b>MAINCALLS</b> does <b>not</b> include direct agent calls. This database item is only available with 85 R2V4, Generic 2, and Generic 3 switches with the Call Vectoring feature.	C
<b>BUSYCALLS</b>	Number of <b>INCALLS</b> that were given a busy signal by the switch, either via the "busy" vector command or, on Generic 3, via a route to split/skill extension with coverage = y where the split/skill queue is full and there are no available agents in the split/skill.	C
<b>BUSYTIME</b>	Time <b>BUSYCALLS</b> waited before hearing a busy signal.	C
<b>DISCCALLS</b>	With Generic 2.2, the number of <b>INCALLS</b> that were disconnected by the switch via the "disconnect" vector command. With System 85 R2V4, Generic 2.1, and Generic 3, the number of <b>INCALLS</b> that were given a forced disconnect announcement (via the disconnect vector) and listened to the entire announcement, then were disconnected by the switch. With Generic 3 Version 2, the number also includes calls disconnected due to the expiration of the vector disconnect timer and those that were disconnected because they reached the end of vector processing without being queued.	C

Table A-7: Vector Database Items (Contd)

Database Item	Description	Type
<b>DISCTIME</b>	Time all <b>DISCCALLS</b> spent in this <b>VECTOR</b> . For Generic 2.2, this is the time until the end of the announcement or until the trunk drops, in the case where the caller hangs up without listening to the entire announcement. For System 85 R2V4, Generic 2.1, and Generic 3, this is the time until the announcement ends, and the caller is disconnected by the switch. For the Generic 3 Version 2 switch, if the call is disconnected due to the expiration of the vector disconnect timer or because it reached the end of vector processing without queuing, this is the time until the caller is disconnected by the switch.	C
<b>GOTOCALLS</b>	Number of <b>OUTFLOWCALLS</b> that were redirected to another vector by way of a "go to vector" command. This database item is available only with Generic 2.2 and Generic 3 switches.	C
<b>GOTOTIME</b>	Time all <b>GOTOCALLS</b> spent in the vector before being redirected to another vector. This database item is available only with Generic 2.2 and Generic 3 switches.	C
<b>INCALLS</b>	Number of inbound calls that were processed by the vector (this includes <b>INFLOWCALLS</b> ). <b>INCALLS = ACDCALLS + ABNCALLS + OTHERCALLS</b>	C
<b>INCOMPLETE</b>	Indicates whether or not the data for this collection interval is complete.	C
<b>INFLOWCALLS</b>	Number of calls that were redirected to the vector by way of a "go to vector" or "route to" VDN command.	C
<b>INPROGRESS (real-time)</b>	Current number of inbound calls that are being processed by this vector until the disposition of the call is known (answered, abandoned, or outflowed from the vector).	S
<b>INQUEUE (real-time)</b>	Current number of <b>INPROGRESS</b> calls that are in split/skill or direct agent ACD queues. System 85 R2V4 calls that are ringing at agent positions are included here.	S
<b>INRING (real-time)</b>	Current number of <b>INPROGRESS</b> split/skill and direct agent ACD calls that are ringing at an agent position. This database item is only available with Generic 2 and Generic 3 switches.	S
<b>INTERFLOWCALLS</b>	Number of <b>OUTFLOWCALLS</b> that were redirected to a destination outside the switch.	C
<b>INTIME</b>	Time spent by <b>INCALLS</b> in the <b>VECTOR</b> executing steps. <b>INTIME</b> stops accruing when the "stop" vector step is executed, when a blank step in the vector is reached, when busy or disconnect is sent, when the call abandons, when a "route to" command succeeds, when a "messaging split/skill or "adjust routing" command succeeds, or when the split/skill or direct agent ACD call rings an agent.	C

Table A-7: Vector Database Items (Contd)

Database Item	Description	Type
<b>INTRVL</b>	Number of minutes in the intrahour interval (15, 30, 60). <b>INTRVL</b> applies to intrahour reports only.	A
<b>LOOKATTEMPTS</b>	Number of look-ahead interflow attempts for calls processed by the vector. This database item is only available with DEFINITY Generic 2.2 and Generic 3 switches that have the Look-Ahead Interflow feature.	C
<b>LOOKFLOWCALLS</b>	Number of <b>INTERFLOWCALLS</b> that were redirected to another switch by way of the Look-Ahead interflow feature. This database item is only available with Generic 2.2 and Generic 3 switches that have the Look-Ahead interflow feature.	C
<b>NUMVDNS (real-time)</b>	Current number of VDNs that are assigned to this vector.	A
<b>OTHERCALLS</b>	Number of <b>INCALLS</b> that connected to a non-ACD destination, were redirected out of the vector, were given a busy signal, or were disconnected.  <b>OTHERCALLS = INCALLS - ACDCALLS - ABNCALLS</b>	C
<b>OTHERTIME</b>	Time <b>OTHERCALLS</b> spent in the vector until their dispositions were known.	C
<b>OUTFLOWCALLS</b>	Number of <b>INCALLS</b> that were redirected to another destination by way of a "go to vector", "route to", or "adjunct routing" command to a destination other than split/skill. (Calls that route to a split/skill by way of a "route to," "adjunct routing," or "messaging split/skill" command are still tracked in the vector.)	C
<b>OUTFLOWTIME</b>	Time all <b>OUTFLOWCALLS</b> spent in the vector before being redirected.	C
<b>RINGCALLS</b>	Number of split/skill and direct agent ACD calls that rang at agent positions. This database item is only available with Generic 2 and Generic 3 switches.	C
<b>RINGTIME</b>	Time split/skill and direct agent ACD calls spent ringing at agent positions independent of final disposition. This database item is only available with Generic 2 and Generic 3 switches.	C
<b>ROW_DATE (index)</b>	Date on which data was collected.	
<b>STARTTIME (real-time)</b>	Start time for the interval data was collected.	S
<b>VECTOR (index)</b>	Vector number that this row represents.	A

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## VDN Database Items

The VDN Database Item descriptions apply to real-time and historical data.

The column **Type** refers to **Cumulative**, **Administrative**, or **Status** real-time data. See the descriptions at the beginning of this Appendix.

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### Real-Time

VDN database items are available only with the Vectoring feature. They apply to the Current Interval VDN (*cvdn*) and Previous Interval VDN (*pvdn*) tables. The indexes are **ACD**, **VDN**, and **VECTOR**.

Cumulative (C) and Administrative (A) items typically apply to both the current and previous interval real-time tables. Status (S) items only apply to the current interval tables.

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### Historical

VDN historical database items apply to the Intrahour VDN (*hvdn*), Daily VDN (*dvdn*), Weekly VDN (*wvdn*), and Monthly VDN (*mvdn*) tables, except as noted. The indexes are **ROW\_DATE** and **VDN**.

**Table A-8: VDN Database Items**

Database Item	Description	Type
<b>ABNCALLS</b>	Number of <b>INCALLS</b> that were abandoned while <b>INPROGRESS</b> for this VDN. This includes split/skill and direct agent ACD calls that abandon from queue or from ringing, calls that abandon from vector processing, calls that abandon after being routed to an extension via the "route to" vector command, and for the System 85 R2V4, Generic 2.1, and Generic 3 switches, calls that abandoned while listening to a forced disconnect announcement.	C
<b>ABNCALLS1-10</b>	Number of <b>INCALLS</b> that abandoned in each of the service level increments <b>PERIOD1</b> through <b>PERIOD9</b> (as defined on the ACD Administration: Call Profile window). <b>ABNCALLS10</b> counts calls that abandoned after <b>PERIOD9</b> .	C
<b>ABNQUECALLS</b>	Number of <b>ABNCALLS</b> that were abandoned while in a split/skill or direct agent queue. System 85 R2V4 calls that abandon from ringing are included here.	C

Table A-8: VDN Database Items (Contd)

Database Item	Description	Type
<b>ABNRINGCALLS</b>	Number of split/skill and direct agent <b>ABNCALLS</b> that were abandoned by the caller while ringing at an agent position. This database item is only available with Generic 2 and Generic 3 switches.	C
<b>ABNTIME</b>	Length of time caller waited before abandoning.	C
<b>ACCEPTABLE</b>	Number of <b>ACDCALLS</b> and <b>CONNECTCALLS</b> that were answered within the acceptable service level (as defined on the ACD Administration: VDN Call Profile window).	C
<b>ACD (index)</b>	ACD number for which data was collected	A
<b>ACDCALLS</b>	Number of split/skill and direct agent ACD calls that were answered by an agent. This includes calls from vector commands: "queue to main," "check backup," "messaging split/skill," "route to" split/skill or direct agent, and "adjunct routing" to a split/skill or direct agent.	C
<b>ACDTIME</b>	Talk time of all <b>ACDCALLS</b> . (This does not include <b>HOLDTIME</b> ).	C
<b>ACWTIME</b>	Time that agents spent in after call work associated with split/skill or direct agent ACD calls.	C
<b>ADJATTEMPTS</b>	Number of adjunct-routing attempts for calls to this VDN. This database item is only available with Generic 3 switches that have the ASAI feature.	C
<b>ADJROUTED</b>	Number of adjunct routing calls that were redirected by the adjunct. This database item is only available with Generic 3 switches that have the ASAI feature.	C
<b>ANSCONNCALLS1-10</b>	Number of calls that were answered in each of the service level increments <b>PERIOD1 - PERIOD9</b> (as defined on the ACD Administration: VDN Call Profile window). This includes ACD calls and extension calls (by way of a "route to" or "adjust routing" command).	C
<b>ANSTIME</b>	Time split/skill and direct agent ACD calls waited to be answered, in vector processing, in queue, and ringing. For extension calls on System 85 V2R4 and Generic 2.1, this is the time until ringing starts.	C
<b>ATAGENT (real-time)</b>	Current number of <b>INPROGRESS</b> calls (ACD and non-ACD) that have been answered by an agent or a station.	S
<b>BH_ABNCALLS</b>	Number of incoming calls that were abandoned during the busy hour.	
<b>BH_ACDCALLS</b>	Number of incoming calls that were answered during the busy hour.	
<b>BH_ACDTIME</b>	Duration of busy hour answered calls.	
<b>BH_BUSYCALLS</b>	Number of incoming calls that were forced busy during the busy hour.	
<b>BH_DISCCALLS</b>	Number of incoming calls that were disconnected during the busy hour.	

Table A-8: VDN Database Items (Contd)

Database Item	Description	Type
<b>BH_OTHERCALLS</b>	Number of other incoming busy hour calls.	
<b>BH_STARTTIME</b>	Hour for which data was collected.	
<b>BH_VDNCALLS</b>	Number of calls offered to the VDN during the busy hour.	
<b>BACKUPCALLS</b>	Number of <b>ACDCALLS</b> that were queued to the answering split/skill using a vector command other than "queue to main". <b>MAINCALLS</b> is then calculated as <b>ACDCALLS - BACKUPCALLS</b> . <b>BACKUPCALLS</b> includes messaging split/skill calls, check backup calls, and route to split/skill calls; it also includes direct agent calls, if you are using this feature. Therefore, <b>MAINCALLS</b> does <b>not</b> include direct agent calls. This database item is only available with 85 R2V4, Generic 2, and Generic 3 switches with the Call Vectoring feature.	C
<b>BUSYCALLS</b>	Number of <b>INCALLS</b> that were given a busy signal by the switch, either via the "busy" vector command or, on Generic 3, via a route to split/skill extension with coverage = y where the split/skill queue is full and there are no available agents in the split/skill.	C
<b>BUSYTIME</b>	Duration of all <b>BUSYCALLS</b> (until the trunk goes idle).	C
<b>CONNECTCALLS</b>	Number of non-ACD <b>INCALLS</b> that were delivered to a station by way of a "route to" or "adjunct routing" command and were not abandoned. For 85 R2V4 and Generic 2.1, non-ACD abandons are not tracked, so all calls that route to a station extension are included in <b>CONNECTCALLS</b> for those switch releases.	C
<b>CONNECTTIME</b>	Time <b>CONNECTCALLS</b> waited before being answered (Generic 3). For 85 R2V4 and Generic 2.1, this is the time before ringing starts.	C
<b>CONNTALKTIME</b>	Talk time for all <b>CONNECTCALLS</b> (does not include <b>HOLDTIME</b> ).	C
<b>DISCCALLS</b>	With Generic 2.2, the number of <b>INCALLS</b> that were disconnected by the switch via the "disconnect" vector command. With System 85 R2V4, Generic 2.1, and Generic 3, the number of <b>INCALLS</b> that were given a forced disconnect announcement and listened to the entire announcement, then were disconnected by the switch. With Generic 3 Version 2, the number also includes calls disconnected due to the expiration of the vector disconnect timer and those that were disconnected because they reached the end of vector processing without being queued.	C
<b>DISCTIME</b>	Time all <b>DISCCALLS</b> spent in this <b>VECTOR</b> . For Generic 2.2, this is the time until the end of the announcement or until the trunk drops, in the case where the caller hangs up without listening to the entire announcement. For System 85 R2V4, Generic 2.1, and Generic 3, this is the time until the announcement ends, and the caller is disconnected by the switch. For the Generic 3 Version 2 switch, if the call is disconnected due to expiration of the vector disconnect timer or because it reached the end of vector processing without queuing, this is the time until the caller is disconnected by the switch.	C

Table A-8: VDN Database Items (Contd)

Database Item	Description	Type
<b>HOLDABNCALLS</b>	Number of times callers abandoned from hold (Generic 2.2 and Generic 3 = all callers; System 85 R2V4 and Generic 2.1 = split callers).	C
<b>HOLDACDCALLS</b>	The number of split/skill or direct agent ACD callers on hold.	C
<b>HOLDACDTIME</b>	The time spent by split/skill or direct agent ACD callers on hold.	C
<b>HOLDCALLS</b>	Number of calls that were placed on hold at least once. This database item is available for Generic 3, Generic 2, and System 85 switches only.	C
<b>HOLDTIME</b>	Time spent by callers on hold. This database item is available for Generic 3, Generic 2, and System 85 switches only.	C
<b>ILN (index) (real-time)</b>	Internal line number of the VDN.	A
<b>INCALLS</b>	Number of inbound calls that were directed to this VDN. <b>INCALLS = ACDCALLS + ABNCALLS + OTHERCALLS</b>	C
<b>INCOMPLETE</b>	Indicates whether or not the data for this collection interval is complete.	C
<b>INFLOWCALLS</b>	Number of calls that were redirected into the VDN by way of a "route to" VDN command.	C
<b>INPROGRESS (real-time)</b>	Current number of inbound calls that are associated with this <b>VDN</b> . Calls are considered to be in progress in the VDN until they route to another VDN, route off the switch, are transferred, or the trunk carrying them goes idle.	S
<b>INQUEUE (real-time)</b>	Current number of <b>INPROGRESS</b> calls that are in a split/skill or direct agent ACD queue. For System 85 R2V4, this includes calls that are ringing at agent positions.	S
<b>INRING (real-time)</b>	Current number of <b>INPROGRESS</b> split/skill and direct agent ACD calls that are ringing at an agent position. This database item is only available with Generic 2 and Generic 3 switches.	C
<b>INTERFLOWCALLS</b>	Number of <b>OUTFLOWCALLS</b> that were redirected to a destination outside the switch.	C

Table A-8: VDN Database Items (Contd)

Database Item	Description	Type
<b>INTIME</b>	Time spent by <b>INCALLS</b> in this <b>VDN</b> . <b>INTIME = ACDTIME + ABNTIME + OTHERTIME + ANSTIME + HOLDTIME</b>  On System 85 R2V4 and Generic 2.1, there are multiple call handling scenarios in which call-based <b>ACDTIME</b> is stopped before the call ends. In these scenarios, <b>INTIME</b> does not add up to <b>ACDTIME + ABNTIME + ANSTIME + OTHERTIME + HOLDTIME</b> , so hold time cannot be calculated. (The scenarios occur when an agent puts an ACD call on hold using the hold key when another ACD call is already on hold or when a call is dropped while an ACD call is on hold.)	C
<b>INTRVL</b>	Number of minutes in the intrahour interval (15, 30, 60). <b>INTRVL</b> applies to intrahour reports only.	A
<b>INVECTOR (real-time)</b>	Current number of <b>INPROGRESS</b> calls that are being processed by a vector. Calls that are in queue and calls that are ringing are still counted as <b>INVECTOR</b> . Calls are no longer counted as <b>INVECTOR</b> when they connect to a station, are answered by an agent, abandon, or outflow from the VDN.	S
<b>LOOKATTEMPTS</b>	Number of look-ahead interflow attempts for calls in this VDN This database item is available with the Generic 2.2 and Generic 3 switches.	C
<b>LOOKFLOWCALLS</b>	Number of <b>INTERFLOWCALLS</b> that were redirected by way of the Look-Ahead Interflow feature This database item is available with the Generic 2.2 and Generic 3 switches.	C
<b>MAXOCWTIME</b>	Maximum time during the collection interval that a caller waited in the VDN before being answered or connected, abandoning, being redirected, receiving busy signal or being disconnected. This applies only to the first disposition of the call.	C
<b>MAXWAITING</b>	Maximum number of calls in progress in the VDN during the collection interval (i.e., the high-water mark for calls in the VDN during the interval).	C
<b>NOANSREDIR</b>	The number of split/skill ACD calls that rang at agent stations and then were automatically requeued to the split's/skill's queue by the Redirection on No Answer feature because they were not answered. This database item is available only with the Generic 3 Version 2 switch.	
<b>NUMTGS</b>	Number of trunk groups assigned to this VDN.	A
<b>OLDESTCALL (real-time)</b>	Amount of time the oldest call has been waiting to be answered.	S

Table A-8: VDN Database Items (Contd)

Database Item	Description	Type
<b>OTHERCALLS</b>	<b>OTHERCALLS</b> include forced busy, forced disconnect, and outflow calls, as well as non-ACD calls that were answered. <b>OTHERCALLS = INCALLS - ACDCALLS - ABNCALLS</b>	C
<b>OTHERTIME</b>	Duration of all <b>OTHERCALLS</b> until the calls leave the VDN (i.e., calls drop, are sent to another VDN, are transferred, or are sent outside the switch).	C
<b>OUTFLOWCALLS</b>	Number of <b>INCALLS</b> that were redirected to another VDN or to a destination outside the switch by way of a "route to" or "adjunct routing" command.	C
<b>OUTFLOWTIME</b>	Time all <b>OUTFLOWCALLS</b> spent in this VDN before being redirected.	C
<b>PERIOD1-9</b>	Time periods defining the way answers/connects and abandons are collected for the call profiles.	A
<b>PERIODCHG</b>	Indicates whether or not the periods for call profiles were changed during the collection interval.	A
<b>RINGCALLS</b>	Number of split/skill and direct agent ACD calls that rang at agent positions. This database item is only available with Generic 2 and Generic 3 switches.	C
<b>RINGTIME</b>	Time split/skill and direct agent ACD calls spent ringing at agent positions independent of final disposition. This database item is only available with Generic 2 and Generic 3 switches.	C
<b>ROW_DATE (index)</b>	Date the information was collected.	
<b>SERVICELEVEL</b>	Number of seconds in which calls must be answered/connected to be considered acceptable.	A
<b>SKILLACWTIME1-3</b>	ACW time spent by agents for calls answered in each VDN skill preference. This database item is available only with Generic 2.2 and Generic 3 Version 2 switches with EAS.	C
<b>SKILLCALLS1-3</b>	Number of calls answered by agents in each VDN skill preference. This database item is available only with Generic 2.2 and Generic 3 Version 2 switches with EAS.	C
<b>SKILLTIME1-3</b>	Time agents spent talking on calls answered by each VDN skill preference. This database item is available only with Generic 2.2 with EAS and Generic 3 Version 2 with EAS.	C
<b>SKILL1-3</b>	The first, second, and third VDN skill assigned to this VDN. This database item is available only with Generic 2.2 with EAS and Generic 3 Version 2 with EAS.	A
<b>STARTTIME (real-time)</b>	Start time for the interval data was collected.	S

**Table A-8: VDN Database Items (Contd)**

<b>Database Item</b>	<b>Description</b>	<b>Type</b>
<b>SVCLEVELCHG</b>	Indicates whether or not the service level was changed during the collection interval.	A
<b>TRANSFERRED</b>	Number of calls that were transferred to another destination (Generic 3 and Generic 2.2 = all VDN calls, 85 R2V4 and Generic 2.1 = transfers to a measured VDN or split).	C
<b>VDN (index)</b>	Vector directory number (extension) that this row represents.	A
<b>VECTOR (index)</b>	Number of the vector to which this VDN is assigned.	A

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## Call Work Codes Database Items

The Call Work Codes Database Item descriptions apply to real-time and historical data. The column **Type** refers to **Cumulative**, **Administrative**, or **Status** real-time data. See the descriptions at the beginning of this Appendix.

---

### Real-Time

Call Work Codes are only available with Generic 3 and Generic 2.2 switches. Real-time database items for call work codes apply to the Current Interval CWC (*ccwc*) and Previous Interval (*pcwc*) tables. The indexes are **ACD** and **CWC**.

Cumulative (C) and Administrative (A) items typically apply to both the current previous interval real-time tables. Status (S) items only apply to the current interval real-time table.

---

### Historical

Call Work Codes historical database items apply to the Intrahour Call Work Codes (*hcwc*), Daily Call Work Codes (*dcwc*), Weekly Call Work Codes (*wcwc*), and Monthly Call Work Codes (*mcwc*) tables, except as noted. The indexes are **ROW\_DATE** and **CWC**.

**Table A-9: Call Work Codes Database Items**

Database Item	Description	Type
<b>ACD (index)</b>	ACD number for this data	A
<b>ACDCALLS</b>	Number of split/skill and direct agent ACD calls for which this call work code was entered.	C
<b>ACDTIME</b>	Talk time of all <b>ACDCALLS</b> with this call work code (does not include <b>HOLDTIME</b> ).	C
<b>ACWTIME</b>	Time that agents spent in after call work for <b>ACDCALLS</b> that were associated with the call work code.	C
<b>CWC (index)</b>	Call work code that this data row represents	A
<b>INCOMPLETE</b>	Indicates whether or not the data for this collection interval is complete.	C
<b>INTRVL</b>	Number of minutes in the intrahour interval (15, 30, 60). <b>INTRVL</b> applies to intrahour reports only.	A
<b>ROW_DATE (index)</b>	Date on which data was collected.	
<b>STARTTIME (real-time)</b>	Start time for the interval for which data was collected (Intrahour table only).	S

# Agent Login/Logout Historical Database Items

Agent Login/Logout historical database items apply to the Agent Login/Logout (haglog) table. The indexes are **SPLIT** and **ROW\_DATE**.

**Table A-10: Agent Login/Logout Historical Database Items**

Database Item	Description
<b>ACD</b>	The ACD number for which data was collected.
<b>EXTN</b>	Extension number of the station that the agent staffed.
<b>INFLAG</b>	If not null, indicates that agent was already logged in when link came up. Values: NULL, "<".
<b>LOGID</b>	Login ID that was used to staff the <b>EXTN</b> .
<b>LOGIN</b>	Time at which the agent logged into this extension and split/skill with the given login ID.
<b>LOGONSKILL2-5</b>	Skills assigned to agents
<b>LOGOUT</b>	Time at which the agent logged out
<b>LOGOUT_DATE</b>	Date on which the agent logged out.
<b>OUTFLAG</b>	If not null, indicates that agent logged out while link was down. Values: NULL, ">".
<b>ROW_DATE (index)</b>	The date the agent logged in or out.
<b>SKILLTYPE</b>	Type of agent skill (primary or secondary) for agent's first skill. (Generic 3 Version 2 with EAS).
<b>SKILLTYPE2-4</b>	Type of agent skill (primary or secondary) for agent's second, third, and fourth skills. (Generic 3 Version 2 with EAS).
<b>SPLIT (index)</b>	Split number that this <b>EXTN</b> is assigned to or skill number that the agent logged into.
<b>SPLIT2-5</b>	Skill number of the agent's second, third, fourth, and fifth skills. The fifth skill is only for Generic 2.2 with EAS. (Generic 3 Version 2 with EAS or Generic 2.2 with EAS).

# Agent Trace Historical Database Items

Agent Trace historical database items apply to the Agent Trace (`ag_actv`) table. **Optional** database items collect data only when those items are selected in the System Setup: Agent Trace Record Contents window. To receive a report containing optional Agent Trace historical database items, a custom report must be created. The index is `LOGID`.

**Table A-11: Agent Trace Historical Database Items**

Database Item	Description
<b>ACD</b>	The ACD number for which data was collected.
<b>DIRECTION</b>	Direction of the call - NULL, IN, or OUT.
<b>DURATION</b>	Length of time in the given work state (work mode and direction).
<b>EVENT_TIME</b>	Time of day (hour, minute, and second) the <b>WORKMODE</b> or <b>DIRECTION</b> changed.
<b>LOGID (index)</b>	Login ID that was used to staff the extension.
<b>RECONNECT</b>	This event represents the agent reconnecting to the call after putting it on hold. (System 85 R2V4, Generic 2, and Generic 3).
<b>ROW_DATE</b>	The date of the agent's work mode or direction change.
<b>SPLIT</b>	Split number that the agent's extension is assigned to or skill number that the agent logged into.
<b>STARTTIME</b>	Time of day (hour and minute) for which the Agent Trace is being ordered. This is the time of day you enter to request the report.
<b>WMODE_SEQ</b>	Sequence number for events that occur in the same second.
<b>WORKMODE</b>	Work mode the agent was in NULL, AVAIL, ACD, ACW, AUX, DACD, DACW, RING, UNKNOWN, OTHER, or UNSTAFF.
<b>Optional Database Items</b>	
<b>ASSIST_ACTV</b>	The agent requested supervisor assistance (pressed the ASSIST key).
<b>CALLER_HOLD</b>	The agent put the caller on hold. (System 85 R2V4, Generic 2.1 = split calls, Generic 2.2 and Generic 3 = all calls)
<b>CALLING_PTY</b>	The calling party identification. This is the ANI/SID, for Generic 2.2 with ISDN ANI delivery, extension or trunk equipment location identifying the originator of the call.
<b>CONFERENCE</b>	The agent activated a conference. (Generic 3 and Generic 2.2 = all calls).
<b>DIGITS_DIALED</b>	Digits the agent dialed. (Generic 2.2, Generic 3).

**Table A-11: Agent Trace Historical Database Items (Contd)**

Database Item	Description
<b>EXT_CALL_ORIG</b>	The agent originated an external call. This database item is only available with Generic 2.2 and Generic 3.
<b>KEYBD_DIALED</b>	The call was keyboard-dialed. This database item is only available with Generic 2.2 switches that have the ASAI Gateway Interface feature and Generic 3 switches that have the ASAI feature.
<b>MCT</b>	The agent activated a malicious call trace. This database item is only available with 85 R2V4, Generic 2, and Generic 3 except for Generic 3i Version 1.
<b>PROMPT_DIGITS</b>	Digits the caller entered in response to call prompting. This database item is only available with Generic 3 switches that have the Call Vectoring and Call Prompting features.
<b>TRANSFERRED</b>	The agent transferred the call. For Generic 1, this is a measured call to measured split or measured trunk to measured trunk. For Generic 3 and Generic 2.2, this is all calls. For System 85 R2V4 and Generic 2.1, this is transfers to a measured VDN or split.
<b>WORKCODE</b>	The call work code entered for the call. This database item is only available with Generic 3 and Generic 2.2 switches that have the Call Work Codes feature.

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## Current Day Configuration Forecast Database Items

The Current Day Configuration Forecast database items collect values entered in the Current Day window, and apply only to the Current Day (`f_cday`) table. The indexes are `ACD`, `ROW_DATE` and `SPLIT`.

**Table A-12: Current Day Configuration Database Items**

Database Item	Description
<b>ACD (index)</b>	ACD number for this data.
<b>CHANGE</b>	Additional change factor (percent).
<b>CHPROF</b>	Number of the call handling profile to use.
<b>FMETHOD</b>	Type of trending to use for forecast. Values: 0 = none, 1 = seasonal, 2 = current trending.
<b>HDATE1</b>	Date of first day of historical data to be used.
<b>HDATE2</b>	Date of second day of historical data to be used.
<b>HDATE3</b>	Date of third day of historical data to be used.
<b>HDATE4</b>	Date of fourth day of historical data to be used.
<b>ROW_DATE (index)</b>	The date of the forecast.
<b>SPLIT (index)</b>	Split/skill number.
<b>TRENDBASE</b>	Base date for seasonal trending.
<b>WT1</b>	Weight given to date 1.
<b>WT2</b>	Weight given to date 2.
<b>WT3</b>	Weight given to date 3.
<b>WT4</b>	Weight given to date 4.

## Current Day Forecast Report Database Items

The Current Day Forecast Report database items collect data for Current Day forecasts, and apply only to the Current Day Report (`f_cdayrep`) table. Forecast data for a split/skill is automatically generated when the Forecast Manager runs (if you have also completed a Current Day Configuration for the split/skill). The indexes are **ACD**, **ROW\_DATE** and **SPLIT**.

**Table A-13: Current Day Report Database Items**

Database Item	Description
<b>ACD (index)</b>	ACD number for this current day data.
<b>AGOCC</b>	The objective maximum percentage of time that an agent will be on ACD calls (agent occupancy).
<b>AVGAGSERV</b>	The objective average number of seconds for an agent to service a call.
<b>AVGSPEEDANS</b>	The objective average speed of answer in seconds for this time of call.
<b>FCALLS</b>	Number of forecast calls carried.
<b>INTRVL</b>	Number of minutes in the intrahour interval (15, 30, 60). <b>INTRVL</b> applies to intrahour reports only.
<b>NUMAGREQ</b>	Number of agents required to handle <b>FCALLS</b> .
<b>RAGOCC</b>	The resulting maximum percentage of time that an agent will be on ACD calls.
<b>RAVGSPEEDANS</b>	The resulting average speed of answer in seconds for this type of call.
<b>ROW_DATE (index)</b>	Date of the forecast.
<b>RSERVLEVELP</b>	The resulting percentage of calls to be handled within <b>SERVLEVELT</b> seconds.
<b>SERVLEVELP</b>	The objective percentage of calls to be handled within <b>SERVLEVELT</b> seconds.
<b>SERVLEVELT</b>	The number of seconds within which <b>SERVLEVELP</b> percent of calls are to be answered (service level time).
<b>SPLIT (index)</b>	Split/skill number.
<b>STARTTIME</b>	Start of intrahour interval (on 24-hour clock).

# Call Record Historical Database Items

The Call Record historical database items apply to the `call_rec` table.

**Table A-14: Call Record Database Items**

Database Item	Description
<b>ACD</b>	The number of the ACD that handled this call.
<b>ACWTIME</b>	Time spent in ACW (after call work) related to this call by the answering agent in this segment, in seconds.
<b>ANSHOLDTIME</b>	Total time call was put on hold by the answering agent, in seconds, in this segment. Note that in agent-to-agent calls, <b>ANSHOLDTIME</b> 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). 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 and Generic 2.1. Hold time is not recorded for Generic 1 switches.
<b>ANSLOGIN</b>	The login ID of the agent who answered the call in this segment.
<b>ASSIST</b>	Whether or not the answering agent in this segment requested supervisor assistance on this call (YES/NO).
<b>AUDIO</b>	Whether or not an agent in this segment reported an audio problem (YES/NO).
<b>CALLID</b>	A unique number assigned to this call and all its 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. 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.
<b>CALLING_PTY</b>	The ANI/SID (Generic 2.2 with ANI delivery), extension or trunk equipment location identifying the originator of the call.
<b>CONFERENCE</b>	Whether or not the answering agent initiated a conference on this segment (YES/NO).
<b>CONSULTTIME</b>	The time an agent talked on any outbound call, while in AUX work or ACW. This includes the time the originating agent spent talking to the destination party. This is the time between the two presses of the transfer or conference key. It includes wait time if the agent is calling a VDN or split/skill extension, but the wait time can be subtracted out by subtracting the <b>DISPTIME</b> item from <b>CONSULTIME</b> .
<b>DA_QUEUED</b>	Whether or not the call was queued as a direct agent call (YES/NO). This database item applies to Generic 3 only.

**Table A-14: Call Record Database Items (Contd)**

Database Item	Description
<b>DIALED_NUM</b>	The number the caller dialed. This will be the VDN for inbound vectoring calls and dialed digits for outbound calls. This will be zero for inbound calls without vectoring.
<b>DISPIVECTOR</b>	The number of the first vector associated with the disposition VDN.
<b>DISPOSITION</b>	<p>Represents the call disposition and indicates whether the call was: connected (CONN, non-ACD call to a measured agent), answered (ANS, split/skill or Direct Agent call answered by an agent), abandoned (ABAN), interflowed, forced busy (FBUSY), forced disconnect (FDISC), or other (OTHER) in the segment.</p> <p>A connected call is a non-ACD call to a measured agent for which 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 (CMS receives no indication the call abandons).</p> <p>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.</p> <p>An abandoned call is any call for which CMS receives notification that the caller abandoned.</p> <p>An interflowed call is any call interflowed to another destination.</p> <p>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 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 Generic 2.2, 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, Generic 2.1, and Generic 3, forced disconnect calls are calls that were given a forced disconnect announcement and listened to the entire announcement, then were disconnected by the switch. For Generic 3 Version 2, disconnect calls also include calls disconnected because of the vector disconnect timer or because they reached the end of vector processing without being queued.</p> <p>Other calls are any other calls.</p>
<b>DISPPRIORITY</b>	The priority the call had at its disposition. Priorities can be LOW, MED, HIGH, or TOP (with vectoring) or YES/NO (without vectoring). If the call never queued to a split/skill, the priority will be null.

Table A-14: Call Record Database Items (Contd)

Database Item	Description
<b>DISPSPLIT</b>	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 <b>DISPLIT</b> set to -1. Calls that were queued to an unmeasured split or skill at the time of disposition will have <b>DISPLIT</b> set to zero.
<b>DISPTIME</b>	The wait time (in the vector, in queue, ringing) until the disposition recorded in <b>DISPOSITION</b> for the call segment. For extension calls made directly to agents (not through a VDN), this will always be zero.
<b>DISPVDN</b>	The number of the VDN associated with the call at its disposition for this segment. <b>DISPVDN</b> will be zero for calls that are not associated with a VDN at their disposition.
<b>DURATION</b>	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. Trunk holding time for the trunk in this segment can involve two trunks, each of which has a holding time. 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 <b>DURATION</b> for the first segment is the time from the SEIZED to IDLE state for the trunk
<b>EQLOC</b>	The equipment location of the trunk that carried the call. This will be zero if the trunk is not measured.
<b>EVENT1-9</b>	Number of times each event (stroke count) key was entered for this call segment. This database item is available with System 85 R2V4, Generic 2, and Generic 3.
<b>FIRSTVECTOR</b>	The number of the first vector associated with the first VDN for the call segment. This will be zero if no vector is involved.
<b>FIRSTVDN</b>	The number of the first VDN associated with the call segment. This will be zero for calls not associated with a VDN.
<b>HELD</b>	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 calling agent. With System 85 R2V4 and Generic 2.1 switches, this equals split/skill calls. With Generic 2.2 and Generic 3 switches, this is all calls.
<b>HOLDABN</b>	Whether this call abandoned from hold (YES/NO) 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.
<b>LASTCWC</b>	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.

**Table A-14: Call Record Database Items (Contd)**

Database Item	Description
<b>LASTOBSERVER</b>	The login ID of the last agent that service-observed or bridged on to this call.
<b>MALICIOUS</b>	Was malicious call trace activated for this call segment (YES/NO)? This database item applies to Generic 2, Generic 3, but not Generic 3i Version 1.
<b>OBSERVINGCALL</b>	Whether this call represents an agent observing or bridging on to an existing call (YES/NO).
<b>ORIGLOGIN</b>	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.
<b>ROW_DATE (index)</b>	The date the call started.
<b>ROW_TIME</b>	The start time for this call segment.
<b>SEGMENT</b>	The number identifying the segment. Segment numbers are from 1 up to the number of segments in the call.
<b>SEGSTART</b>	<i>UNIX</i> time and date when the segment started. ( <i>UNIX</i> time and date is the number of seconds since midnight, 01/01/70.) Segments start when 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.)
<b>SEGSTOP</b>	<i>UNIX</i> time and date when the segment ended. A segment ends when all trunks and agents associated with the segment have dropped off the call. This means that after call work time for the agent is included when calculating the segment stop time.
<b>SEQNUM</b>	The unique sequence number for this call record.
<b>SPLIT1</b>	The first split/skill the call queued to in the first VDN with which it was associated.
<b>SPLIT2</b>	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 EAS and Generic 3 switches with multiple-split/skill queuing only.
<b>SPLIT3</b>	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.)
<b>TALKTIME</b>	Total talk time for the answering agent in this segment.
<b>TKGRP</b>	The number of the trunk group that carried the call. This will be zero if the trunk group carrying the call is not measured.

**Table A-14: Call Record Database Items (Contd)**

<b>Database Item</b>	<b>Description</b>
<b>TRANSFERRED</b>	Whether or not an answering agent initiated a transfer on this segment (YES/NO). For Generic 2.2 and Generic 3 switches, this is set for any call transferred. For System 85 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.

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## Exceptions Historical Database Items

In the following tables, the database item **EXTYPE** (or **REASON** for data collection exceptions table) list numerical values associated with exception types. These values are listed because CMS stores exception types with numerical values. CMS then translates these numbers into the text you see in your standard exception reports. To select specific exception types for a custom report, you must enter the numerical value(s) in your **select rows where:** statement.

## Agent Historical Exception Database Items

The Agent Historical Exception table name is `agex`.

**Table A-15: Agent Exception Database Items**

Database Item	Description																																																																
<b>ACD</b>	The ACD the agent was logged into.																																																																
<b>EXTYPE</b>	<p>The type of exception that occurred:</p> <p><b>Numerical</b></p> <table border="1"> <thead> <tr> <th>Value</th> <th>Type</th> </tr> </thead> <tbody> <tr><td>1</td><td>Time Available</td></tr> <tr><td>2</td><td>Time on inbound ACD call (min)</td></tr> <tr><td>3</td><td>Time on inbound ACD call (max)</td></tr> <tr><td>4</td><td>Time in after call work</td></tr> <tr><td>5</td><td>Time on outbound ACW call</td></tr> <tr><td>6</td><td>Time on inbound ACW call</td></tr> <tr><td>7</td><td>Time in AUX work</td></tr> <tr><td>8</td><td>Time on outbound AUX call</td></tr> <tr><td>9</td><td>Time on inbound AUX call</td></tr> <tr><td>10</td><td>Number of outbound ACW calls/agent</td></tr> <tr><td>11</td><td>Number of inbound ACW calls/agent</td></tr> <tr><td>12</td><td>Number of outbound AUX calls/agent</td></tr> <tr><td>13</td><td>Number of inbound AUX calls/agent</td></tr> <tr><td>14</td><td>Login identification</td></tr> <tr><td>15</td><td>Time ACD call spent on hold*</td></tr> <tr><td>16</td><td>Number ACD calls placed on hold*</td></tr> <tr><td>17</td><td>Number ACD calls abandoned while on hold*</td></tr> <tr><td>18</td><td>Time on outbound ACD call (min)</td></tr> <tr><td>19</td><td>Time on outbound ACD call (max)<sup>†</sup></td></tr> <tr><td>20</td><td>Number calls transferred**</td></tr> <tr><td>21</td><td>Time on external outbound ACW calls<sup>‡</sup></td></tr> <tr><td>22</td><td>Time on external outbound AUX call<sup>‡</sup></td></tr> <tr><td>23</td><td>Time on direct agent call<sup>‡</sup></td></tr> <tr><td>24</td><td>Number of external outbound ACW calls/agent**</td></tr> <tr><td>25</td><td>Number external outbound AUX calls/agent**</td></tr> <tr><td>26</td><td>Time ACD call spends ringing**</td></tr> <tr><td>27</td><td>Multiple logons</td></tr> <tr><td>30</td><td>Number calls in direct agent queue<sup>‡</sup></td></tr> <tr><td>31</td><td>Time call waited in direct agent queue<sup>‡</sup></td></tr> <tr><td>32</td><td>Number calls abandoned from direct agent queue<sup>‡</sup></td></tr> <tr><td>34</td><td>Number calls outflowed from direct agent queue<sup>‡</sup></td></tr> </tbody> </table>	Value	Type	1	Time Available	2	Time on inbound ACD call (min)	3	Time on inbound ACD call (max)	4	Time in after call work	5	Time on outbound ACW call	6	Time on inbound ACW call	7	Time in AUX work	8	Time on outbound AUX call	9	Time on inbound AUX call	10	Number of outbound ACW calls/agent	11	Number of inbound ACW calls/agent	12	Number of outbound AUX calls/agent	13	Number of inbound AUX calls/agent	14	Login identification	15	Time ACD call spent on hold*	16	Number ACD calls placed on hold*	17	Number ACD calls abandoned while on hold*	18	Time on outbound ACD call (min)	19	Time on outbound ACD call (max) <sup>†</sup>	20	Number calls transferred**	21	Time on external outbound ACW calls <sup>‡</sup>	22	Time on external outbound AUX call <sup>‡</sup>	23	Time on direct agent call <sup>‡</sup>	24	Number of external outbound ACW calls/agent**	25	Number external outbound AUX calls/agent**	26	Time ACD call spends ringing**	27	Multiple logons	30	Number calls in direct agent queue <sup>‡</sup>	31	Time call waited in direct agent queue <sup>‡</sup>	32	Number calls abandoned from direct agent queue <sup>‡</sup>	34	Number calls outflowed from direct agent queue <sup>‡</sup>
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<b>ROW_TIME</b>	The time at which the exception occurred.																																																																

**Table A-15: Agent Exception Database Items (Contd)**

Database Item	Description
<b>SPLIT</b>	The split or skill in which the agent was doing work when the exception occurred.
<b>THRESHOLD</b>	The limit, as a number of occurrences, administered for the exception type. An exception occurs when the agent's activity falls outside of that limit.
<b>TIME</b>	The limit, as a number of seconds, administered for timed exceptions types. An occurrence is logged against the threshold when the agent's activity falls outside of that limit.

- \* Available only on System 85 R2V4, Generic 2, and Generic 3.
- † Available only with Generic 2.2 switches that have the ASAI Gateway Interface feature and Generic 3 switches that have the ASAI feature.
- \*\* Available only with Generic 2.1 or later and Generic 3.
- ‡ Available only with Generic 3 switches that have the ASAI or EAS feature.

**Split/Skill  
Historical  
Exception  
Database Items**

The Split/Skill Historical Exception table name is `spex`.

**Table A-16: Split/Skill Exception Database Items**

Database Item	Description
<b>ACD</b>	The ACD of the split or skill.
<b>EXTYPE</b>	The type of exception that occurred: <b>Numerical Value      Type</b> 30    Number calls waiting 31    Time call has waited in queue 32    Number calls abandoned 33    Number intraflowed-in calls 34    Number intraflowed-out calls 35    Number interflowed-out calls 36    Number calls offered while queue full* 37    Number calls handled as backup† 38    Number calls transferred** 39    Average speed of answer (seconds)
<b>ROW_DATE</b>	The date on which the exception occurred.
<b>ROW_TIME</b>	The time at which the exception occurred.
<b>SPLIT</b>	The split or skill in which the exception occurred.
<b>THRESHOLD</b>	The limit, as a number of occurrences, administered for the exception type. An exception occurs when the split's/skill's activity falls outside of that limit.
<b>TIME</b>	The limit, as a number of seconds, administered for timed exceptions types. An occurrence is logged against the threshold when the split's/skill's activity falls outside of that limit.

- \* Available only on System 85 R2V4, Generic 2, and Generic 3.
- † Available only with Generic 2.2 switches that have the ASAI Gateway Interface feature and Generic 3 switches that have the ASAI feature.
- \*\* Available only with Generic 2.1 or later and Generic 3.

## Trunk Group Historical Exception Database Items

The Trunk Group Historical Exception table name is `tgex`.

**Table A-17: Trunk Group Exception Database Items**

Database Item	Description
<b>ACD</b>	The ACD of the trunk group.
<b>EXTYPE</b>	The type of exception that occurred: <b>Numerical Value            Type</b> 50    Time trunk in use (min) 51    Time trunk in use (max) 52    Number of trunks in use 53    Time any trunk maintenance busy 54    Number of trunks maintenance busy 55    Length of time all trunks busy 56    Number of trunk failures in group 57    Number of failures on a single trunk 58    Audio difficulty on a trunk
<b>EQLOC</b>	The trunk location where the exception occurred.
<b>LOGID</b>	The login ID of the agent reporting audio difficulty.
<b>ROW_DATE</b>	The date on which the exception occurred.
<b>ROW_TIME</b>	The time at which the exception occurred.
<b>THRESHOLD</b>	The limit, as a number of occurrences, administered for the exception type. An exception occurs when the trunk group's activity falls outside of that limit.
<b>TIME</b>	The limit, as a number of seconds, administered for timed exceptions types. An occurrence is logged against the threshold when the trunk group's activity falls outside of that limit.
<b>TRKGRP</b>	The number of the trunk group where the exception occurred.

## VDN Historical Exception Database Items

The VDN Historical Exception table name is `vdnex`. VDN exceptions are available only with the Vectoring feature.

**Table A-18: VDN Exception Database Items**

Database Item	Description																												
<b>ACD</b>	The ACD of the VDN.																												
<b>EXTYPE</b>	<p>The type of exception that occurred:</p> <table border="1"> <thead> <tr> <th>Numerical Value</th> <th>Type</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>Time at agent (min)</td> </tr> <tr> <td>3</td> <td>Time at agent (max)</td> </tr> <tr> <td>30</td> <td>Number calls in an ACD split/skill queue</td> </tr> <tr> <td>32</td> <td>Number calls abandoned while in vector</td> </tr> <tr> <td>33</td> <td>Number calls that flowed into VDN</td> </tr> <tr> <td>34</td> <td>Number calls that flowed out of VDN</td> </tr> <tr> <td>35</td> <td>Number calls interflowed out of VDN</td> </tr> <tr> <td>37</td> <td>Number calls handled by backup split/skill</td> </tr> <tr> <td>71</td> <td>Time in vector (max)</td> </tr> <tr> <td>72</td> <td>Number calls forced busy</td> </tr> <tr> <td>73</td> <td>Number calls disconnected</td> </tr> <tr> <td>74</td> <td>Number unsuccessful look-ahead interflow attempts</td> </tr> <tr> <td>75</td> <td>Adjunct routing</td> </tr> </tbody> </table>	Numerical Value	Type	2	Time at agent (min)	3	Time at agent (max)	30	Number calls in an ACD split/skill queue	32	Number calls abandoned while in vector	33	Number calls that flowed into VDN	34	Number calls that flowed out of VDN	35	Number calls interflowed out of VDN	37	Number calls handled by backup split/skill	71	Time in vector (max)	72	Number calls forced busy	73	Number calls disconnected	74	Number unsuccessful look-ahead interflow attempts	75	Adjunct routing
Numerical Value	Type																												
2	Time at agent (min)																												
3	Time at agent (max)																												
30	Number calls in an ACD split/skill queue																												
32	Number calls abandoned while in vector																												
33	Number calls that flowed into VDN																												
34	Number calls that flowed out of VDN																												
35	Number calls interflowed out of VDN																												
37	Number calls handled by backup split/skill																												
71	Time in vector (max)																												
72	Number calls forced busy																												
73	Number calls disconnected																												
74	Number unsuccessful look-ahead interflow attempts																												
75	Adjunct routing																												
<b>ROW_DATE</b>	The date on which the exception occurred.																												
<b>ROW_TIME</b>	The time at which the exception occurred.																												
<b>THRESHOLD</b>	The limit, as a number of occurrences, administered for the exception type. An exception occurs when the VDN activity falls outside of that limit.																												
<b>TIME</b>	The limit, as a number of seconds, administered for timed exceptions types. An occurrence is logged against the threshold when the VDN activity falls outside of that limit.																												
<b>VDN</b>	The VDN for which the exception occurred.																												
<b>VECTOR</b>	The vector number associated with the exception.																												

## Vector Historical Exception Database Items

The Vector Historical Exception table name is `vecex`. Vector exceptions are available only with the Vectoring feature.

**Table A-19: Vector Exception Database Items**

Database Item	Description														
<b>ACD</b>	The ACD of the vector.														
<b>EXTYPE</b>	The type of exception that occurred: <table border="1"> <thead> <tr> <th>Numerical Value</th> <th>Type</th> </tr> </thead> <tbody> <tr> <td>30</td> <td>Number calls in an ACD split/skill queue</td> </tr> <tr> <td>72</td> <td>Number calls forced busy</td> </tr> <tr> <td>73</td> <td>Number calls disconnected</td> </tr> <tr> <td>74</td> <td>Number unsuccessful look-ahead interflow attempts</td> </tr> <tr> <td>80</td> <td>Time in vector (min)</td> </tr> <tr> <td>81</td> <td>Time in vector (max)</td> </tr> </tbody> </table>	Numerical Value	Type	30	Number calls in an ACD split/skill queue	72	Number calls forced busy	73	Number calls disconnected	74	Number unsuccessful look-ahead interflow attempts	80	Time in vector (min)	81	Time in vector (max)
Numerical Value	Type														
30	Number calls in an ACD split/skill queue														
72	Number calls forced busy														
73	Number calls disconnected														
74	Number unsuccessful look-ahead interflow attempts														
80	Time in vector (min)														
81	Time in vector (max)														
<b>ROW_DATE</b>	The date on which the exception occurred.														
<b>ROW_TIME</b>	The time at which the exception occurred.														
<b>THRESHOLD</b>	The limit, as a number of occurrences, administered for the exception type. An exception occurs when the vector activity falls outside of that limit.														
<b>TIME</b>	The limit, as a number of seconds, administered for timed exceptions types. An occurrence is logged against the threshold when the vector activity falls outside of that limit.														
<b>VECTOR</b>	The vector number for which the exception occurred.														

## Malicious Call Trace Historical Exception Database Items

The Malicious Call Trace Historical Exception table name is `mctex`.

**Table A-20: Malicious Exception Database Items**

Database Item	Description				
<b>ACD</b>	The ACD on which the malicious call was recorded.				
<b>ANI_SID</b>	The billing number or phone number from which the malicious call originated (available only if the switch has ANI/SID service).				
<b>EQLOC</b>	The location of the trunk that carried the malicious call.				
<b>EXTYPE</b>	The type of exception that occurred: <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Numerical Value</th> <th>Type</th> </tr> </thead> <tbody> <tr> <td>90</td> <td>Malicious cal</td> </tr> </tbody> </table>	Numerical Value	Type	90	Malicious cal
Numerical Value	Type				
90	Malicious cal				
<b>LOGID</b>	The login ID of the agent reporting the malicious call.				
<b>ROW_DATE</b>	The date on which the malicious call was reported.				
<b>ROW_TIME</b>	The time at which the malicious call was reported.				
<b>SPLIT</b>	The split/skill of the agent reporting the malicious call.				
<b>TKGRP</b>	The number of the trunk group that carried the malicious call.				
<b>VDN</b>	The VDN that carried the malicious call. This database item is only available with 85 R2V4, Generic 2, and Generic 3 switches that have the Call Vectoring feature.				

**Data Collection  
Historical  
Exception  
Database Items**

The Data Collection Historical Exception table name is `linkex`.

**Table A-21: Data Collection Exception Database Items**

Database Item	Description
<b>ACD</b>	The ACD for which data collection was interrupted.
<b>DURATION</b>	The length of time for which data collection was off.
<b>REASON</b>	The reason for the interruption of data collection. The reasons may be as follows: <b>Numerical Value Reason</b> 91 Data collection started 92 Data collection of new translations started 93 Data collection turned off 94 Data collection busied out 95 Data collection timed out 96 Data collection clock was reset 97 Data collection session down
<b>ROW_DATE</b>	The date on which data collection was interrupted.
<b>ROW_TIME</b>	The time at which data collection was interrupted.

**State Names and  
Row Search  
Values Cross-  
Reference**

**Table A-22: State Names and Row Search Values Cross-Reference**

<b>Status Database Items</b>	<b>State Names</b>	<b>Numerical Values for Row Search</b>
<b>WORKMODE</b>	UNKNOWN	0
	UNSTAF	10
	AVAIL	20
	ACD	30
	ACW	40
	AUX	50
	DACD	60
	DACW	70
	OTHER	220
	RING	80
	LOGON	100
	LOGOFF	110
	TRACE ON	120
	TRACE OFF	121
<b>AG_DIR</b>	OUT	1
	IN	2
<b>AG_DEST</b>	PBX	1
	OFF	2
<b>AG_ORIG</b>	BLANK	0
	PHONE	1
	KEYBOARD	2
<b>TKSTATE</b>	UNKNOWN	0
	IDLE	1
	SEIZED	2
	QUEUED	3
	CONN	4
	DABN	5
	MBUSY	6
	FBUSY	7
	FDISC	8
	HOLD	9
RING	80	
<b>ALL_BUSY</b>	YES	1
	NO	0
<b>TK_DIR</b>	IN	2
	OUT	1
<b>TK_QTYPE</b>	MAIN	1
	BACKUP	2

**Table A-22: State Names and Row Search Values Cross-Reference**

Status Database Items	State Names	Numerical Values for Row Search
TK_PRI	YES	1
	NO	0
PER_CHG	YES	1
	NO	0
SLVL_CHG	YES	1
	NO	0

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**Call Disposition  
and Row Search  
Values Cross-  
Reference**

**Table A-23: Call Disposition and Row Search Values Cross-Reference**

Status Database Items	State Names	Numerical Values for Row Search
DISPOSITION	CONN	1
	ANS	2
	ABAN	3
	IFLOW	4
	FBUSY	5
	FDISC	6
	OTHER	7

# Standard Dictionary Calculations

Calculation Name	Calculation	Description
AGENTS_ON_EXT_CALLS	(ONACWIN + ONAUXIN + ONACWOUT + ONAUXOUT)	Agents on extension calls
AVG_ABANDON_TIME	ABNTIME / ABNCALLS	Average time to abandon
AVG_ABANDON_TIME_SUM	sum(ABNTIME) / sum(ABNCALLS)	Total average abandon time
AVG_ACD_TALK_TIME	ACDTIME / ACDCALLS	Average ACD talk time
AVG_ACD_TALK_TIM_SUM	(sum(ACDTIME) / sum(ACDCALLS))	Total average ACD talk time
AVG_ACW_TIME	ACWTIME / ACDCALLS	Average ACW time
AVG_ACW_TIME_SUM	sum(ACWTIME) / sum(ACDCALLS)	Total average ACW time
AVG_AGENT_ACW_SUM	sum(TOTAL_ACWTIME) / sum(TOTAL_ACDCALLS)	Total average agent ACW time
AVG_AGENT_ACW_TIME	TOTAL_ACWTIME / TOTAL_ACDCALLS	Average ACW time
AVG_AGENT_TALK_SUM	sum(TOTAL_ACDTIME) / sum(TOTAL_ACDCALLS)	Total average agent ACD talk time
AVG_AGENT_TALK_TIME	TOTAL_ACDTIME / TOTAL_ACDCALLS	Average agent ACD talk time
AVG_ANSWER_SPEED	ANSTIME / ACDCALLS	Average speed of answer
AVG_ANSWER_SPEED_SUM	sum(ANSTIME) / sum(ACDCALLS)	Total average answer speed
AVG_CONNECT_TIME	CONNECTTIME / CONNECTCALLS	Average amount of time for call to connect to agent
AVG_CONNECT_TIME_SUM	sum(CONNECTTIME) / sum(CONNECTCALLS)	Total average amount of time for call to connect to agent
AVG_HOLD_TIME	HOLDTIME / HOLDCALLS	Average hold time
AVG_HOLD_TIME_SUM	sum(HOLDTIME) / sum(HOLDCALLS)	Total average hold time
AVG_INB_ACD_TIME_SUM	(sum(TOTAL_ACDTIME-O_ACDTIME)) / INBOUND_ACDCALLS	Average inbound ACD time
AVG_INB_ACW_TIME_SUM	(sum(TOTAL_ACWTIME-O_ACWTIME))/ INBOUND_ACDCALLS	Average inbound ACW time
AVG_OUTB_ACD_SUM	sum(O_ACDTIME) / sum(O_ACDCALLS)	Total outbound average ACD talk time
AVG_OUTB_ACD_TIME	O_ACDTIME / O_ACDCALLS	Outbound average ACD talk time
AVG_OUTB_ACW_SUM	sum(O_ACWTIME) / sum(O_ACDCALLS)	Total outbound average ACW talk time
AVG_OUTB_ACW_TIME	O_ACWTIME / O_ACDCALLS	Outbound average ACW talk time
AVG_POS_STAFF	I_STAFFTIME / (INTRVL * 60)	Average positions staffed

**Standard Dictionary Calculations**

<b>Calculation Name</b>	<b>Calculation</b>	<b>Description</b>
AVG_POS_STAFF_SUM	$\text{sum}(I\_STAFFTIME) / \text{sum}(INTRVL * 60)$	Average positions staffed total
AVG_TALK_TIME_IN	$(ACWINTIME + AUXINTIME) / (ACWINCALLS + AUXINCALLS)$	Extension in calls average talk time
AVG_TALK_TIME_IN_SUM	$\text{sum}(ACWINTIME + AUXINTIME) / \text{sum}(ACWINCALLS + AUXINCALLS)$	Extension in calls total average talk time
AVG_TALK_TIME_OUT	$(ACWOUTTIME + AUXOUTTIME) / (ACWOUTCALLS + AUXOUTCALLS)$	Extension out calls average talk time
AVG_TALK_TIM_OUT_SUM	$\text{sum}(ACWOUTTIME + AUXOUTTIME) / \text{sum}(ACWOUTCALLS + AUXOUTCALLS)$	Extension out calls total average talk time
AVG_TRK_HOLD_IN_SUM	$\text{sum}(INTIME) / \text{sum}(INCALLS)$	Inbound total average trunk holding time
AVG_TRK_HOLD_OUT_SUM	$\text{sum}(OUTTIME) / \text{sum}(OUTCALLS)$	Outbound total average trunk holding time
AVG_TRK_HOLD_TIME	$(INTIME + OUTTIME) / (INCALLS + OUTCALLS)$	Average trunk holding time
AVG_TRK_HOLD_TIME_IN	$INTIME / INCALLS$	Inbound average trunk holding time
AVG_TRK_HOLD_TIM_OUT	$OUTTIME / OUTCALLS$	Outbound average trunk holding time
AVG_VDN_TIME	$(INTIME / INCALLS)$	Average VDN time
AVG_VDN_TIME_SUM	$\text{sum}(INTIME) / \text{sum}(INCALLS)$	Average time in VDN total
AVG_VEC_TIME	$INTIME / INCALLS$	Average vector time
AVG_VEC_TIME_SUM	$\text{sum}(INTIME) / \text{sum}(INCALLS)$	Average vector time total
BUSY_DISCONNECT	$(BUSYCALLS + DISCCALLS)$	Number of calls that were busy and disconnected
CALLS_PER_POS	$(60 * INTRVL * ACDCALLS) / I\_STAFFTIME$	Calls per position
CALLS_PER_POS_SUM	$(\text{sum}(60 * INTRVL) * \text{sum}(ACDCALLS)) / \text{sum}(I\_STAFFTIME)$	Calls per position total
EXT_CALL_IN	$(ACWINCALLS + AUXINCALLS)$	Incoming extension calls
EXT_CALL_OUT	$(ACWOUTCALLS + AUXOUTCALLS)$	Outgoing extension calls
EXT_IN_TIME	$(I\_ACWINTIME + I\_AUXINTIME)$	Time on incoming extension calls
EXT_OUT_TIME	$(I\_ACWOUTTIME + I\_AUXOUTTIME)$	Time on outgoing extension calls
INBOUND_ACDCALLS	$(\text{sum}(TOTAL\_ACDCALLS - O\_ACDCALLS))$	Total inbound ACD calls
PERCENT_ACD_TIME	$100 * ((I\_ACDTIME + I\_ACWTIME) / I\_STAFFTIME)$	Percent ACD time

Calculation Name	Calculation	Description
PERCENT_ACD_TIME_SUM	$100 * (\text{sum}(\text{I\_ACD\_TIME} + \text{I\_ACW\_TIME}) / \text{sum}(\text{I\_STAFF\_TIME}))$	Percent ACD time total
PERCENT_ALL_BUSY	$100 * (\text{ALLINUSETIME} / \text{SECS\_PER\_DAY})$	Percentage of time all trunks in use
PERCENT_ALL_BUSY_D	$100 * (\text{ALLINUSETIME} / \text{d\_secs.SECSPERDAY})$	Percentage of time all trunks in use in the day
PERCENT_ALL_BUSY_M	$100 * (\text{ALLINUSETIME} / \text{m\_secs.SECSPERMN})$	Percentage of time all trunks in use in the month
PERCENT_ALL_BUSY_W	$100 * (\text{ALLINUSETIME} / \text{w\_secs.SECSPERWK})$	Percentage of time all trunks in use in the week
PERCENT_ALL_BUSY_SUM	$100 * (\text{sum}(\text{ALLINUSETIME}) / \text{sum}(\text{SECS\_PER\_DAY}))$	Percentage of time all trunks in use
PERCENT_AL_BSY_SUM_D	$100 * (\text{sum}(\text{ALLINUSETIME}) / \text{sum}(\text{d\_secs.SECSPERDAY}))$	Percentage of time all trunks in use in the day
PERCENT_AL_BSY_SUM_M	$100 * (\text{sum}(\text{ALLINUSETIME}) / \text{sum}(\text{m\_secs.SECSPERMN}))$	Percentage of time all trunks in use in the month
PERCENT_AL_BSY_SUM_W	$100 * (\text{sum}(\text{ALLINUSETIME}) / \text{sum}(\text{w\_secs.SECSPERWK}))$	Percentage of time all trunks in use in the week
PERCENT_AUX_WORK	$100 * (\text{I\_AUX\_TIME} / \text{I\_STAFF\_TIME})$	Percent AUX time
PERCENT_AUX_WORK_SUM	$100 * (\text{sum}(\text{I\_AUX\_TIME}) / \text{sum}(\text{I\_STAFF\_TIME}))$	Total percent AUX time
PERCENT_CALL_ABAN	$100 * (\text{ABNCALLS} / (\text{CALLSOFFERED}))$	Percentage of calls abandoned
PERCENT_CALL_ANS	$100 * (\text{ACDCALLS} / \text{CALLSOFFERED})$	Percentage of calls offered that were answered
PERCENT_CALL_ANS_SUM	$100 * (\text{sum}(\text{ACDCALLS}) / \text{sum}(\text{CALLSOFFERED}))$	Total percent of calls offered that were answered
PERCENT_MBUSY	$100 * (\text{MBUSYTIME} / (\text{SECS\_PER\_DAY} * \text{TRUNKS}))$	Percent of time all trunks in use
PERCENT_MBUSY_D	$100 * (\text{MBUSYTIME} / (\text{d\_secs.SECSPERDAY} * \text{TRUNKS}))$	Percent of time all trunks busied-out in the day
PERCENT_MBUSY_M	$100 * (\text{MBUSYTIME} / (\text{m\_secs.SECSPERMN} * \text{TRUNKS}))$	Percent of time all trunks busied-out in the month
PERCENT_MBUSY_W	$100 * (\text{MBUSYTIME} / (\text{w\_secs.SECSPERWK} * \text{TRUNKS}))$	Percent of time all trunks busied-out in the week
PERCENT_MBUSY_SUM_D	$100 * (\text{sum}(\text{MBUSYTIME}) / (\text{avg}(\text{d\_secs.SECSPERDAY}) * \text{sum}(\text{TRUNKS})))$	Percent of time all trunks busied-out in the day
PERCENT_MBUSY_SUM_M	$100 * (\text{sum}(\text{MBUSYTIME}) / (\text{avg}(\text{m\_secs.SECSPERMN}) * \text{sum}(\text{TRUNKS})))$	Percent of time all trunks busied-out in the month

## Standard Dictionary Calculations

Calculation Name	Calculation	Description
PERCENT_MBUSY_SUM_W	$100 * (\text{sum}(\text{MBUSYTIME}) / (\text{avg}(\text{w\_secs}.\text{SECSPERWK}) * \text{TRUNKS}))$	Percent of time all trunks busied-out in the week
PERCENT_MBUSY_SUM	$100 * (\text{sum}(\text{MBUSYTIME}) / (\text{avg}(\text{SECS\_PER\_DAY}) * \text{sum}(\text{TRUNKS})))$	Percent time all trunks in use
PERCENT_SERV_LVL_SPL	$100 * (\text{ACCEPTABLE} / \text{CALLSOFFERED})$	Percent of calls answered in service level for split
PERCENT_SERV_LVL_VDN	$100 * (\text{sum}(\text{ACCEPTABLE}) / \text{sum}(\text{INCALLS}))$	Percent of calls answered within service level for VDN
PERCENT_SLVL_SPL_SUM	$100 * (\text{sum}(\text{ACCEPTABLE}) / \text{sum}(\text{CALLSOFFERED}))$	Percent of total split calls answered in service level
PERCENT_VDN_ABAN	$100 * (\text{sum}(\text{ABNCALLS}) / \text{sum}(\text{INCALLS}))$	Percent of calls abandoned
PERCENT_VDN_ANSCONN	$100 * (\text{sum}(\text{ACDCALLS} + \text{CONNECTCALLS}) / \text{sum}(\text{INCALLS}))$	Percent of calls answered in service level
SECS_PER_DAY	$(24 * 60 * 60)$	Seconds per day
TOTAL_ACDCALLS	$(\text{ACDCALLS} + \text{DA\_ACDCALLS})$	Total ACD calls
TOTAL_ACDTIME	$(\text{ACDTIME} + \text{DA\_ACDTIME})$	Total ACD time
TOTAL_ACWTIME	$(\text{ACWTIME} + \text{DA\_ACWTIME})$	Total ACW time
TOTAL_I_ACDTIME	$(\text{I\_ACDTIME} + \text{I\_DA\_ACDTIME})$	Total interval-based ACD time
TOTAL_I_ACWTIME	$(\text{I\_ACWTIME} + \text{I\_DA\_ACWTIME})$	Total interval-based ACW time

# Glossary

<b>Access</b>	For Custom Reports, the type of permissions users will have to run a custom report or to copy, change, and/or delete a custom report design. Access can be private or global.
<b>Administrator, CMS</b>	A CMS user who has permissions for most or all parts of CMS. In Custom Reports, a CMS administrator can access the designs of all custom reports, even those of which the administrator is not the owner.
<b>Aggregate function</b>	A prefix (avg, max, min, or sum) attached to a database item, calculation, parts of a calculation, or a calculation name. An aggregate function normally displays a single value that is determined from a group of selected values.
<b>Ascending</b>	Listed with the lowest values first and the highest values last. With time and dates, the oldest values are listed first.
<b>Associated ACD</b>	The ACD associated (or assigned to) an input field, as defined in the Define Input window. When an input field is associated with an ACD, the values the user enters into the field will apply to that ACD only. For example, if an input field requiring a split number also has associated ACD #1, the selected split number will be a split in ACD #1.
<b>Bar</b>	A representation of data in the form of a bar that gets longer or shorter as values go up or down. A horizontal bar grows and shrinks horizontally. A vertical bar grows and shrinks vertically.
<b>Block</b>	A rectangular area on the Screen Painter that you define and use to quickly rearrange report fields, bars, and text.
<b>Block editing</b>	Defining and using a block to copy, move, or delete fields, bars, and text in a report design.

<b>Calculation</b>	A formula consisting of database items, numbers, and arithmetic operators (+, -, /, *, and ( )). A calculation can also include constants.
<b>Calculation name</b>	A name for a calculation, either a standard CMS calculation name or a name that you define in Dictionary. A calculation name can be useful if you need to use the same calculation for field/bar definitions in multiple custom reports. Then, if you need to change the calculation, you can change it once in Dictionary, and all custom reports that use the calculation name will reflect the change.
<b>Column</b>	A column is a part of a table that stores a particular type of data (a number of events of a certain type, a length of time spent on a certain type of event, the time an event happened, a numerical identifier of an ACD entity, or the current status of an ACD entity). Database items are the names of columns. Examples are <b>ACDCALLS</b> , <b>ACDTIME</b> , <b>LOGID</b> , <b>SPLIT</b> , <b>STARTTIME</b> , <b>WORKMODE</b> , and so on.
<b>Constant</b>	A name you assign in Dictionary to a fixed numerical value. A constant can be useful if you need to use the same numerical value for field/bar definitions in multiple custom reports. Then, if you need to change the value, you can change it once in Dictionary, and all custom reports that use the constant will reflect the change.
<b>Count(*)</b>	An expression you can enter in the <code>select</code> field in the Field or Bar Window. <code>count(*)</code> tells CMS to count the number of rows in a table that match certain row search conditions (as defined for the assigned Row Search ID) and display the total in the field/bar.
<b>Custom database item</b>	A database item (column name) which you have included in a custom INFORMIX table and which you have identified to CMS in Dictionary.
<b>Custom report</b>	A report that you create and design using the Custom Reports subsystem.
<b>Data expression</b>	An expression you enter in the <code>select</code> field of the Field or Bar window to define the data and manipulation of that data for display in a field or bar.

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<b>Database</b>	The system of storage for your ACD data. The CMS database stores data in real-time and historical tables.
<b>Database item</b>	The name of a column in a database table. A database item may store data as a number of events of certain type, a length of time spent on a certain type of event, the time an event happened, a numerical identifier of an ACD entity, or the current status of an ACD entity. Examples are <b>ACDCALLS</b> , <b>ACDTIME</b> , <b>LOGID</b> , <b>SPLIT</b> , <b>STARTTIME</b> , <b>WORKMODE</b> , and so on.
<b>Define Input Window</b>	The secondary window you access on the Screen Painter to define fields for the report's Report Input window.
<b>Descending</b>	Listed with the highest values first and the lowest values last. With time and dates, the most recent values are listed first.
<b>Design</b>	The physical layout of a custom report, as well as the definition of the report's fields, bars, input window, and row search criteria.
<b>Direction (Bar)</b>	The direction in which a bar grows and shrinks — either horizontally or vertically.
<b>Discrete field/bar</b>	A field or bar for which a single value will be found and displayed.
<b>Field</b>	A space designated in a custom report to display a specifically-defined piece of ACD data. Data is displayed in a field as characters in specific format (that is, as time with am/pm, as a decimal, as a date, and so on).
<b>First threshold</b>	The threshold that is normally associated with notification of a caution condition, such that if the value for the bar is at or above the threshold, the bar will change from a normal color to a caution color. If thresholds are reversed, however, the bar will be a caution color when the value is above the first threshold, but will change to a warning color when the value drops <b>below</b> the threshold.
<b>Global access</b>	The ability for other CMS users to run a custom report and to copy its design on the Screen Painter.

<b>Historical</b>	Pertaining to data that is at least one intrahour interval old and has been stored on disk for later retrieval in reports.
<b>INFORMIX</b>	The relational database software that works with CMS to manage the database. You can create custom historical data tables in INFORMIX and retrieve data from them for display in custom reports.
<b>Index</b>	A column (database item) that causes the values in a row to be related. For example, in the Current Interval Split table, <code>SPLIT</code> is an index. An index adds structure to the data in a table.
<b>Input field (for a report)</b>	A field that appears on a report input window so the user can specify what data the report will display. You can define input fields for a custom report via the Define Input Window, which is a secondary window accessed on the Screen Painter.
<b>Input window</b>	The window that appears when you are running a report so you can specify what data (what split, what agent(s), what times, what date(s), and so on) the report will display.
<b>Justification</b>	The lining up of data for a field such that in the report, the data is always centered, lined up on the left, or lined up on the right.
<b>Maximum graph value</b>	The value that a bar will represent when it is at its maximum length or height.
<b>Normal user</b>	A user that normally has access to a limited number of subsystems within CMS. A normal user <b>cannot</b> access a custom report design created by another user and can neither run nor copy the private reports of another user.
<b>Owner</b>	The CMS user who created the design of a custom report.
<b>Pattern matching</b>	Searching the database for data that partly or totally matches a set of characters (letters, numbers, and symbols) entered by a user. For example, the user may enter <code>*01*</code> , and CMS might find the following types of matching data: <code>0001</code> , <code>split01</code> , <code>22010</code> , or <code>01444</code> .

<b>Private access</b>	The restriction that only the owner of a custom report can run the report. Also, no other normal user can copy the report's design. Private access does <b>not</b> restrict CMS administrators from running a private report or accessing its design.
<b>Prompt</b>	The text that appears in a report input window to tell the user what type of data to type in an input field.
<b>Real-time</b>	Pertaining to data that is stored in real-time memory. Real-time data is data that applies to the current intrahour interval or the previous intrahour interval. Data for the previous intrahour interval is stored in real-time memory so that you can include it with current real-time data in a custom report.
<b>Repeated horizontally</b>	The specification that multiple values will be found for a field/bar and that the values will be displayed in a vertical series of fields or bars.
<b>Repeated vertically</b>	The specification that multiple values will be found for a field/bar and that the values will be displayed in a horizontal series of fields or bars.
<b>Report type</b>	The specification of a custom report as either a real-time or historical report.
<b>Reversed thresholds</b>	The reversal of thresholds so that the bar has the color of normal conditions when it is at its longest. With reversed thresholds, the bar will change from normal to caution to warning as the bar shrinks in length.
<b>Row</b>	A single horizontal line of data in a table. The data is related by the value(s) of one or more columns. For example, each row of current real-time agent data contains data for a specific agent login ID.
<b>Row search ID</b>	The identification number of a set of row search conditions defined in the Row Search Window. This number is assigned to fields/bars that will use the associated set of row search conditions. You can define up to 10 different sets of row search conditions. Therefore, the available row search IDs are 0 to 9.

<b>Row search window</b>	The secondary window accessed on the Screen Painter that you use to define row search criteria and assign row search criteria to fields/bars.
<b>Scale</b>	A line, with or without tick marks, that appears in a custom report to provide a reference point for the approximate value of a bar as it changes length.
<b>Screen Painter</b>	The window that you use to design custom reports. The Screen Painter has special properties that make its operation different from that of other windows.
<b>Second threshold</b>	The threshold that is normally associated with notification of a warning condition, such that if the value for the bar is at or above the threshold, the bar will change from a caution color to a warning color. If thresholds are reversed, however, the bar will be a <b>normal</b> color when the value is above the second threshold, but will change to a caution color when the value drops <b>below</b> the threshold.
<b>Secondary window</b>	An administration window that pops up when you select an action list option on another window. The purpose of a secondary window is always related to the purpose of the original (or primary) window. The Screen Painter has many secondary windows that can pop up.
<b>Select</b>	The name of the first field in the Field and Bar windows. You enter the data expression you want for a report field/bar in the <code>select</code> field.
<b>Select rows where statement</b>	The row search criteria CMS uses to retrieve data from the database. <code>select rows where</code> statements typically consist of several “where” clauses.
<b>Sort order</b>	The order in which you want data to appear in a custom report. The sort order is always based on the values of one or more database items. Real-time reports allow the use of only one database item for sorting.
<b>Sort type</b>	The order, ascending or descending, in which data should be displayed.

<b>Standard database item</b>	A database item (column name) for a column in a standard CMS table. Standard database items are listed in Dictionary (and Appendix A). They cannot be changed or removed from Dictionary.
<b>String (Data format)</b>	A report field that displays data from a CHAR column. CHAR columns, which store data as character strings, include LOGID, VDN, and CWC.
<b>String (Input field)</b>	An input field type that allows users to type character strings and pattern searches when running the report. Any input field that has the “string” field type must be associated in the Row Search Window with a database item or table column that is a CHAR column. This includes LOGID, VDN, CWC, and other database items.
<b>Synonym</b>	A name defined in Dictionary that appears in reports instead of numbers (which are actually stored in the database). Split names, agent names, VDN names, names of agent states (ACD, ACW, AUX), and so on are synonyms. <b>synonym</b> is one field type you can select when defining report fields. This type tells CMS to substitute names for numbers in the report after it finds the appropriate data in the database.
<b>Table</b>	An array of columns and rows that stores data for a type of ACD element (split, agent, trunk, and so on) and for a specific time frame (for the current intrahour interval, for past intrahour intervals, for past days, and so on).
<b>Text</b>	The words, numbers, and other characters you type directly onto the Screen Painter to provide report titles, column headers, row identifiers, and other labels.
<b>Threshold</b>	A value at or above which CMS indicates a change in condition — either to a caution (first threshold) or a warning (second threshold) condition. Thresholds only apply to bars in a report.
<b>Tick marks</b>	The marks on a scale defined for a bar in a report. Tick marks break a scale into segments to indicate increments of the bar's length relative to the maximum graph value.
<b>Type (Input field)</b>	The specification of how CMS is to validate a user's input values and format when ordering the report. That is, you can tell CMS to check for

numbers, character strings (names), times, dates, specific ACD configuration values (split numbers, login IDs, and so on), etc.

**Type (Report)**

The specification of whether a report is a real-time or historical report. You specify the type on the Report Select Window.

**User ID**

The identification that a user must enter to log into CMS. CMS links custom report designs to a user's user ID. That is, the owner of a report design is the user (identified by user ID) who created the design.

**Variable name**

The name assigned to a report input field that will allow the user to enter values and have those values used to find data for the report. The variable name links the row search criteria to the report input fields so that the user's input values become the basis of the search for data.

**Where clause**

An expression in the **select rows where** field that specifies values for a single database item or calculation. A "where" clause has the format **Expression Relational operator Value**. A row search criteria statement can consist of multiple "where" clauses.

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