Avaya CMS Supervisor

Release 15

Report Designer

January 2009

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Avaya Call Management System (CMS) Supervisor
Release 15
Report Designer

Contents

Preface

This section contains the following topics:

Purpose

Avaya Call Management System Supervisor Report Designer describes what you need to know to create new reports and to edit existing reports through Report Designer and Report Wizard.

Audience

This guide is intended primarily for those who use CMS Supervisor. You should use this guide as an information source for creating and modifying CMS Supervisor reports.

Reasons for reissue

This is the first issue of this document.

Documentation Web sites

All CMS documentation can be found at http://support.avaya.com/. New issues of CMS documentation will be placed on this Web site when available.

Use the following Web sites to view related support documentation:

- Information about Avaya products and service

  http://www.avaya.com
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  http://docs.sun.com

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Chapter 1: Report Wizard

This section describes the Report Wizard windows and provides an overview of the steps.

Organization of general information

This section contains the following general information:

Organization of procedures

Report Wizard contains the following procedures:

About the Report Wizard

This section includes the following topics:

What is Report Wizard?

Report Wizard is a supplement to Report Designer and is available only if you have purchased Report Designer. The Report Wizard feature delivers user assistance, by way of a wizard, to quickly and easily generate new customized reports. The wizard provides instructional help that guides you through a series of tasks that create a new customized report.

Report Wizard and Report Designer

All reports created with Report Wizard have the same designation and accessibility as those created in Report Designer.Thus, reports created by Report Wizard are referred to as Report Designer reports. This means that reports created by Report Wizard will be accessible only by Avaya Call Management System (CMS) Supervisor users.

Facts about Report Wizard

The following list provides general facts about Report Wizard:

- Report Wizard can access all database items and standard calculations.

  Although you can access all database items and standard calculations, you cannot create new calculations or link fields together with math functions by way of the Report Wizard. However, Report Designer allows you to create new calculations and link fields together with math functions for reports that you create in the Report Wizard.

- Report Wizard can create a report with charts and tables.

  With the Report Wizard you will be able to create a report that contains the following representations:

  - One or two charts

- One or two tables
- One chart and one table

To enter text or fields containing one data item, use Report Designer.

- Report Wizard does *not* display queries and database table names used to generate a report.

  If you need to see this type of information, use Report Designer.

- Report Wizard provides access to database item definitions.

  While in the **Select Data Items** page of the Report Wizard, you can view the definition of a database item or calculation.

- Report Wizard does *not* allow you to edit a completed report.

  Report Wizard is designed to create only new reports. To edit a completed report, use Report Designer.

- Report Wizard does *not* allow reentry.

  Report Wizard does not allow you to leave and then reenter to finish a partially-completed report. Use Report Designer to make changes to a report created and saved in Report Wizard.

Report Wizard command buttons

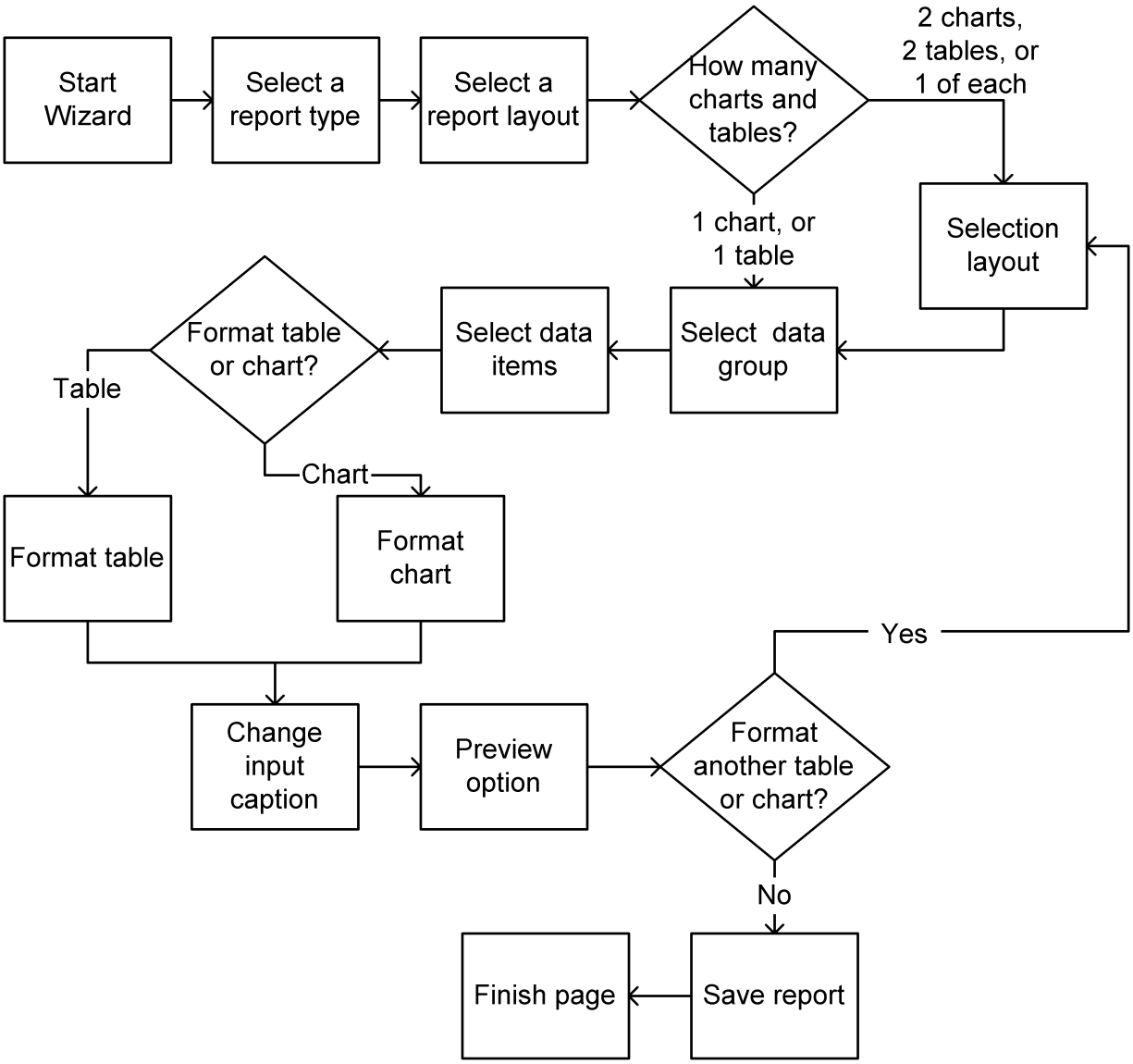
Each page of the Report Wizard contains command buttons to help you navigate through wizard and define your report. The following table provides an explanation of these command buttons.

Command button	Action
Back	Returns to the previous page. When you back up to previous pages, Report Wizard retains the values you entered unless you back up to a previous page and make changes that impact ensuing pages.
Next	Moves to the next page in the sequence, maintaining whatever settings you provided on the previous pages.
Finished	Applies your settings, or the default settings, from all pages and completes the task.
Cancel	Discards any selections you have made if you have not saved the report, terminates the process, and closes the Report Wizard. If you saved the report before you selected Cancel, the Report Wizard is closed; however, you will be able to run or edit the report in Report Designer.

Command button	Action
Help	Provides information about the page.
Data Item Definition	Provides a definition for the selected database item or calculation.
	Moves up one database item or calculation in the list of Selected Data Items.
	Moves down one database item or calculation in the list of Selected Data Items.
	Removes a database item or calculation from the Selected Data Items list.
	Adds a database item or calculation to the Selected Data Items list.
Edit Item Heading	Use to edit a database item heading.
Preview	Captures a screen shot of your report as it is currently defined.

Overview of Wizard steps

The following chart describes the steps Wizard takes you through.



Starting Report Wizard

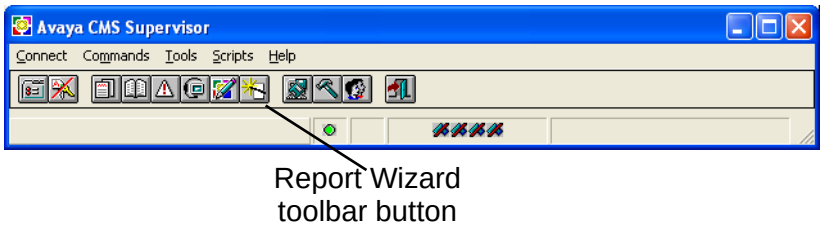
This section includes the following topics:

Before you begin

You can access Report Wizard only when Report Designer is activated on the Avaya Call Management System (CMS) server, and when you have the appropriate permissions to access Report Designer.

Starting with the toolbar icon

If you have purchased Report Designer, a toolbar icon will be displayed on the Controller window's toolbar.



To start with the toolbar icon:

1. Select the Report Wizard toolbar icon.

   The Report Wizard is displayed.

2. Select **Next** after you complete each page.

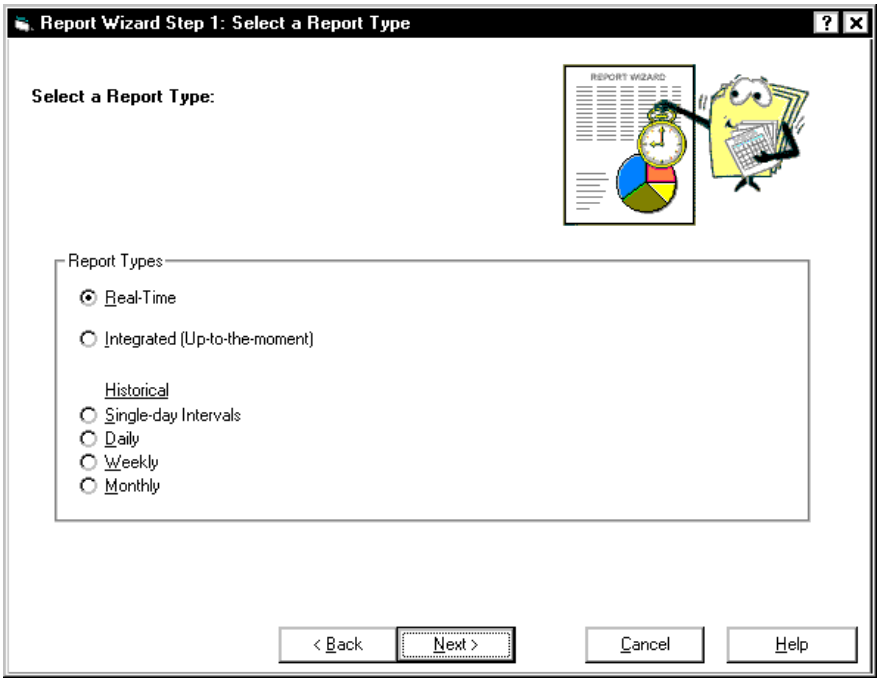
Related topics

For more information about each page, see any of the following topics:

The Select a Report Type page

Your first task is to select a report type. The report type determines whether the data in the report is real-time, integrated or historical. For example, if you select a real-time report, you will not be able to specify historical data in the report.

Example



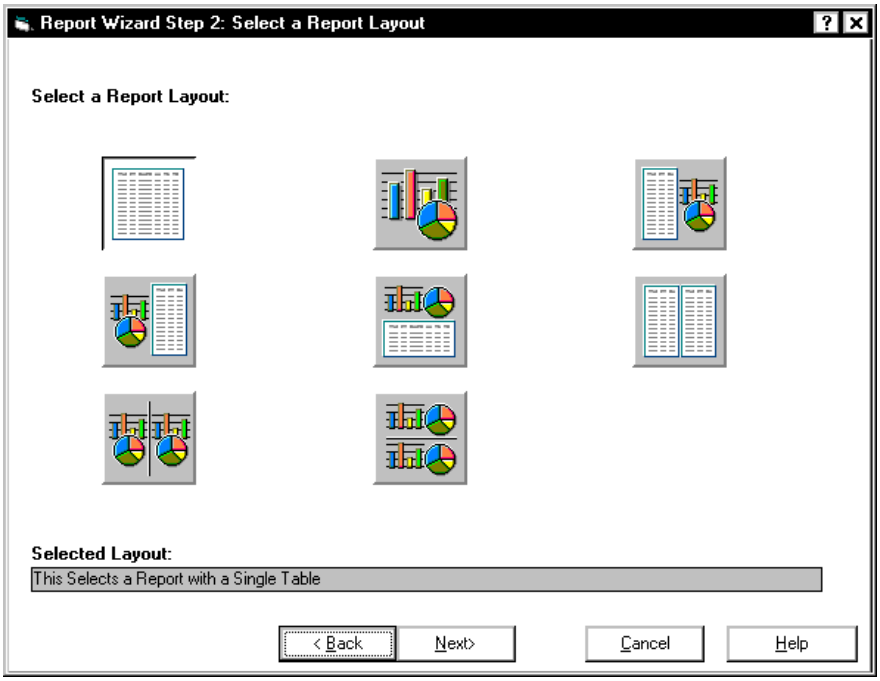
Types of reports

The following table provides information about each type of report.

Report	Description
Real-Time	Reports that refresh in real time. Real-time reports are reports that display current ACD call activity on agents, splits/skills, trunks, trunk groups, vectors, and vector directory numbers (VDNs) for the current interval (15, 30, or 60 minutes). Current intrahour interval real-time reports are periodically updated as data changes during the interval.
Integrated	Reports that refresh in real-time and show information that is accumulated from any point in time in the past 24 hours of ACD, agent, split/skill, trunk, trunk group, vector, and VDN activities.
Historical	Reports that give information tabulated over a period of time. Historical reports display past ACD data for various agent, split/skill, trunk, trunk group, vector, or VDN activities. You must select a historical report if you want to include the following data: • Exceptions • Call Work Code • Agent Trace • Call Record

The Select a Report Layout page

Your second task is to choose a report layout. The layout determines how your data will be represented in the report. Report layouts can be charts, tables, or both. Charts provide a graphical representation of data, and tables provide data in columns and rows. Select on the icon the represents the layout you want.

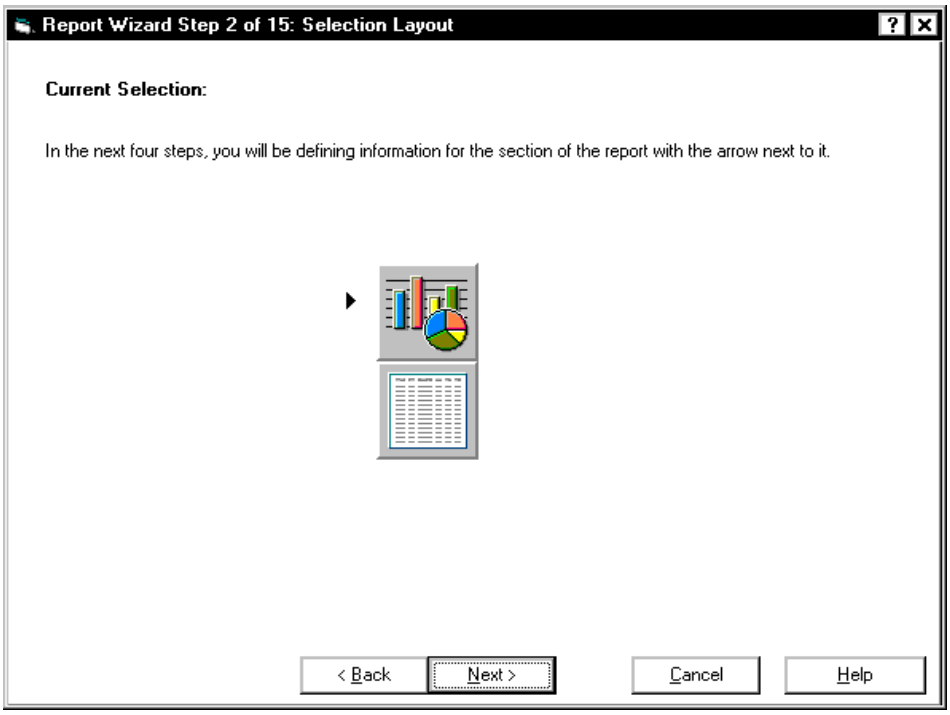


The Selection Layout page

The **Selection Layout** page lets you choose which section of the report you want to design.

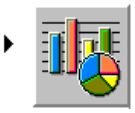
Report Wizard will take you to this page only if you selected a report layout that contains a table and a chart, two tables, or two charts.

Example



Defining sections

The following table describes the sections of the report.

Description	Example
A section that is pressed, with an arrow pointing to it, is the section you are about to define.	
A section that is not pressed, without an arrow, is the section you have not defined.	

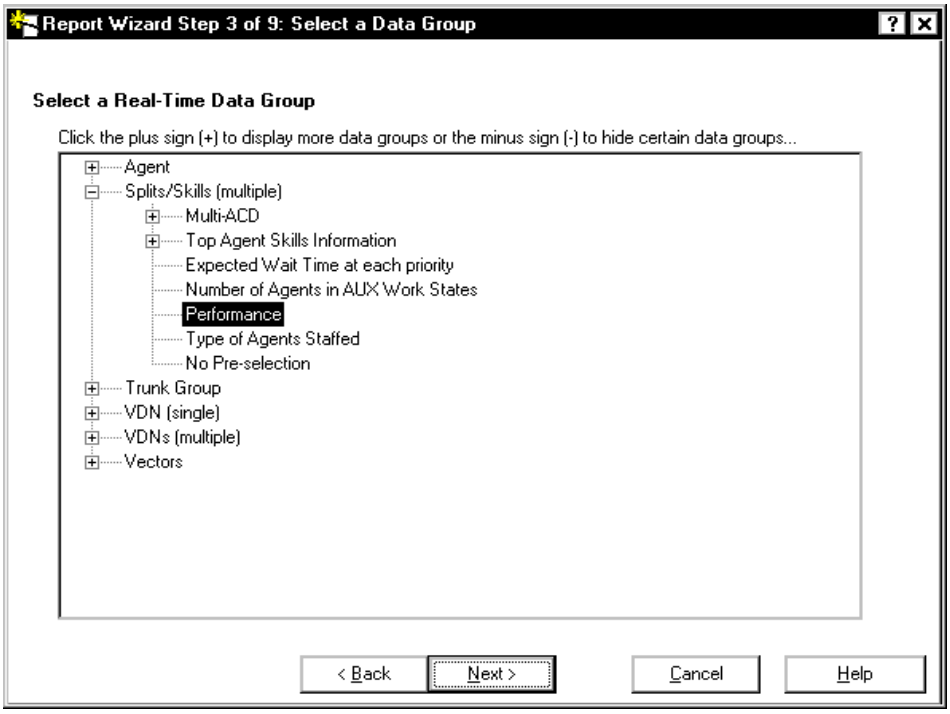
The Select a Data Group page

This section includes the following topics:

Use the **Select a Data Group** page to select the data you want for this report.

The **Select a Data Group** page provides only those data groups specific to the type of report you chose earlier, and the current section you want to define. For example, if you selected historical on the **Select a Report Type** page, and table on the **Select a Report Layout** or **Selection Layout** page, you will select data groups only for a historical table.

Example



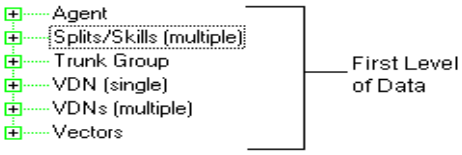
Levels of data groups

The data groups available are placed in a tree view structure. There can be up to three levels of data, the last level containing the individual data groups. From this tree view structure, you will select an individual data group for the section you want to define.

This section includes the following topics:

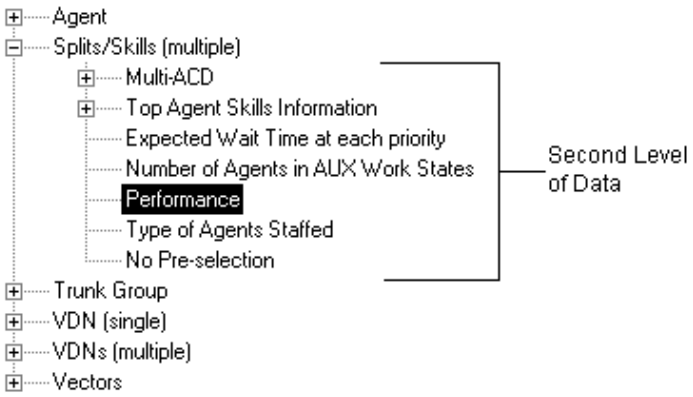
First level

The first level is the highest classification level of data. For example, the highest classification levels of data for a real-time table are Agent, Split/Skills (multiple), Trunk Group, VDN (single), VDNs (multiple), and Vectors.



Second level

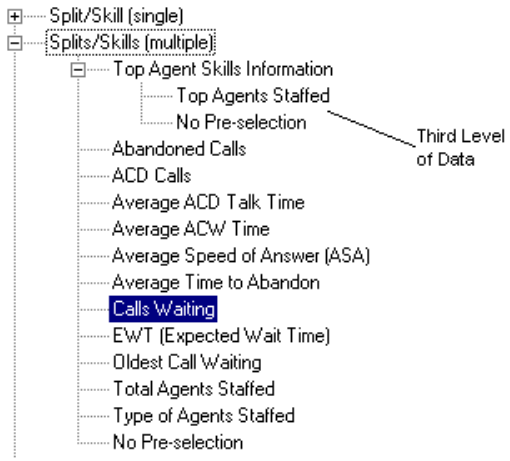
The second level is a breakdown of the first classification level of data. For example, the second level of data for the Split/Skills (multiple) category are Multi-ACD, Top Agent Skills Information, Expected Wait Time at each priority, Number of Agents in AUX Work States, Performance, Type of Agents Staffed, and No Pre-selection. Individual data groups are also contained under this level of data.



Third level

The third level is a breakdown of the second classification levels of data. For example, the third level of data for the Split/Skills (multiple) Top Agent Skills Information category is Top Agents

Staffed and No Pre-selection. If there are three levels of data, the individual data groups will be listed under the third level.



Expanding and collapsing categories

Categories of data and sub-categories of data can be expanded (represented with a plus sign) and collapsed (represented with a minus sign). By default, when the **Select a Data Group** page of the wizard appears, one category will be expanded with one data group selected. The default is based on the information (report type and report layout) that you provided to the wizard previously.

The Select Data Items page

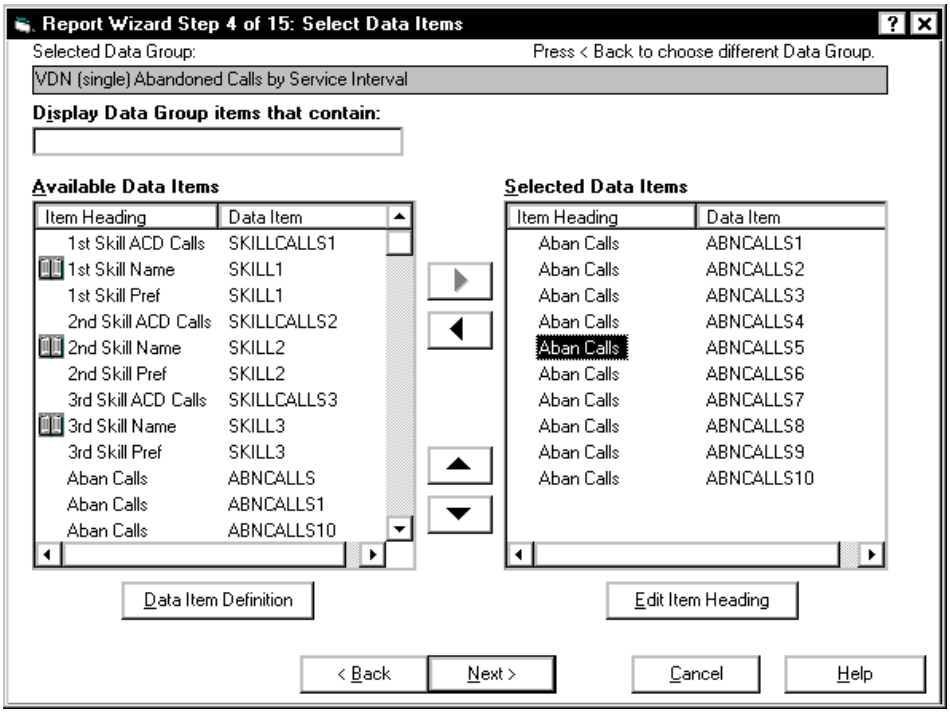
This section includes the following topics:

Use the **Select Data Items** page to select the specific types of data from the CMS databases that you want displayed in your report.

Related topic

For information on how to perform all the available tasks on this page, see Procedures for the Select Data Items page on page 29.

Example



Box and button descriptions

The following table describes the box and buttons on the **Select Data Items** page.

Box or button	Description
Display Data Group items that contain	Use this field to display only specific items in both columns of the **Available Data Items** box. For more information, see Filtering data group items on page 30.
Available Data Items	Contains all the data items associated with the data group. This list allows you to add data items to the **Selected Data Items** box.
Data Item Definition	If you highlight a data item in the **Available Data Items** box and select this button, Report Wizard displays a topic in Help that defines the data item.
Selected Data Items	Contains the predefined database items and calculations from the **Available Data Items** box that you want in your report.
Edit Item Heading	If you highlight an item heading in the **Selected Data Items** box, and select this button, you can change the item heading.

Data item column descriptions

The following table describes the data item column on the **Select Data Items** page.

Data item columns	Column description
Item Heading	Lists the default heading for the database item or calculation. The item heading is the heading used in standard CMS reports.
Data Item	Lists the database item or calculation (internal name).

The system displays icons if the data type is alphanumeric or has a graphical representation. Synonyms that are defined for data items are in parenthesis.

About No Pre-selection

If you chose the **No Pre-selection** data group on the **Select a Data Group** page, the **Selected Data Items** list view will not be populated with preselected data. However, the **Available Data Items** list view will contain all the data items available for your report. To select the data items for your report, you need to manually add them from the **Available Data Items** list view to the **Selected Data Items** list view. You must have at least one database item or calculation in the **Selected Data Items** list view before the wizard will let you proceed.

Procedures for the Select Data Items page

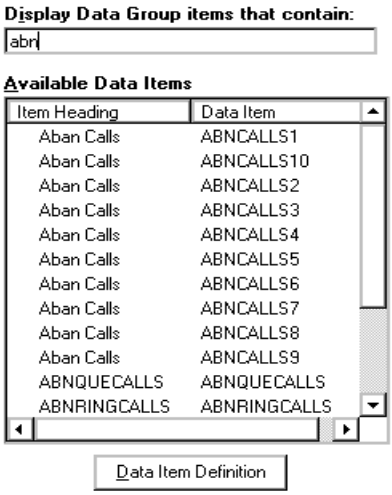
From the **Select Data Items** page, you can do the following tasks:

- Filtering data group items
- Sorting data group items
- Moving data group items from one box to another
- Repositioning data group items
- Creating custom report headings

Filtering data group items

To filter data group items:

1. In the **Display Data Group items that contain** box, enter the characters of the data items that you want Report Wizard to display.



Example:

If you want to list only those data group items that contain the text **logonsk**, enter

```
logonsk
```

1. To re-display all data group items available to the data group, delete all text in the **Display Data Group items that contain** box.

Sorting data group items

To sort the data group items, select the Item Heading column or the **Data Item** column.

All data group items are sorted alphabetically.

Moving data group items from one box to another

To move data group items from the **Available Data Items** box to the **Selected Data Items** box and vice versa, do the following tasks:

To move	Then
From the **Available Data Items** box to the **Selected Data Items** box	Select one or more data items in the **Available Data Items** box, and select the right arrow.
From the **Selected Data Items** box to the **Available Data Items** box	Select one or more data items in the **Selected Data Items** box, and select the left arrow.

Tip:

You can also double-click an item to move it into the other box.

About removing items

Consider the following when removing items:

- If you remove a calculation from the **Available Data Items** box, you will have to back up to the **Select a Data Group** page and reselect the data group to have the calculation appear in the list again.
- When you remove one or more data group items, ensuing data group items are shifted up accordingly.
- If you remove all the data group items in the **Selected Data Items** box, Report Wizard disables **Next**, and you cannot move to the next page of the wizard. You must leave one or more data group items listed in the **Select Data Items** box.

Repositioning data group items

You can reorganize data group items through the following methods.

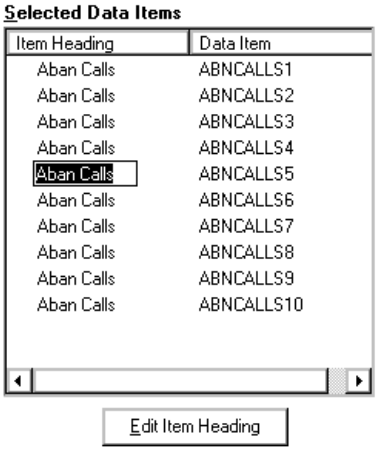
To move items	Then
Up	Highlight one or more data group items and then select the up arrow.
Down	Highlight one or more data group items and then select the down arrow.

Report Wizard enables up and down arrows only when data group items are selected in the **Selected Data Items** box.

Creating custom report headings

To change the data item heading:

1. Select the specific data item heading.



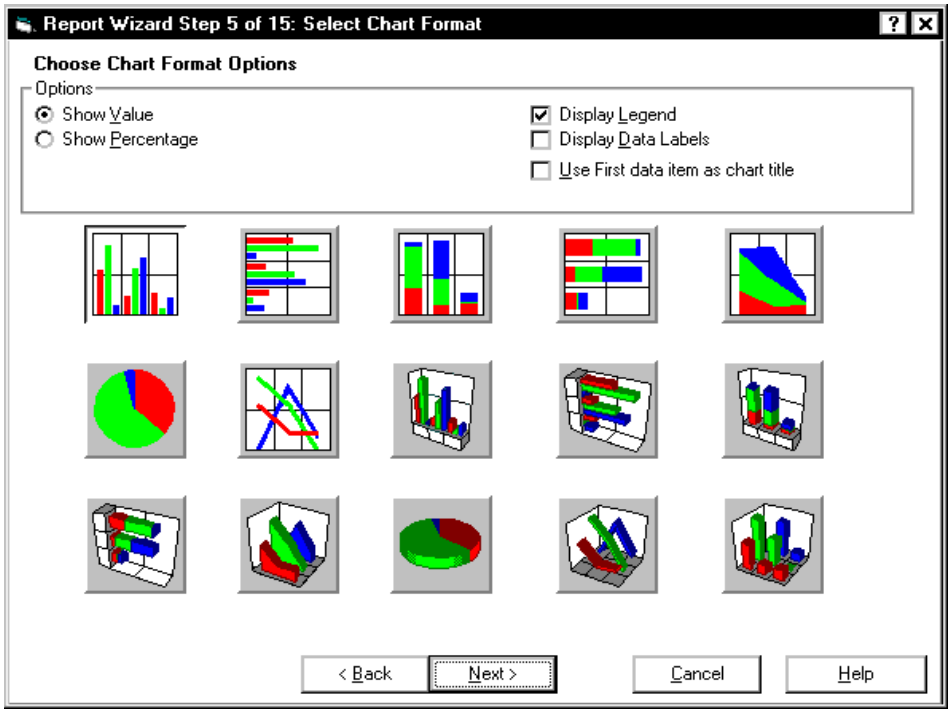
2. Select **Edit Item Heading**.
3. Enter the new heading.

The Select Chart Format page

This section includes the following topics:

Use the **Select Chart Format** page to define the format of your chart. The default is a vertical 2D bar chart that displays the data by value.

Example



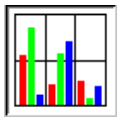
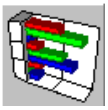
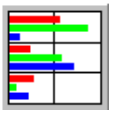
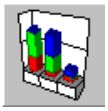
Select Chart Format field descriptions

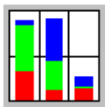
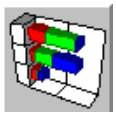
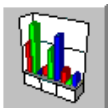
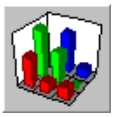
The following fields are located on the **Select Chart Format** page.

Field	Description
Show Value	Displays your data as a numeric value.
Show Percentage	Displays your data as a percentage.
Display Legend	Displays a legend of the data items in the right corner of the chart.
Display Data Labels	Displays the data labels on your report. The data labels are displayed as either values or percentages.
Use First data item as chart title	Uses the first data item as the title.

Available chart formats

You can use any of the following chart formats.

2D Vertical Bar Chart 	3D Horizontal Bar Chart 	2D Stacked Area Bar Chart 
2D Horizontal Bar Chart 	3D Vertical Stacked Bar Chart 	2D Pie Bar Chart 

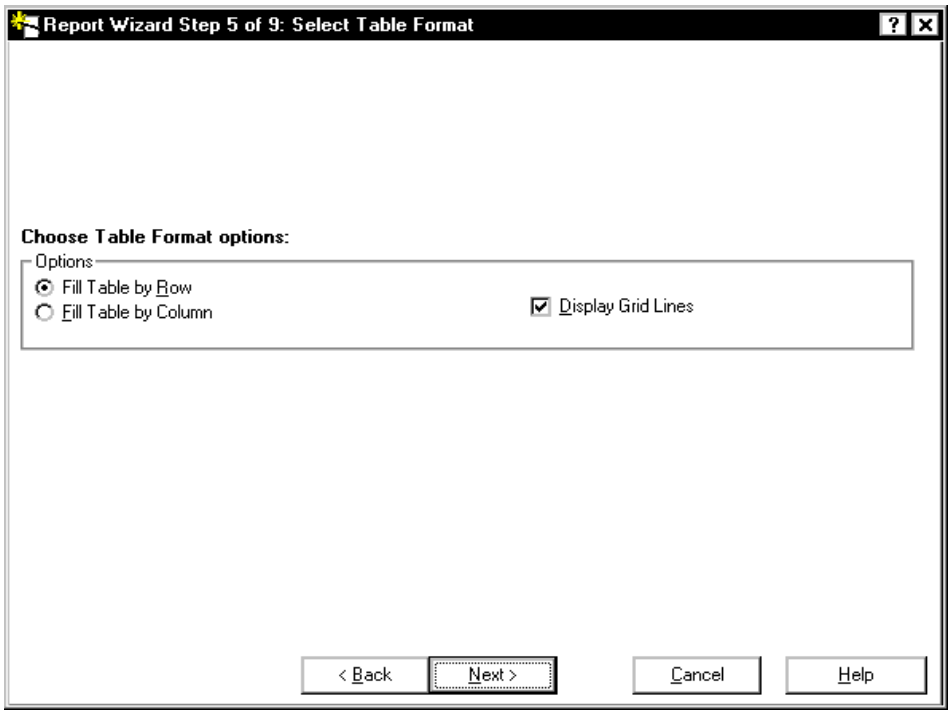
2D Vertical Stacked Bar Chart 	3D Horizontal Stacked Bar Chart 	3D Vertical Bar Chart 
2D Horizontal Stacked Bar Chart 	3D Line Chart 	3D Pie Chart 
2D Line Bar Chart 	3D Stacked Area Chart 	3D Vertical Cluster Bar Chart 

The Select Table Format page

This section includes the following topics:

Use the **Select Table Format** page to define the characteristics of your table layout.

Example



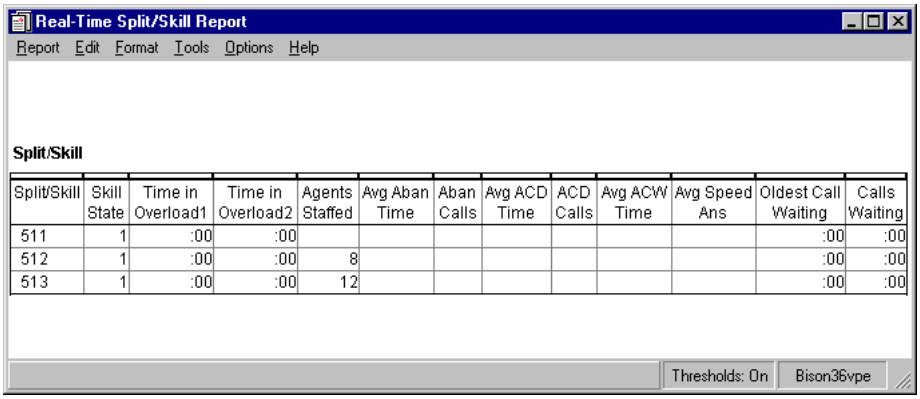
Select Table Format field descriptions

The following fields are located on the **Select Table Format** page.

Field	Description
Fill Table by Row	Displays your data items horizontally. See Example of a row-oriented report.
Fill Table by Column	Displays your data items vertically. See Example of a column-oriented report.
Display Grid Lines	The report will display grid lines to separate the data.

Example of a row-oriented report

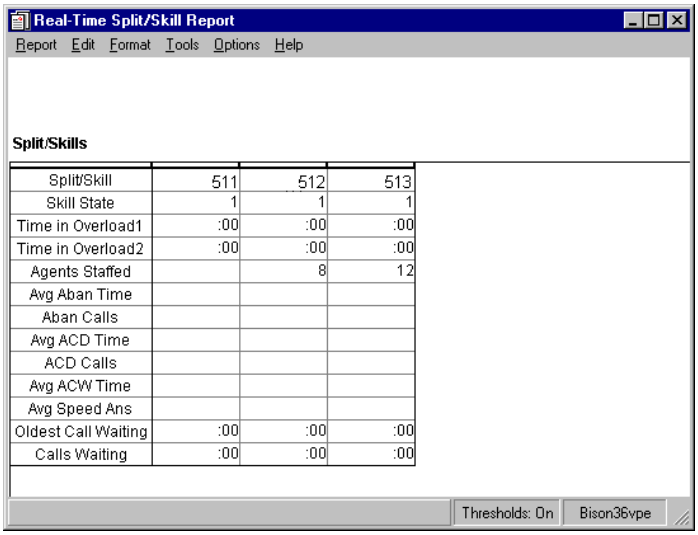
The following is an example of a row-oriented report.



Split/Skill	Skill State	Time in Overload1	Time in Overload2	Agents Staffed	Avg Aban Time	Aban Calls	Avg ACD Time	ACD Calls	Avg ACW Time	Avg Speed Ans	Oldest Call Waiting	Calls Waiting
511	1	:00	:00								:00	:00
512	1	:00	:00	8							:00	:00
513	1	:00	:00	12							:00	:00

Example of a column-oriented report

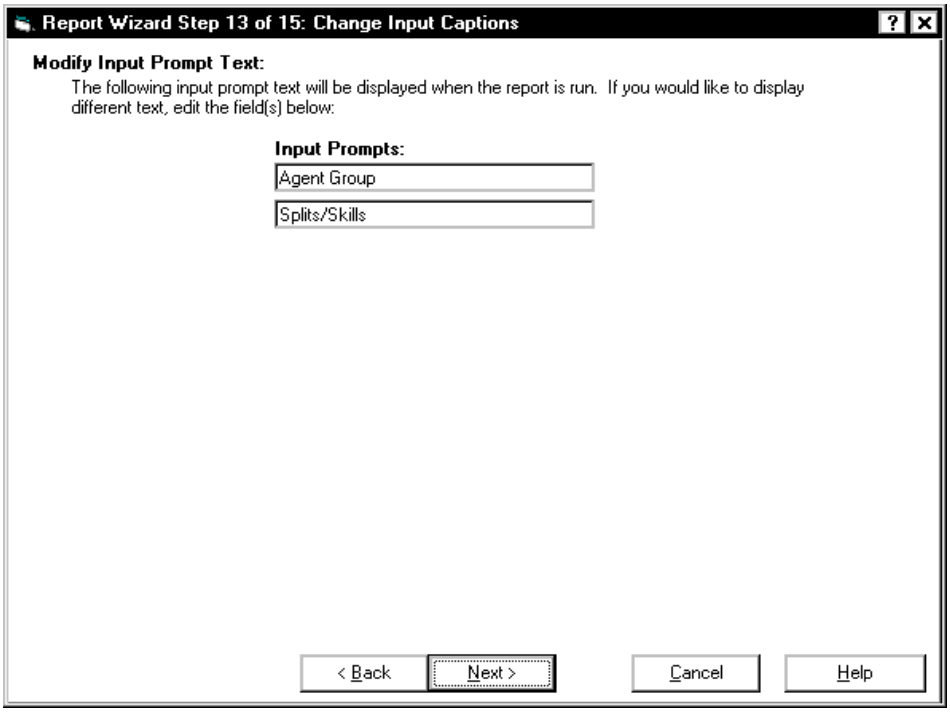
The following is an example of a column-oriented report.



The Change Input Captions page

When you are finished defining all report sections, the **Change Input Captions** page is displayed. This page allows you to change the input prompts that will appear in the **Report Input** window of your new report.

Example



Input Prompts

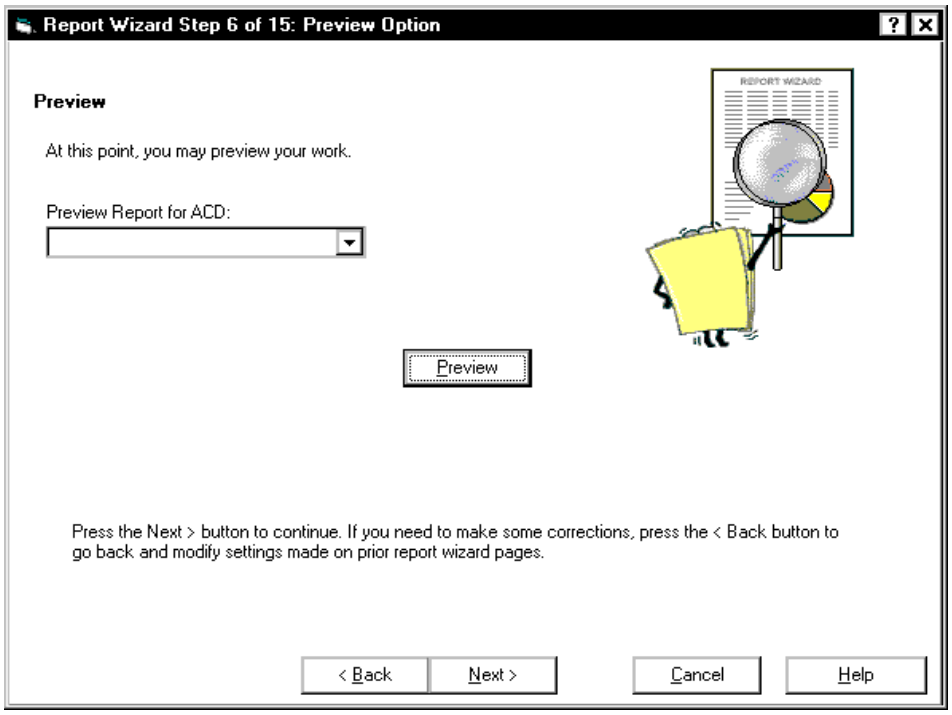
The number of entries you see displayed in the **Change Input Captions** page will depend on the data group you assigned to each section of your report. From this page, you can change the input captions, but not the inputs that will appear in your report.

The Preview Option page

The **Preview Option** page allows you to preview what you have defined for your report and exit the preview. You can use **Back** to modify the report section.

A previewed version of a report contains real data for each completed section; however, if the report is designated as real-time, then there will be no refresh of data. The only option while in a previewed version of a report is to exit the preview.

Example



Two-section report

When you preview the first section of the report, you will be prompted to provide input values for that section. When you preview the second section of the report, you will be prompted to provide input for both sections.

The Save Report page

Use the **Save Report** page to save your report and define who has permission to access your report. Your report will be saved when you enter a report name and select **Next**. The report type and data group selections you made for your report will determine the category your report will be saved under. For example, Real-Time.

You are not required to save your report at this time. If you do not save your report, Report Wizard will still allow you to advance to the next page.

Important:

If you do not enter a report name, your report will not be saved when you advance to the **Finish** page. Report Wizard will discard your report if you do not save your report on either the **Save Report** page or the **Finish** page.

Example

Save Report field descriptions

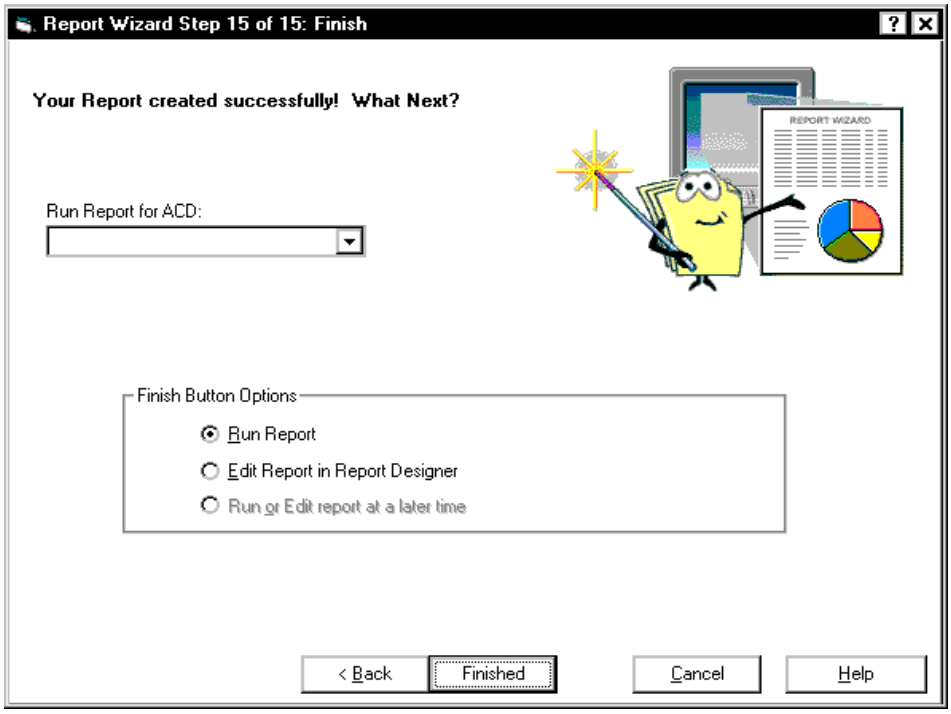
The following table describes the fields on the **Save Report** page.

Field	Description
Report Name	Allows you to enter a name for your report. If there is an existing report with the same name, and you are *not* the owner of this report, Report Wizard will not allow you to overwrite the existing report.
Report Description	Provides a space for you to write a description of your report.
Everyone	Anyone can run the report and copy the report design. The CMS user permission structure is still applicable.
Only Me	The only users that can run the report and copy the design are you and CMS administrators.

The Finish page

When all the required tasks are completed to create a report, you will have to determine whether you want to run the report, edit the report with Report Designer, or exit without doing anything.

Example



Finish page field descriptions

The following fields are located on the **Finish** page.

- **Run Report for ACD** - Allows you to select the ACD for your report.
- **Run Report** - When you run your report from the **Finish** page of the Report Wizard, it will run with the appropriate inputs, access the CMS database, and produce real data. You will run a live report.

If you run an unsaved report you will be prompted to save the report upon its completion. The report will be saved as a Report Designer report and placed in the appropriate folder (real-time, historical, or integrated). If you elect not to save your report, you can select **Exit**, to close the report or you can select **Return** to return to the running report.

- **Edit Report in Report Designer** - When you choose to edit your report from the **Finish** page, Report Designer starts. All edits to your report are now done through Report Designer. Select the **Back** button on the wizard pages to edit your report with the Report Wizard.
- **Run or Edit report at a later time** - Select this option to exit Report Wizard without running your report or editing your report. This option is unavailable if you have not entered a report name for your report.

There are two ways to exit Report Wizard:

Option 1	**Option 2**
Select **Run or Edit report at a later time**, and select **Finish**.	Select **Cancel**. If your report has not been saved, Report Wizard will discard your report. Report Wizard will warn you if you try to cancel without first saving your report.

Chapter 2: Using Report Manager

This section describes how to use Report Manager of the Avaya Call Management System (CMS) Supervisor application.

Organization of general information

About Report Manager on page 45

Organization of procedures

This section includes the following procedures:

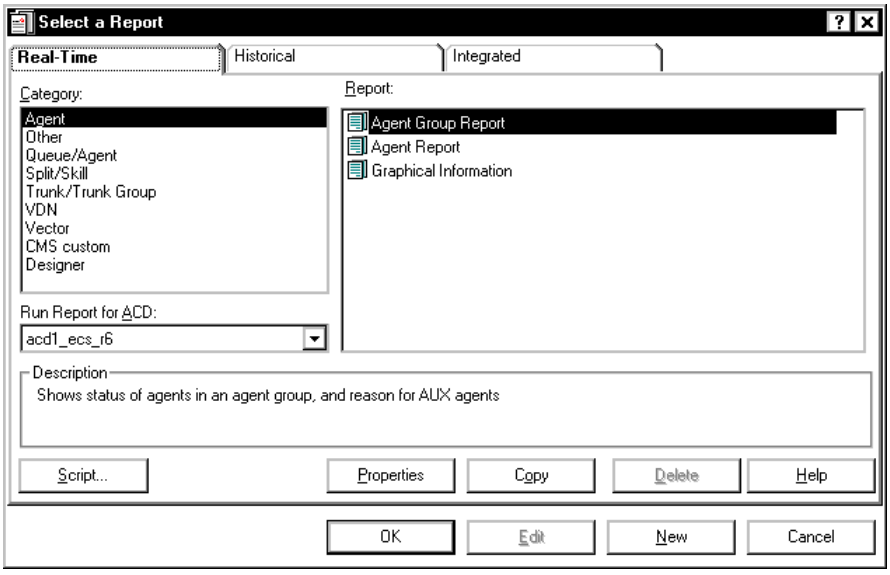
About Report Manager

This section includes the following topics:

What is Report Manager?

Report Manager is a feature of the Supervisor application that allows you to view report properties, copy reports, and access Report Designer to edit reports or create new reports.

The Reports Selector window



Buttons on the Report Selector window

Use the buttons on the **Report Selector** window to do the following tasks:

Button	Use to …
Script	Choose from any number of Windows scripts that you have installed on your PC.
Properties	Manage the standard CMS and Supervisor reports.
Copy	Copy reports to the Designer category for editing.
Delete	Delete reports from the Designer category. You cannot delete standard CMS, CMS custom, and standard Supervisor reports.
Help	Opens the context-specific help for the current window.
Edit	Edit the reports.

Button	Use to …
New	Create a new Designer report from scratch.
Cancel	Cancels any changes or additions you have made since the last time you selected **OK**.

Viewing or changing report properties

Report Manager gives you the ability to view report properties, such as the report name, description, owner, type, folder, category, permissions; as well as the folder the report is stored in.

To view the report properties:

1. Open the **Report Selector** window.
2. Select the report for which you want to view properties.
3. Select **Properties**.

   The **Properties** window for the report is displayed.
4. To change the name, description, or owner of a report, place the cursor in the appropriate field and make your edits.
5. To specify who can see the report, select either **Everyone** or **Only Me**.
6. When you are done making your changes, select **OK** to save the changes.

   If you attempt to give a report the same name as an existing designer report, the **Report Already Exists** window is displayed. This window allows you to overwrite the existing report or to give the report you want to save a different name.

Copying a report to the designer category

Use Report Manager to copy a report from any category into the Designer category of any folder. The categories can be Agent, Other, Queue/Agent, Split/Skill, Trunk/Trunk Group, VDN, Vector, Custom, or Designer. Folders can be Real-Time, Historical, or Integrated.

This section includes the following topics:

- Procedure on page 48

Where to access your reports

You can access reports that you create or edit with Report Designer only from the Supervisor interface to the CMS server. Therefore, if you edit an CMS custom report with Report Designer, changes to that report will not be available when the report is run from the Terminal Emulator or from another terminal interface to the CMS.

Who can modify your reports

No CMS user other than a user with CMS administration permissions can modify a report design you create regardless of whether the report is accessible by all or only by you. A user with CMS administration permissions always has the ability to modify your report design, even if you make it available only to yourself.

Procedure

To copy a report:

1. Open the **Report Selector** window.
2. Select the report that you want to copy.
3. Select **Copy**.

   The **Copy Report** window is displayed. This window allows you to select *where* you want to copy the report. You can copy the report to the Designer category, to a PC file, or from a PC file to the CMS server.
4. Select **To Designer Category**.
5. Select **OK**.

   The **Copy Report To Designer** window is displayed. This window allows you to define the name, description, folder, and scope of the report.
6. Enter a name for your report in the **Name** field. The name can have up to 40 alphanumeric characters, including blanks. Because the name you give your report should be unique, you may want to look at existing report names before you enter a name for your report.

7. Move the cursor to the **Description** field and enter a description of the report.

   The description can have up to 100 alphanumeric characters, including blanks. It is not required that you enter a report description.

   Do *not* use the following characters in your description of the report:

   - \ (backslash)
   - ; (semicolon)
   - ’ (grave accent)
   - ~ (tilde)
   - " (double quote)
   - | (pipe)
   - * (asterisk)
   - ? (question mark)

8. Move the cursor to the **Folder** field. Use the pull-down list to select **Real-Time**, **Historical**, or **Integrated**.

   The report is stored in the Designer category of the folder you select here.

   When you edit the report, you will access the database for the folder you select here. If you select real-time, you will *not* be able to access the historical database tables to define queries for the report. If you select historical, you will *not* be able to access the real-time database tables to define queries for the report. However, if you select integrated, you will be able to access both the real-time and historical databases to define queries for the report.

   You *must* select the historical or integrated folder if you want to include the following items:

   - Exceptions data
   - Agent trace data
   - Call record data

9. Do one of the following tasks:

If …	Then …
You want your report to be available to everyone	Select **Everyone**.
You want your report to be available only to you	Select **Only Me**.

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

   For more information about assigning access, see Who can modify your reports on page 48.

10. Select **OK** to save the report properties.

    Tip:

    After you have copied the report to the designer category, you can use **Edit** to access Report Designer and edit the report.

Copying a designer report to a file

Use the **Copy** button on the **Report Selector** window to copy any designer report that you create to a file that resides on diskette, on your hard drive, or on a network drive. You can use this feature to easily transport designer reports from one PC to another.

If a report was created by Avaya Inc. Professional Services, only a user with CMS services permissions can copy the report.

To copy a report, do the following steps:

1. Open the **Report Selector** window.
2. Select the **Designer Category**.
3. Select the designer report that you want to copy.
4. Select **Copy**.

   The **Copy Report** window displays with the **To a PC File** option enabled. This window allows you to select where you want to copy the report. You can copy the report to the Designer category, to a PC file, or from a PC file to the CMS server.

5. Select **To a PC File**.

6. Select **OK**.

   The **Save Report to PC File** window is displayed.

   This window is a standard Windows browse window.

7. Select the file name and folder to which you want to save the report.
   - You can copy the report to any drive to which you have access, including the floppy drive on your PC. This is usually a:\.
   - To save the report to a network drive, select **Network**. This will allow you to access the network drives where you have permissions.
8. Select **OK**.

   The file is saved and, upon successful completion of the save, a confirmation window displays.

Copying a designer report from a file

Use Report Manager Copy to copy any designer report that has been saved to a file, either on diskette or on a network drive, onto the CMS server.

To copy a report from a file to the server:

1. Open the **Report Selector** window.
2. Select **Copy**.

   The **Copy Report** window is displayed. This window allows you to select *where* you want to copy the report. You can copy the report to the Designer category, to a PC file, or from a PC file to the CMS server.
3. Select **From a PC File to the CMS Server**.
4. Select **OK**.

   The **Load Report From PC File** window is displayed.

   This window is a standard Windows browse window.
5. Select the file that you want to copy to the CMS server.
6. Select **OK**.

   The file is copied to the CMS server and, upon successful completion of the copy, a confirmation window displays.
7. Do one of the following tasks:
   - Select **Overwrite the existing report** to replace the report that currently resides on the CMS server.

- Select **Save the report being copied as** and enter a new name for the report if you want to retain the version of the report that currently resides on the CMS server.

Deleting a report from the designer category

Report Manager allows you to delete any report that resides in the designer category except reports purchased from Professional Services. You cannot delete any of the standard CMS, CMS custom, or standard Supervisor reports. Standard reports are reports that reside in the Agent, Other, Queue/Agent, Split/Skill, Trunk/Trunk Group, VDN, Vector, and Custom categories.

To delete a designer report:

1. Open the **Report Selector** window.
2. Select the Designer category under any tab.
3. Highlight the name of the report that you want to delete.
4. Select **Delete**.

   A message confirming the delete displays.
5. Select **OK** to delete the report.

Opening Report Designer with Edit or New

Use one of the following methods to open Report Designer.

If you want to open from …	Then …
Report Manager	Select a report from the designer category and do one of the following tasks: • Select **Edit**. • Select **New** to create a new report.
A report output window	Select **Design** from the Report menu on the report.
Report Wizard	Open from the last page.

Chapter 3: Report Designer basics

This section outlines the features of Report Designer and describes its general use.

Organization of general information

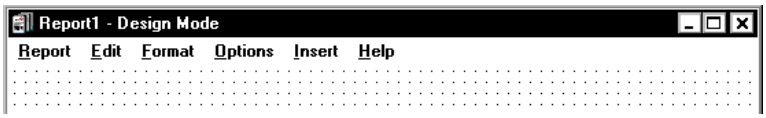
Report Designer menus on page 55

Organization of procedures

This section includes the following procedures:

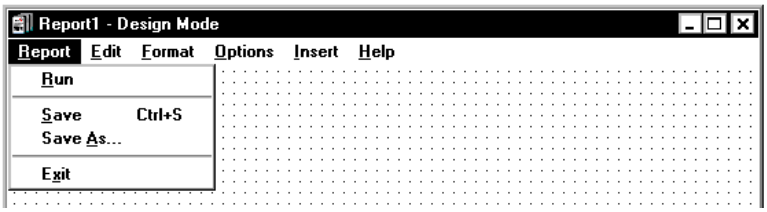
Report Designer menus

This section describes Report Designer menus and includes the following topics:



Report

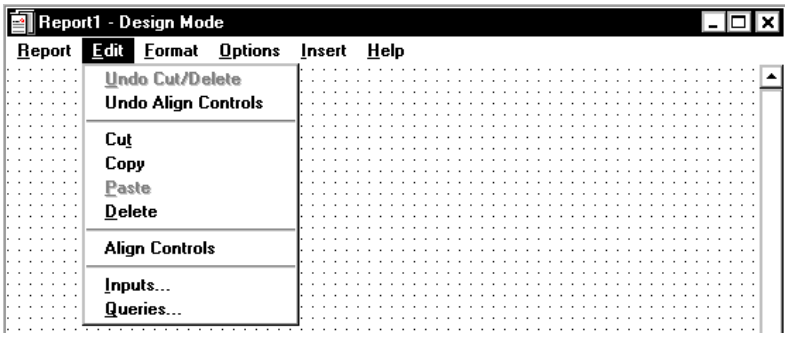
The following is a description of the **Report** menu.



Menu item	Function
Run	Takes you out of design mode and runs your report. You will use **Run** to test the changes or additions you have made to a report.
Save	Saves your report.
Save As	Saves your report with a new name or with the current name.
Exit	Closes Report Designer without saving your changes and additions. You are prompted to save any changes you made.

Edit

The following is a description of the **Edit** menu.

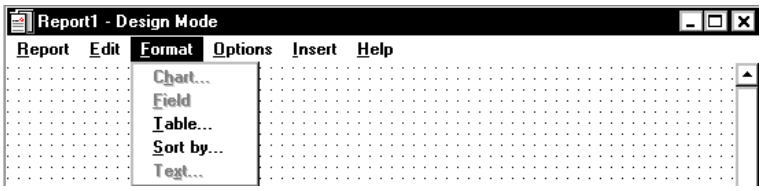


Menu item	Function
Undo Cut/ Delete	Undo a cut or deletion.
Undo Align Controls	Undo an alignment you made.
Cut	Remove an item from the report and place it on the Windows clipboard.
Copy	Copy the items that you have selected on the report and place it on the Windows clipboard. You can copy only entire tables and entire charts, not a portion of a table or chart. If you want to rearrange the order of the columns on a grid, use the **Format Table** window. You can copy from one report to another report. To do so, complete these steps: 1. Open the report from which you want to copy. 2. Select the items that you want to copy. 3. Select **Copy** from the **Edit** menu. 4. Open the report to which you want to copy. 5. Select **Paste** from the **Edit** menu.
Paste	Place one or more items currently on the Windows clipboard into the report that is currently selected in **Design Mode**.
Delete	Remove the currently-selected items from the report.
Align Controls	Align multiple fields according to the controls in the **Align Controls** dialog box. This option is enabled only when multiple fields are selected.

Menu item	Function
Inputs	Start the **Select Inputs** assistant, which enables you to choose the items that will be included on the report input window for this report. For instructions on how to use the **Select Inputs** assistant, see Edit | Inputs on page 75.
Queries	Start the **Create a Query** assistant, which is where you define the SQL queries that will be used to retrieve the data to be displayed on the report. For instructions on how to use the **Create a Query assistant**, see Edit | Queries on page 91.

Format

The following is a description of the **Format** menu.

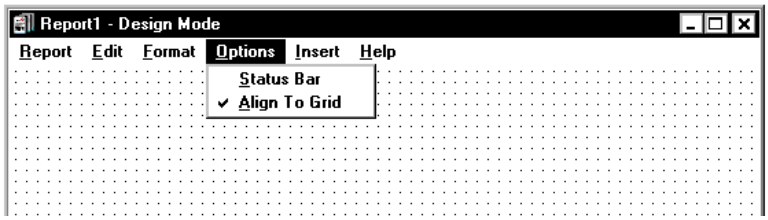


Menu item	Function
Chart	Opens the **Chart Format Options** window. Use this window to format charts on reports. For more information about the **Chart Format Options** window, see Format | Chart on page 129.
Field	Opens the **Field Format Options** window. Use this window to format fields defined in queries. For more information about the **Field Format Options** window, see Format | Field on page 167.
Table	Opens the **Table Format Options** window. Use this window to format tables on reports. For more information on the **Table Format Options** window, see Format | Table on page 153.

Menu item	Function
Sort by	Opens the **Table Format Options** window with the **Sort by** tab active. Use this window to access the **General** and **Sort by** tabs to format tables on reports. For more information on the **Table Format Options** window, see Format | Table on page 153.
Text	Opens the **Text Format Options** window when a text item on the report is selected. Use this window to change the font display characteristics for the selected text. For more information on the **Text Format Options** window, see Format | Text on page 171.

Options

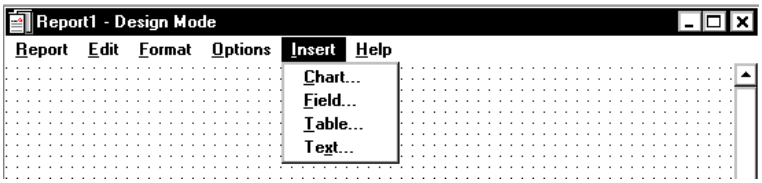
The following is a description of the **Options** menu.



Menu item	Function
Status Bar	Include a status bar on the bottom of the report you want to design. A check mark next to the menu item means that you have selected **Status Bar**.
Align To Grid	Align the currently-selected items on the report to the Design Mode grid when they are moved. The Design Mode grid is the grid that is shown on the window behind any charts, tables, or text, when you are in Design Mode. **Align To Grid** is selected when there is a check mark next to the menu item.

Insert

The following is a description of the **Insert** menu.



Menu item	Function
Chart	Opens the **Chart Assistant**, which is where you define the contents of a chart. A chart is a graphical presentation of the report information. This menu item is unavailable if no queries have been defined. For more information about the **Chart Assistant**, see Insert | Chart on page 109.
Field	Opens the **Field Assistant**, which is where you define the contents of a field to be placed on the report. For more information with the **Field Assistant**, see Insert | Field on page 117.
Table	Opens the **Table Assistant**, which is where you define the contents of a table to be placed on the report. A table is a standard Avaya Call Management System (CMS) report presentation format. This menu item is unavailable if no queries have been defined. For more information with the **Table Assistant**, see Insert | Table on page 125.
Text	Opens the **Text Assistant**, which is where you can enter plain text that will appear on the report. For more information with the **Text Assistant**, see Insert | Text on page 123.

Help

The following is a description of the **Help** menu.

Menu item	Function
Contents	Opens the **Help Topics** dialog for Report Designer.
Technical Support	Opens a window that provides technical support information.
About Avaya CMS Supervisor	Opens the **Supervisor Help About** window, which shows the software version number.

Other ways to access Help

You can access Supervisor Help from all of the windows in Report Designer. You can also use one of the following ways to access Help:

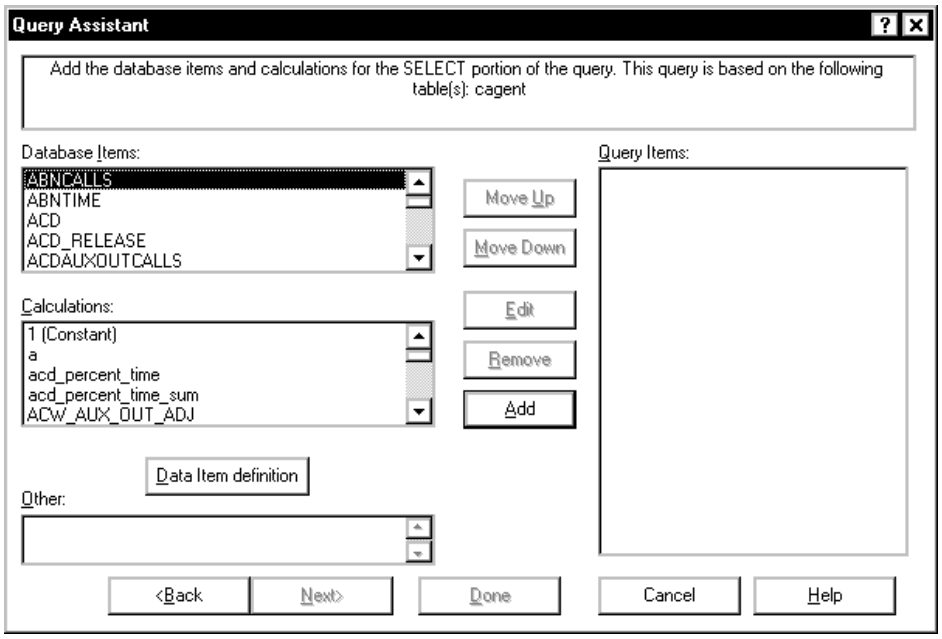
- Press F1.
- Select **Help** (if available).

These methods will provide Help that is specific to the current window.

Accessing online database definitions

Report Designer provides access to online database item definitions when you want to add database items and calculations to a query. With this feature, you do not have to refer to hard-copy documentation to learn about database items and calculations.

Example



Procedure

To access the online database item definitions:

1. From a **Query Assistant** window, highlight the data group item or calculation for which you want a definition.
2. Select **Data Item definition** located under the **Calculations** box.

Starting Report Designer

This section includes the following topics:

About user permissions

To access Report Designer and to run Designer reports, you must have read and write permissions assigned for Custom Reports. These permissions are set with the User Permissions tool.

For more information about user permissions, see the Avaya CMS Administration document.

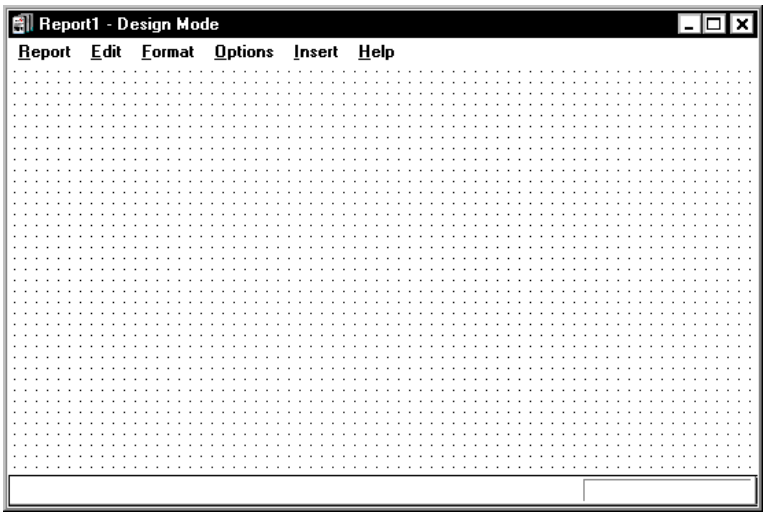
Different ways to start Report Designer

Use one of the following methods to start Report Designer:

- Select a report from the Designer category in any folder and select **Edit** on the **Reports Selector** window.
- Select **New** on the **Reports Selector** window to create a new report.
- Run a report and then select **Design** from the **Report** menu on the report.
- Enter **Report Designer** from the final page of the Report Wizard.

Design Mode window

You can use any method to start Report Designer and go to the **Design Mode** window. The window will be blank if you want to create a new report or will have report information if you want to edit an existing report.



Exiting Report Designer

You can close Report Designer using any of the standard Windows methods:

- Select **Exit** from the **Report** menu.
- Double-click **System**.
- Select **Close** at the top of the window.

If you try to exit Report Designer without first saving the report you have been working on, a warning gives you the opportunity to save the report before you close Report Designer.

Creating a new report

Do all of the steps in *Create a new report* to create a custom report. If you consistently do *all* of these tasks for each report you create, your reports will run properly and you will be able to create them efficiently.

This section includes the following topics:

Before you begin

You need to know the following before you create a new report:

- If you want to customize the Historical Call Record Report with Report Designer, the **Disposition** report field will display the numerical values for DISPOSITION, and not the state names. For more information, see the Avaya CMS Database Items and Calculations document.
- With the addition of the split/skill I_OL1TIME and I_OL2 TIME database items, row data will be archived for those items if the skill row spent any time in overload 1 or overload 2. If the row (skill) spent all of its time in the normal state, and has no other reason to be archived (that is, no agent staffed time, no calls handled, and so on), it will not be archived. When you create a report through Report Designer, data should be summed across intervals in order to see meaningful data.

Procedure

To create a new report:

1. Access Report Designer so that you can design the report.

   For more information, see Design mode basics on page 69.

2. Define inputs for the report input window so that users can run the report with parameters they choose

   For example: split, agent, time, date, and so on.

   You can also define inputs while you create a query. To do so, select **Inputs** on the **WHERE clause** window.

   For more information, see Edit | Inputs on page 75.

3. Define report type and rows of data from specific CMS database tables that will supply data for the tables and charts on the report.

   For more information, see About queries on page 92.

4. Define what data from the queries should appear in each chart, field, or table on the report.

   For more information, see any of the following chapters:

   - Insert | Chart on page 109
   - Insert | Field on page 117
   - Insert | Table on page 125

5. Enter text to provide headings for the tables and charts on the report, and to provide additional information, such as the report name.

   This step is optional.

   For more information, see Format | Text on page 171.

6. Define fields on the report to show when the report was run and what items the report covers (as defined in the report input window).

   This step is optional.

   For more information, see Insert | Field on page 117.

7. Edit a report design with the **Cut**, **Copy**, and **Paste Edit** menu options and standard Windows drag-and-drop conventions. Edit an existing report design to rearrange and delete sections of the report quickly and easily.

   For more information, see Design mode basics on page 69.

8. Save the report before you test it.

9. Define the *name* that you use both to run the report and to access the report design if you want to change the design. Define access to specify whether other users can run the report and can copy the report's design to create their own custom reports. Define the type as real-time, historical, or integrated.

   For more information, see Viewing or changing report properties on page 47.

10. Test your report immediately after you design and save it. A test helps eliminate wasted time in running a report that has an incomplete design.

Editing an existing report

Use this procedure to edit an exiting report in Report Designer. If you consistently do *all* of these tasks for each report you want to edit, your reports will run properly and you will be able to create them efficiently.

To edit an existing report:

1. Copy an existing report so that you start the design process with existing report headings, data fields, queries, charts, tables, and other report features. When you copy a report to the Designer category, the original report remains intact and is still located in the original report category.

   You can also run a report and then select **Design** from the **Report** menu. This takes you directly into design mode, and you will be asked if you want to save the report (with a new name, in the Designer category) when you exit design mode.

   For more information, see Copying a report to the designer category on page 47.

2. Define the *name* that you use both to run the report and to access the report design if you want to change the design. Define access to specify whether other users can run the report and can copy the report's design to create their own custom reports. Define the type as real-time, historical, or integrated. When you copy a report to the Designer category with Report Manager, the **Properties** window automatically displays as part of the copy process.

   For more information, see Viewing or changing report properties on page 47.

3. Access Report Designer so that you can design the report.

   For more information, see Opening Report Designer with Edit or New on page 53.

4. Edit a report design with the **Cut**, **Copy**, and **Paste Edit** menu options and standard Windows drag-and-drop conventions. Edit an existing report design to rearrange and delete sections of the report quickly and easily.

   For more information, see Design mode basics on page 69.

5. Define inputs for the report input window so that users can run the report with parameters they choose. For example, users can choose the following parameters: split, agent, time, date, and so on.

   You can also define **Inputs** while you create a query. To do so, select **Inputs** on the **WHERE clause** window.

   For more information, see Edit | Inputs on page 75.

6. Define which rows of data from specific CMS database tables will supply data for the grids and charts on the report. If you copy a report design, the definitions of that report's queries are copied. You can then modify the queries, as required.

   This step is optional.

   For more information, see About queries on page 92.

7. Define what data from the queries should appear in each chart, field, or table on the report. If you copy a report design, the definitions of that report's charts, fields, and tables are copied. You can then modify the definitions as required.

   This step is optional.

   For more information, see any of the following chapters:

   - Insert | Chart on page 109
   - Insert | Field on page 117
   - Insert | Table on page 125

8. Enter text to provide headings for the tables and charts on the report, and to provide additional information, such as the report name. If you copy a report design, the text of that report is copied. You can then modify the text as desired.

   This step is optional.

   For more information, see Insert | Text on page 123.

9. Define fields on the report to show when the report was run and what items the report covers as defined in the report input window. If you copy a report design these fields are copied. You can modify them as required.

   This step is optional.

   For more information, see Insert | Field on page 117.

10. Save the report before you test it.
11. Test your report immediately after you design and save it. A test helps eliminate wasted time in running a report that has an incomplete design.

Chapter 4: Design mode basics

This section describes how to use the basic features of the Report Designer **Design Mode** window.

This section includes the following procedures:

Copying an item and pasting the item into the same report

To copy an item in a report and paste the copy into the same report:

1. Open the report from which you want to copy.
2. Select one or more items that you want to copy.
3. Press **Control**+**C**.
4. Go to where you want to paste the items and press **Control**+**V**.

The system places items in the upper-left corner of the **Design Mode** window.

Copying and pasting items

This section includes the following topics:

Copying from a Designer report

To copy items from one report to another report:

1. Open the report from which you want to copy.
2. Select the items that you want to copy.
3. Press **Control**+**C**.
4. Open the report to which you want to paste what you have copied.
5. Press **Control**+**V**.

Note:

Open *both* reports in design mode to copy from one report to another report.

Copying from a report that is *not* a Designer report

To copy an item from a report that is *not* a Designer report:

1. Run the report.
2. Select **Design** from the **Report** menu.
3. Copy the item to the clipboard.

   See Copying from a Designer report on page 70.
4. Select **Run** from the **Report** menu.

   One of the following occurs:

   - If you did not make any changes to the report, you will automatically be returned to the run mode.
   - If you inadvertently made changes to the report, Supervisor displays a message that gives you the option to save the changes.
5. Select **No** if you made changes that you do not want to save.

Cutting an item

To cut an item from a report and place the information on the Windows clipboard:

1. Select the item.
2. Press **Control**+**X**.

Deleting an item

Use this procedure to permanently remove the currently-selected items from the report.

To delete an item from a report:

1. Select the item.
2. Press **Delete**.

   The item is removed from the report and is no longer available to be pasted into the report.

Restoring an accidently-deleted item

If you accidentally delete an item that you want to keep in the report, you can select **Undo** from the **Edit** menu if you have not done anything else. If you do not immediately realize that you inadvertently deleted an item, use the **Insert** menu to recreate the item.

Dragging and dropping to arrange items

To reposition one or more items on a report with the drag-and-drop method:

1. Point the cursor at the item and click one time to select one or more items.

   To select additional items, hold down **Control** and click the cursor on the items.

   You will know when an item is selected because there will be a frame around the item or sizing handles will display on the corners of the item.
2. Hold down the left mouse button.
3. Move the cursor to the position where you want the item to reside.
4. Let go of the mouse button.

Resizing an item

To resize an item on a report:

1. Select the item.
2. Place the mouse cursor over one of the sizing handles on the item.
3. Press the left mouse button.
4. Drag the mouse cursor until the item is the appropriate size.
5. Release the mouse button.

Selecting multiple items

To select multiple items on a report (for instance, to copy more than one item at a time):

1. Select the first item.
2. Hold down **Control**.
3. Select the second item.

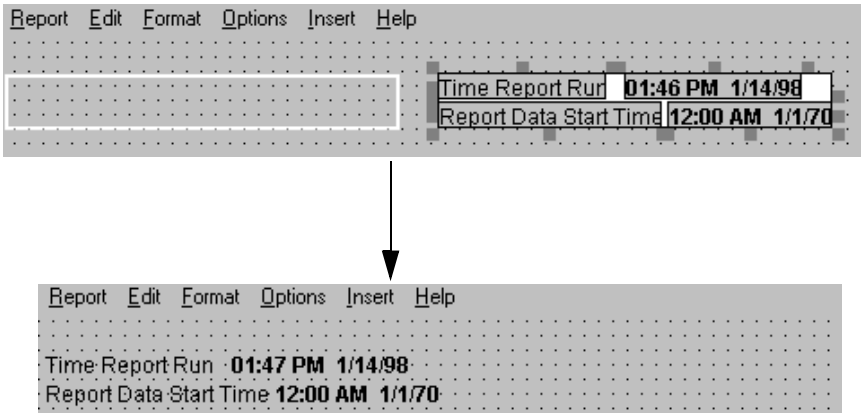
   Handles are displayed around the items.

Moving multiple items

To move the group of items on a report:

1. Place the cursor within the selected items.
2. Hold down the left mouse button and drag the selected items to the desired area. There is a visual indication that your selected items will move as a group with the cursor. As you move the selected items, an outline of the items is displayed and then moves with your cursor.

3. Once the items are in the desired location, release the mouse button. The selected items are displayed in the desired location.



Changing the width of a column in a table

You can quickly and easily change the column widths in your table while in the design mode.

To change a column width:

1. Place the mouse pointer on the border between the column heading. The mouse pointer changes to the following shape:

2. Hold down the left mouse button and drag the column border to the left or right. The column width automatically decreases or increases depending on how you move the column border.

Changing the column headings

You can quickly and easily change the column headings in your table while in the design mode.

To change a column heading:

1. Select the heading name you want to change. A dialog box is displayed with the current heading highlighted.

2. Enter the new name of the heading in the **Name** text box.
3. Select **OK**.

Aligning fields

This section includes the following topics:

Align menu items

The Report Designer **Edit** menu has two menu items:

- **Align Controls**
- **Undo Align Controls**

How to use align

You can select multiple fields and align them in various ways. You can undo the alignment if you are not satisfied with the results.The **Align Controls** dialog box provides six alignment choices. When you select multiple fields, an outline around the fields appears. Any alignment choice you select will align the fields within this outline.

Scaling to page

When you print a report that is too large to fit on one page, you will be prompted with one or more messages. The number of messages will depend on the size of your report. The messages will ask if you want the Scale to Page function to attempt to fit your report onto one page.

Chapter 5: Edit | Inputs

This section describes the **Edit | Inputs** menu option.

Use the **Edit | Inputs** menu option to add, delete, and edit the input fields for a Report Designer report.

Organization of general information

This section includes the following general information:

Organization of procedures

This section includes the following procedures:

The Report Input fields

This section includes the following topics:

The Report Input window

To run a report, you first access a **Report Input** window. The **Report Input** window gives you control over which splits/skills, trunks, dates, intrahour intervals, and so on are included in the report.

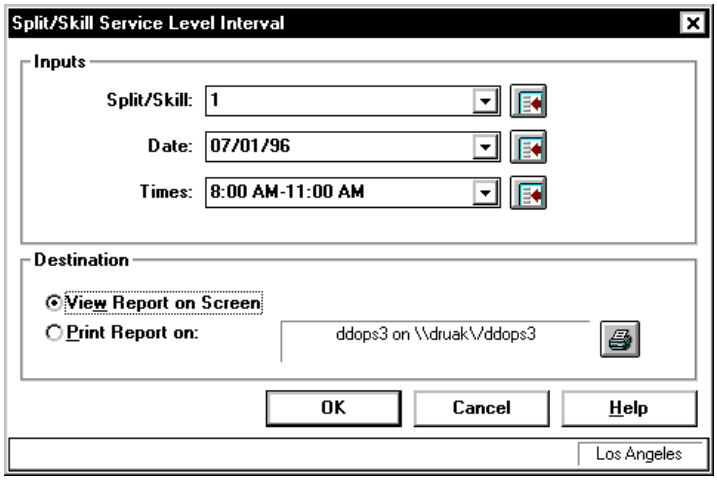
The Define Input window

To define report input fields for a designer report, use the **Define Input** window. When you or another user runs the report, this input window is displayed with the field prompts and the input fields you defined.

You define fields for the **Report Input** window when you use the steps described in the following topics.

Example of input window

In the example input window that is shown below, the user has entered a split number of 1, a date of 07/01/96, and intrahour intervals of 8:00 a.m. to 11:00 a.m.



How CMS stores and retrieves data

Because the report this input window is associated with is a Historical Interval report, Avaya Call Management System (CMS) will retrieve the data for the report from the historical database tables, which are designated with an **h**, such as hagent, hsplit, htrunk, and so on.

Related topics

For more information on how CMS stores and retrieves data, refer to either of the following resources:

- Appendix B: How CMS stores and retrieves data on page 181
- *Avaya CMS Database Items and Calculations* document

Information about how to add input fields

This section includes the following topics:

Why define an input field?

When you define the type of an input field, CMS will be able to do the following when your users run the report:

- Check that user entries are valid system values and are values CMS can use to search the database tables.
- Check your users for permission to run a report for the entries.
- Allow your users to enter names defined in the Dictionary subsystem.

Add only relevant information

Add inputs that are only used in the report queries. If you add additional inputs that are not used in the queries, then irrelevant information that references those inputs will be displayed on the input window for the report.

Fields you do *not* define

You will *not* need to define the following input fields:

- If you want to define a real-time report, you cannot and do not need to define an **Update Rate in Seconds** input field because the field is automatically included in the **Report Input** window.
- If you want to define a historical report, you cannot and do not need to define a **Report Destination** input field because the field is automatically included in the **Report Input** window.
- If you want to define an integrated report, you cannot and do not need to define a **Start Time** input field because the field is automatically included in the **Report Input** window.

Related topic

For the procedure, see Adding input fields to the input window on page 83.

Input fields for pattern matching

This section includes the following topics:

What is pattern matching?

CMS can search for values in certain database items according to wild card search patterns. As a result, you can create a report that allows inputs based on the following items:

- Character strings
- An asterisk, which matches blank and all characters
- A question mark, which matches any single character

CMS then reports data for all items that match entered values.

Database items that allow search

The standard database items that allow pattern matching are as follows.

Database item	Value
VDN	A Vector Directory Number
EXTENSION	An extension number
LOGID	An agent login ID

Database item	Value
EQLOC	A 9-digit trunk location number
CWC	A call work code
ROW_DATE	A date when data was collected

In addition, any custom database items that you define as CHAR columns in the CMS database also allow pattern matching.

Using an asterisk

You can search with an asterisk (*). If an input field is a string type and is associated with the LOGID database item, the user can enter **1***, and CMS will report data for all agents with login IDs that start with 1.

Using a question mark

You can search with a question mark (?). If an input field is a string type and is associated with the VDN database item, the user can enter **21?0**, and CMS will report data for all VDNs that start with 21, end with 0, and have any single character appearing between the 21 and the 0, for example 2100, 2110, 2120, 2130, and so on.

Using String as an input field

If you select **String** for an input field, CMS does not check user inputs in that field for appropriate read permissions or valid 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 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**.

Input Types

The following table describes the input types and what type of information the user must enter.

For this type of input:	The user must enter the following information:
ACD	An ACD number or name.
Agent	An agent name as defined in the Dictionary or agent login ID. The **Agent** input field can only be a single-value input for integrated reports.
Agent group	An agent group name as defined in the Dictionary. Use the following query: `ACD=$acd and OLDEST_LOGON > 0 and LOGID in (select value from agroups where acd_no=$acd and item_name = [Agent Group:])`
Agent state	An agent state name. This can be a standard or new name as defined in the Dictionary. Standard names are ACD, AUX, ACW, and so on.
Call Work Code	Call work code names or numbers.
Date	A date in region-specific format or as a relative number. For example, use -7 for 7 days ago.
Extension	An extension number.
Location ID	A location ID can be assigned to either an agent or to a trunk equipment location. • The location IDs are actually assigned to the agent terminal, and are associated with the port network to which terminals are assigned. Agent location IDs are available only for agents who are currently logged in. Agent location IDs are part of the Agent Site Tracking feature. • Trunk location IDs are assigned to the trunk equipment location, and are associated with the communication server port network location. The trunk equipment location ID is part of the Multi-Locations feature on the communication server.
Login ID	A login ID.

For this type of input:	The user must enter the following information:
Number	A number that 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, use the number of ACD calls or percent within the service level.
Split/Skill	A split/skill number or name.
String	A character string. Select this type only if one of the following is true: • Your variable field is linked to a custom database item that you identify in the CMS database as a CHAR column. • Your variable field is linked to a standard database item that is a CHAR column, *and* you want to allow the user to do a pattern search when running the report. For more information, see Input fields for pattern matching on page 79.
Time (duration)	A number, including decimals, of seconds. This type applies only if your variable field asks for specific values regarding ACD performance. For example, use time in AUX work, average speed of answer, or average talk time.
Time (point in time)	A specific time of day in hh:mm format, either as 24-hour time or with AM or PM appended.
Trunk	A trunk name or number. The **Trunk** input field can only be a single-value input for integrated reports.
Trunk group	The number or name of a trunk group.
Trunk state	A trunk state name. The trunk state name can be a standard name or new name as defined in the Dictionary subsystem. Standard names are IDLE, SEIZED, QUEUED, and so on. **Note:** If you use **Trunk state** as an input in an integrated report, use a real-time query. You *cannot* use **Trunk state** in an integrated query.
VDN	A Vector Directory Number (VDN) name. The **VDN** input field can only be a single-value input for integrated reports.
Vector	A vector number or name. The **Vector** input field can only be a single-value input for integrated reports.

Adding input fields to the input window

This section includes the following topics:

Before you begin

Read the following topics before you do this procedure if you have not done so already:

- Information about how to add input fields on page 78
- Input fields for pattern matching on page 79
- Input Types on page 81

Procedure

To define the input fields for a report:

1. Select **Inputs** from the **Edit** menu.

   An **Edit Inputs** window is displayed.

   - If you want to edit an existing report, the items that already appear on the input window for the report are shown in the **Inputs** list.
   - If you want to create a new report, the **Inputs** list is blank.

2. In the **Input Types** list, highlight the first input you want to require for the report.

   For definitions of the available input types, see Input Types on page 81.

3. Select **Add**.

   The item is displayed on the Inputs list.

4. Repeat Step 2 until you have added all of the inputs required for the report.

Deleting input fields from the input window

This section includes the following topics:

Before you begin

If a field is used in a query, you cannot remove the input until you remove or modify the query.

Procedure

To delete one of the inputs you have added for a report input window:

1. Select **Inputs** from the **Edit** menu.
2. On the **Inputs** table, select the left-numbered column of the row to highlight the row of the item.
3. Select **Remove**.

Editing the order of input fields

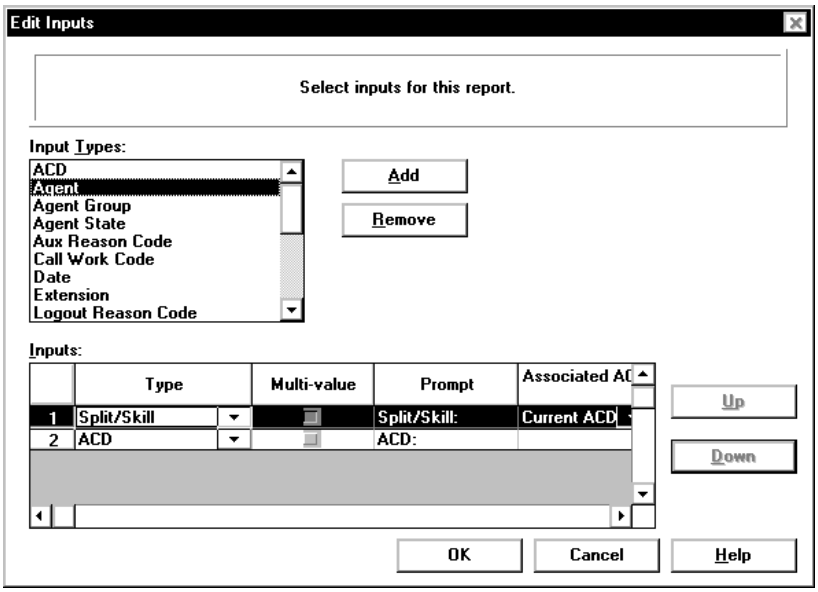
To change the order in which input fields appear on the report input window:

1. Select **Inputs** from the **Edit** menu.
2. Add the **Input Types** that will appear on the input window to the **Inputs** table.
3. Select the left-numbered column of the row to select the entire row of the input that contains the fields you want changed.
4. Press **Up** and **Down** to move the entire row up or down one row at a time.
5. Use the **Inputs** list to edit the name of the prompt for each input field, control whether multiple values are allowed in the input field, and define the ACD with which the input will be associated.
6. When you are finished with your edits, select **OK**.

Editing the appearance of input fields

Use the **Inputs** list to edit the name of the prompt for each input field, control whether multiple values are allowed in the input field, and define the ACD with which the input will be associated.

Example



Edit columns

When you add an item from the **Input Types** list to the **Inputs** list, the columns of the **Inputs** table are populated with the default values for that input item. The columns of the **Inputs** table are as follows:

Column	Function
Type	The **Type** column shows the input field name. You can use the pull-down list to the right of the column to change the input in a particular row to another type.
Multi-value	Select **Multi-Value** if you want to allow users to enter multiple values in the input field.

Column	Function
Prompt	The prompt column shows the text that will display on the report input window for this input field. To edit the text for the prompt, select the cell in the table and then enter the text that you want to display. If you want to delete the existing prompt text, use backspace to erase the letters. You can enter a name of up to 30 characters long, including blank spaces. The prompt name should describe the information (what split/skill, what date, what time, and so on) you must enter in the field when you order the report. For example, if you want to enter a date, **Date** would be an appropriate prompt. However, if you can enter more than one date in the field, **Dates** would be more appropriate.
Associated ACD	The **Associated ACD** column lets you use the **Current ACD** or assign a specific ACD to be used for this input. The default for this column is **Current ACD**. If you want to allow the user to pick a specific ACD for the input field, use the pull-down list to the right of the column to select ACD. If the **Associated ACD** column is blank, the input cannot be associated with a specific 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 current ACD for the user Select **ACD** if the people who run the report have read permissions for more than one ACD. Allowing the user to select the ACD for the input is most useful when you create a multi-ACD report.
Default Value	You can define a default value for most input fields. To do this, select browse to the right of the column. The available values for this type of input are displayed. Highlight one and select **OK**. If you select a default value, the user can change the value on the input window.

Setting up inputs for a multi-ACD report

Use this procedure to create a multi-ACD report. Make sure that you set up the inputs as detailed in this procedure so that the query for the report will work properly.

This section includes the following topics:

Types of multi-ACD reports

The following types of multi-ACD reports are available:

- Multi-ACD reports that show data for multiple splits/skills on multiple ACDs
- Multi-ACD reports that show data for multiple VDNs on multiple ACDs

Procedure

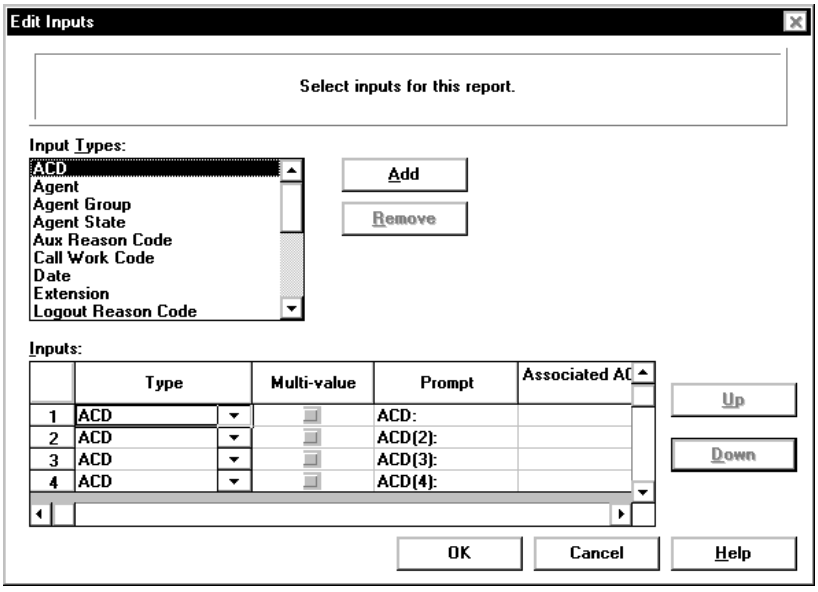
The following instructions use the split/skill multi-ACD report inputs as an example. To create the inputs for a VDN multi-ACD report, use the same instructions, but use the VDN input instead of the Split/Skill input.

To create the inputs for a multi-ACD report that allows inputs for up to four ACDs:

1. Select **Inputs** from the **Edit** menu.
2. Select **ACD** from the **Input Types** box.
3. Select **Add**.

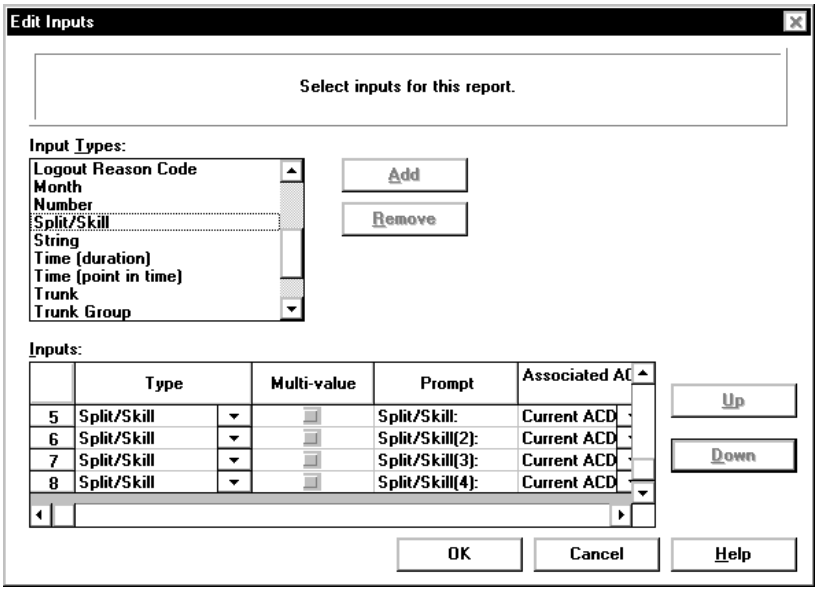
4. Repeat Steps 2 and 3 three times.

   The **Inputs** table will have three more ACD entries that are followed by numbers:



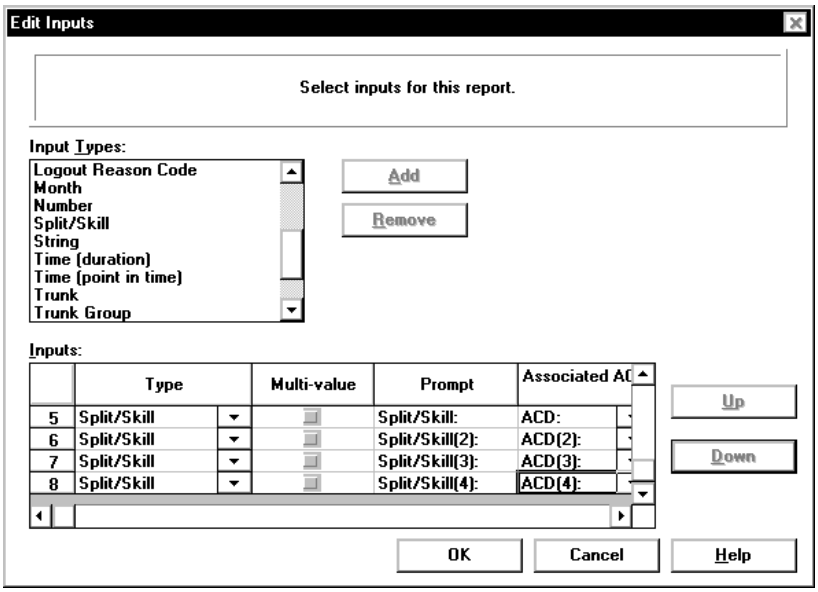
5. Select **Split/Skill** from the **Input Types** box.
6. Select **Add**.
7. Repeat Steps 5 and 6 three times.

   The **Inputs** table will have four split/skill entries that are followed by numbers:



8. For the **Split/Skill(2)** prompt on line 6 of the **Inputs** table, use the **Associated ACD** drop-down list to select **ACD(2)** as the associated ACD.
9. For the **Split/Skill(3)** prompt on line 7 of the **Inputs** table, use the **Associated ACD** drop-down list to select **ACD(3)** as the associated ACD.
10. For the **Split/Skill(4)** prompt on line 8 of the **Inputs** table, use the **Associated ACD** drop-down list to select **ACD(4)** as the associated ACD.

    The **Inputs** table will have each split/skill matched to the corresponding ACD:



11. Select **OK** to save the inputs for this multi-ACD report.

Viewing the input window

When to view - To view what the input window will look like, select **Run** from the **Report** menu.

Returning to design mode - To return to the design mode from the report input menu, select **Cancel**.

Chapter 6: Edit | Queries

This section describes the **Edit | Queries** menu option.

A report consists of fields, charts, and grids that display data that is retrieved from the Avaya Call Management System (CMS) database tables. Use a query to define what data is retrieved for a specific report.

Organization of general information

This section includes the following general information:

Organization of procedures

This section includes the following procedures:

About queries

To complete the definition of a report's tables, charts, or fields, you must define the queries that select the rows of the appropriate tables in the CMS database.

This section includes the following topics:

What are queries?

Queries are values for either *database items* or *calculations*. In most cases, the queries specify the input variables, rather than specific values, as criteria to retrieve information from the database. The input variables allow CMS to use the values entered in the Report Input window as the query criteria for the report.

If you change the prompt in the **Edit Inputs** window, it is automatically updated in the query.

Queries provide the CMS server with the following information:

- Where to get the data
- How to use the data

About columns and rows

CMS selects 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. CMS identifies columns according to the data expression you define.

Related topics

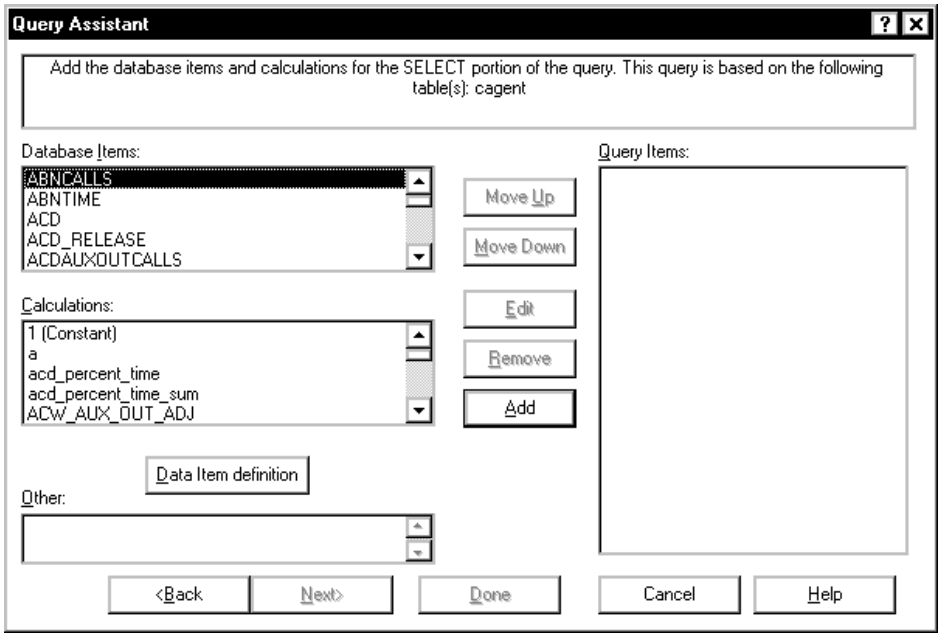
For more information, see the *Avaya CMS Database Items and Calculations* document.

The Query Assistant window

Use the **Query Assistant** window to define what data is retrieved for a specific report.

This section includes the following topics:

Example



Query Assistant input fields

The following table describes the **Query Assistant** input fields.

Field	Description
Database Items	Shows a list of all of the available database items, based on the tables you selected on the **Select a database and one or more tables for the query** window. If you selected more than one historical database table to be used in the query, the table names are appended to the database item names. For example, wsplit.acdtime.
Calculations	Shows a list of all of the available calculations, based on the tables you selected on the **Select a database and one or more tables for the query** window.
Other	Use this box to enter a database item name, calculation name, or other acceptable SELECT statement item (such as ACD) for the query.
Query Items	Shows a list of all of the database items and calculations that you have made available for use in the query.

Data Item definition

Use **Data Item definition** to see a definition of the database item or calculation.

Select a database and one or more tables for the query window

The **Table** list includes the database items you can include in the query. For real-time and integrated reports, you can select only one table name. For historical reports, you can select up to three table names.

Note:

The calculations that are associated with the database items in the tables you choose will also be available for you to use in your query.

Related topic

For information on the database items and calculations available in each table, see the *Avaya CMS Database Items and Calculations* document.

Add the database items and calculations for the SELECT portion of the query window

Use this window to add and remove database items and calculations that you want included in the query.

This section includes the following topics:

Tasks

Use the **Query Assistant** window to do the following tasks:

- Use **Move Up** and **Move Down** to change the order of the items in the **Query Items** box.
- Remove an item from the list, highlight an item in the **Query Items** list, and then select **Remove**.
- Edit an item in the **Query Items** box, highlight the item, and then select **Edit**. The **Select Edit** window is displayed.

  Example:

  To create a custom calculation in the edit box, add **callsoffered -** to the **abncalls** item. This changes the item to **callsoffered - abncalls**.

Database Items or Calculations

Enter the names of database items or calculations, strings, or constants that you want to use in the query by typing them in the **Other** text box.

Example: If you want the report to include information that subtracts the quantity of one database item from the quantity of another database item (for instance, ACDCALLS - ACDAUXOUTCALLS), then enter **a -** in the **Other** text box and add it to the list of **Query**

Items. When you create the WHERE clause for the query, you can specify a calculation of ACDCALLS - ACDAUXOUTCALLS for the report.

Note:

Constants that have been defined in the Dictionary are listed in the **Calculations** box in addition to the calculation.

Choose functions for the SELECT items window

Use the **Query Assistant** window to assign AVG, MAX, MIN, and SUM aggregate functions to the **Query Items**.

This section includes the following topics:

Definition of function

A function is a prefix that is attached to a database item, a calculation, parts of a calculation, or a calculation name. Avaya CMS will display only one value on the report if a SUM, AVG, MIN, or MAX aggregate function is assigned to a database item or calculation.

Types of functions

The available aggregate functions are described in the following table.

Aggregate function	Description
MAX	Retrieves the highest value for a calculation or database item over the time frame of the report
MIN	Retrieves the lowest value for a calculation or database item over the time frame of the report

Aggregate function	Description
SUM	Retrieves the sum of all values for a calculation or database item over the time frame of the report
AVG	Retrieves the average of all values found over the time frame of the report

Enter the SQL WHERE criteria window

Use this **Query Assistant** window to define the SQL WHERE clauses that you want to use to retrieve data for the report. The SQL WHERE clause tells the CMS to retrieve the data defined in the **SELECT** box that matches the criteria defined in the **WHERE** box. The **SELECT** box specifies which columns of data to consider in the database tables. The **WHERE** box species which rows of data to consider in the database tables.

Tips using this window

You can add your own text, such as parenthesis and numbers, in the WHERE clause by placing your cursor where you want the text to display and typing in the text.

If you want to create a report that will display data for multiple splits/skills or VDNs on multiple ACDs, you can enter `MULTI_ACD` in the WHERE clause, instead of entering each individual OR statement. This will only work if you have correctly set up the inputs for the multi-ACD report.

Field descriptions

This window includes the following fields:

Item	Description
SELECT box	Shows the **Query Items** that were defined on the previous windows, including the database items and calculations and any associated functions assigned to the items and the database table from which the database items and calculations are to be retrieved. The information displayed in the **SELECT** box cannot be edited.
Operand1 box	Lists the database items and calculations that can be used in the WHERE clause.
Operator box	Lists the standard mathematical operations that can be used in the WHERE clause.
Operand2 box	Lists the database items, calculations, and inputs that can be used in the WHERE clause and as inputs for the input window.
WHERE box	Shows the current WHERE clause.
AND button	Places an AND before the currently-selected **Operand1**, **Operator**, and **Operand2**. If you place AND between clauses, then both of the clauses must be true in order for CMS to retrieve the SELECT data from the table.
OR button	Places an OR before the currently-selected **Operand1**, **Operator**, and **Operand2**. If you place OR between clauses, then either of the clauses can be true in order for CMS to retrieve the SELECT data from the table.
New Input	Takes you to the **Edit Inputs** window, where you can add new input fields for the **Report Input** window. Any new inputs you add will display in the **Operand2** box.
Test button	Allows you to test the query for basic SQL syntax errors.

The ACD operand is automatically added to the beginning of each WHERE clause.

Specify all field joins for the tables window

Use this **Query Assistant** window to ensure that items between two or three tables are equal in order to be used in the report.

Example: You might want to select the ACD item from each agent and make a join clause to ensure that the report is for the same ACD information across the tables.

Create a new query for a real-time report

To create a new query for a real-time report:

1. Select **Query** from the **Edit** menu.

   The **Query Select** window is displayed.

2. Select **New**.

   A **Query Assistant** window is displayed. For more information on this window, see Select a database and one or more tables for the query window on page 94.

3. Select **Real-Time Database**.

4. In the **Table** list, highlight the name of the table that include the database items that you want to include in the query. For real-time reports, you can select only one table name.

5. Select **Next**.

   A **Query Assistant** window is displayed. For more information on this window, see Add the database items and calculations for the SELECT portion of the query window on page 95.

6. In either the **Database Items** or **Calculations** box, highlight the first database item or calculation that you will reference in the query.

7. Select **Add** or double-click the item.

   The item is listed in the **Query Items** box.

8. Repeat Steps 6 and 7 until all of the database items and calculation that you want referenced in the query are listed in the **Query Items** box.

9. Select **Next**.

   A **Query Assistant** window is displayed. For more information on this window, see Choose functions for the SELECT items window on page 96.

10. Highlight the first **Query Item** that you want to assign an aggregate function.

11. Highlight the **Function** that you want to assign an aggregate function.

12. Repeat Steps 10 and 11 until you have assigned **Functions** to the appropriate **Query Items**.
13. Select **Next**.

    A **Query Assistant** window is displayed. For more information on this window, see Enter the SQL WHERE criteria window on page 97.
14. In the **Operand1** box, highlight the first database item or calculation that you want considered in the WHERE clause.
15. In the **Operator** box, highlight the appropriate operation.
16. In the **Operand2** box, highlight the second database item or calculation that you want considered in the WHERE clause.

    Example: If you wanted the report to select the data from the table when the number of ACDCALLS is greater than the number of ACWINCALLS, you would select **acdcalls** in the **Operand1** box, the **>** sign in the **Operator** box, and **ACWINCALLS** in the **Operand2** box.
17. Select **AND** or **OR**, as appropriate.
18. Repeat Steps 14 through 17 until you have completed the query.
19. Select **Test**.

    CMS checks the syntax of the query and returns a message with any errors. For more information, see Appendix A: Error messages on page 173.
20. Correct any of the errors detected in the test.
21. Select **Next**.

    A **Query Assistant** window is displayed. Use this window to give your query a new name.
22. In the **Name** text box, enter the name that you want to assign to the query you created.
23. Select **Done**.

Create a new query for a historical report

To create a new query for a historical report:

1. Select **Query** from the **Edit** menu.

   The **Query Select** window is displayed.
2. Select **New**.

   A **Query Assistant** window is displayed. For more information, see Select a database and one or more tables for the query window on page 94.

3. Select **Historical Database**.

   The tables that are available for the historical database display.

4. In the **Table** list, highlight the names of the tables that include the database items that you want to include in the query. For historical reports, you can select up to three table names.
5. Select **Next**.

   A **Query Assistant** window is displayed. For more information, see Add the database items and calculations for the SELECT portion of the query window on page 95.

6. In either the **Database Items** or **Calculations** box, highlight the first database item or calculation that you will reference in the query.
7. Select **Add** or double-click the item. The item is listed in the **Query Items** box.
8. Repeat Steps 6 and 7 until all of the database items and calculations that you believe will be referenced in the query are listed in the **Query Items** box.
9. Select **Next**.

   A **Query Assistant** window is displayed. For more information, see Choose functions for the SELECT items window on page 96.

10. Highlight the first **Query** Item that you want to assign an aggregate function.
11. Highlight the function that you want to assign to the item.
12. Repeat Steps 10 and 11 until you have assigned functions to the appropriate **Query Items**.
13. Select **Next**.
14. Do one of the following tasks:

If	Then
You did *not* select more than one historical database table for your query	Go to Step 20.
You selected the **Historical Database** for your query and you are using more than one table in the query	The **Specify all field joins for the tables** window is displayed. For more information about this window, see Specify all field joins for the tables window on page 99. Go to Step 15.

15. Highlight an item in one of the table lists.
16. Highlight an item in one or both of the remaining table lists.
17. Select **Join**. The join clause is shown in the **Join Criteria** box.
18. Repeat Steps 15 through 17 until all of the necessary join clauses are listed.

19. Select **Next**.

    A **Query Assistant** window is displayed. For more information, see Enter the SQL WHERE criteria window on page 97.

20. In the **Operand1** box, highlight the first database item or calculation that you want considered in the WHERE clause.
21. In the **Operator** box, highlight the appropriate operation.
22. In the **Operand2** box, highlight the second database item or calculation that you want considered in the WHERE clause.

    Example: If you wanted the report to select the data from the table when the number of ACDCALLS is greater than the number of ACWINCALLS, you would select **acdcalls** in the **Operand1** box, the **>** sign in the **Operator** box, and **ACWINCALLS** in the **Operand2** box.

23. Select **AND** or **OR**, as appropriate.
24. Repeat Steps 20 through 23 until you have completed the query.
25. Select **Test**. CMS checks the syntax of the query and returns a message with any errors. For more information, see Appendix A: Error messages on page 173.
26. Correct any of the errors detected in the test.
27. Select **Next**.

    A **Query Assistant** window is displayed. Use this window to give your query a new name.

28. In **Name**, enter the name that you want to assign to the query you created.
29. Select **Done**.

Create a new query for an integrated report

To create a new query for an integrated report:

1. Select **Query** from the **Edit** menu.

   The **Query Select** window is displayed.

2. Select **New**.

   A **Query Assistant** window is displayed. For more information, see Select a database and one or more tables for the query window on page 94.

3. Select **Database** next to **Integrated**.

   The tables that are available for integrated reports are displayed.

4. In the **Table** list, highlight the name of the table that includes the database items or calculations that you want to include in the query.

   For integrated reports, you can select one table per query.

   For information on the database items and calculations available in each table, see the Avaya CMS Database Items and Calculations document.

5. Select **Next**.

   A **Query Assistant** window is displayed. For more information, see Add the database items and calculations for the SELECT portion of the query window on page 95.

6. In either the **Database Items** or **Calculations** box, highlight the first database item or calculation that you will reference in the query.

7. Select **Add**.

   The item is listed in the **Query Items** box.

8. Repeat Steps 6 and 7 until all of the database items and calculations that you believe will be referenced in the query are listed in the **Query Items** box.

9. Select **Next**.

   A **Query Assistant** window is displayed.

10. Select **Input Start Time** or **Select Start Time Now**.

11. Do one of the following tasks:

If you selected	Then
Select Start Time Now	Define the time that the integrated data will always begin accumulating for this report.
Input Start Time	A **Start Time** field will be added to the report input window and users can individually define the time that data will begin accumulating for the report.

12. Select **Next**.

    A **Query Assistant** window is displayed. On this window, you can choose the input item that will be used for the query.

13. Highlight the inputs you want to use as criteria for the query. You can create a new input by selecting **New Input**, that takes you to the **Edit Inputs** assistant.

    Only the inputs that apply to the table you selected for this query are displayed.

14. Select **Next**.

    A **Query Assistant** window is displayed. On the **Query Assistant: Select the input used to indicate the agent or split/skill for this query** window, you can choose the input item that will be used for the query.

15. In the **Name** text box, enter the name that you want to assign to the query you created.
16. Select **Done**.

Edit an existing real-time or historical query

Complete the following steps from the **Report Designer Design Mode** window.

To edit an existing real-time or historical query used in a Designer Report:

1. Select **Query** from the **Edit** menu.

   The **Query Select** window is displayed.

2. In the **Queries** box, highlight the name of the query you want to edit.
3. Select **Edit**.

   A **Query Assistant** window is displayed. The Database Items and Calculations that are already included in the query are listed in the **Query Items** list.

4. Do one of the following tasks:

If you want to …	Then …
Add database items or calculations to the **Query Items** list	Select **Add**.
Remove a database item or calculation from the **Query Items** list	Highlight the item in the list and then select **Remove**.
Edit a database item or calculation on the **Query Items** list	Highlight the item in the list and then select **Edit**.

Example:

To edit an item, create a custom calculation in the edit box. For instance, you may add **callsoffered -** to the abncalls item, so that the item would then read **callsoffered - abncalls**. That is the calculation that would be available for you to use in the query.

5. Repeat Step 4 until all of the database items and calculations that you believe will be referenced in the query are listed in the **Query Items** box.
6. Select **Where**.

   A **Query Assistant** window is displayed. For more information, see Enter the SQL WHERE criteria window on page 97.

7. In the **Operand1** box, highlight the first database item or calculation that you want considered in the WHERE clause.
8. In the **Operator** box, highlight the appropriate operation.
9. In the **Operand2** box, highlight the second database item or calculation that you want considered in the WHERE clause.

   Example: If you want the report to select the data from the table when the number of ACDCALLS is greater than the number of ACWINCALLS, you would select **acdcalls** in the **Operand1** box, the **>** sign in the **Operator** box, and **ACWINCALLS** in the **Operand2** box.
10. Select **AND** or **OR**, as appropriate.
11. Repeat Steps 7 through 10 until you have completed the query.

    You can add your own text in the WHERE clause, such as parenthesis and numbers, by placing your cursor where you want the text to display and enter in the text.
12. Select **Test**.

    CMS checks the syntax of the query and returns a message with any errors.
13. Correct any of the errors detected in the test.
14. Select **Save**.

    The changes to the query are saved and the **Query Select** window is displayed.

Edit an existing integrated query

Complete the following steps from the Report Designer Design Mode window.

To edit an existing integrated query used in a Designer Report:

1. Select **Query** from the **Edit** menu.

   The **Query Select** window is displayed.
2. In the **Queries** box, highlight the name of the integrated query you want to edit.
3. Select **Edit**.

   A **Query Assistant** window is displayed. For more information, see Add the database items and calculations for the SELECT portion of the query window on page 95.
4. In either the **Database Items** or **Calculations** box, highlight the first database item or calculation that you will reference in the query.
5. Select **Add** or double-click the item.

   The item is listed in the **Query Items** box.

6. Repeat Steps 4 and 5 until all of the database items and calculations that you believe will be referenced in the query are listed in the **Query Items** box.
7. Select **Next**.

   A **Query Assistant** window is displayed.
8. Select **Input Start Time** or **Select Start Time Now**.
   - If you select **Select Start Time Now**, you need to define the time that the integrated data will always begin accumulating for this report.
   - If you select the **Input Start Time**, a **Start Time** field will be added to the report input window and users can individually define the time that data will begin accumulating for the report.
9. Select **Next**.

   A **Query Assistant** window is displayed. Use this window to choose the input item that will be used for the query.
10. Highlight the inputs you want to use as criteria for the query. You can create a new input by selecting **New Input**, that takes you to the **Edit Inputs** assistant.

    Only the inputs that apply to the table you selected for this query are displayed.
11. Select **Save**.

Copy a query

To copy an existing query, complete the following steps from Report Designer Design Mode:

1. Select **Query** from the **Edit** menu.

   The **Query Select** window is displayed.
2. In the **Queries** box, highlight the name of the query you want to copy.
3. Select **Copy**.

   The **Copy Query** window is displayed.
4. In the **To** text box, enter the name you want to assign to the copied query.
5. Select **OK**.

   The query is copied to the new name and the **Query Select** window is displayed, including the new query in the **Queries** list.

Delete a query

Important:
If you delete a query that is used in the report, the report will not run.

Complete the following steps from Report Designer Design Mode.

To delete an existing query:

1. Select **Query** from the **Edit** menu.

   The **Query Select** window is displayed.
2. In the **Queries** box, highlight the name of the query you want to delete.
3. Select **Delete**.

   A message confirming the delete is displayed.
4. Select **OK** to delete the query.

Chapter 7: Insert | Chart

This section describes the **Insert | Chart** menu option.

Once you have defined queries for a report, you can use those queries to add a chart to your report using the **Chart Assistant**, which is accessed by selecting **Chart** from the **Insert** menu.

This section includes the following topics:

Related topic

For more information about defining queries for a report, see Edit | Queries on page 91.

Information about how to insert charts

This section includes the following topics:

About inserting charts

There are two things to keep in mind when inserting charts onto a report:

- When you insert a chart on a report, the chart is shown with sample data. This helps you visualize how the chart will display when you run the report.

- Each item is initially inserted in the upper-left corner of the report. You need to drag-and-drop the chart to the location where you want it to be displayed on the report.

About charts and tables

If the report includes both a chart and a table, you need to place the chart above the table on the report. The reason for this is that if the table spans multiple pages when printed and if the chart is below the table, the table will print above the chart.

About fields and text

Do not position any fields or text over the chart because the chart will be displayed over the field or text, so that the field or text are not visible.

About adding and removing items

The following items should be read and understood about the adding and removing of items:

- Use **Move Up** and **Move Down** to arrange the items in the order in which you want them displayed on the chart.
- Items that are added to the **Data on Chart** box are shown in the chart you want to create.
- The maximum number of columns that can be included on a chart is 16.
- If you want to create a chart that uses categories and series as controls on the axis, you need to verify that the first item listed on the **Data on Chart** box is the item that you want to use as the series for the chart.

Stacked, % Axis, and Gradiant field descriptions

The following table describes the **Stacked**, **% Axis**, and **Gradiant** field descriptions.

Field	Description
Stacked	Displays the data for all series as stacked rather than displaying the data separately. This check box is disabled for pie charts.
% Axis	Displays the value axis (y-axis) as percentages rather than as actual data values. You can combine this with the stacked check box to produce a percentage-stacked chart.
Gradient	Specifies the backdrop of a chart as a solid color, a gradient, or as a smooth transition from one color to another. The gradient transition can be one of the following items: • Horizontal • Vertical • Rectangle • Oval The quality of the gradient effect will vary, depending on the video card installed in the PC, and for printed reports, on the capabilities of the printer.

About the Chart Assistant window

Use this window to define how the data will be displayed on the axis of the chart.

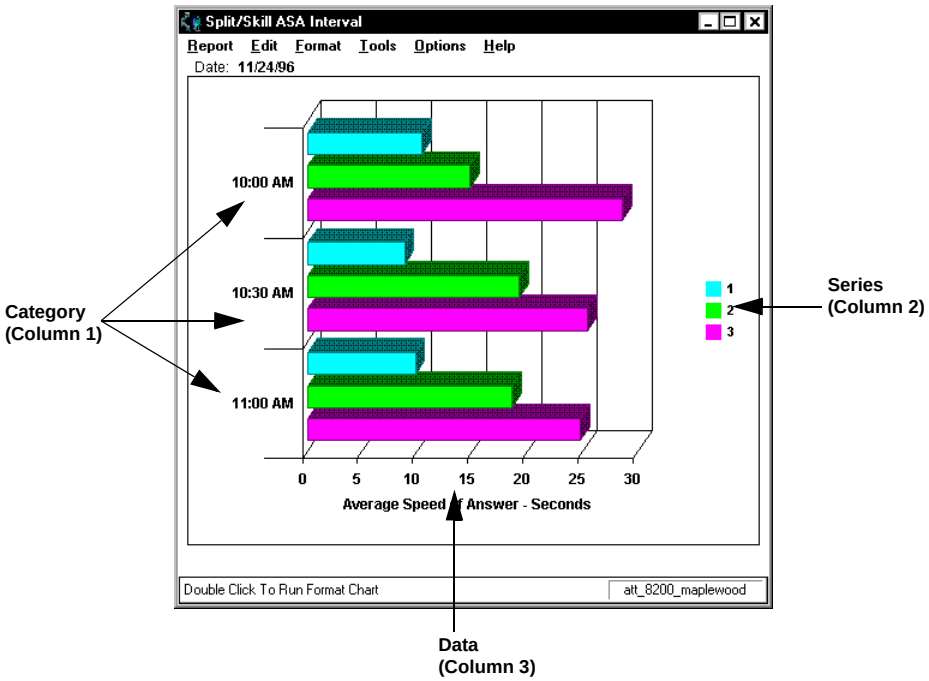
Column descriptions

There are three columns used to define the category and series for the chart. The information gathered by each column is as follows:

- Column 1 - Category (can be **none**)
- Column 2 - Series (usually **Split**)
- Column 3 - Data

In the following example, the **Category** (Column 1) is the **Time** that was selected on the input window, the **Series** are the **Splits** that were selected on the input window, and the **Data** is the data that was retrieved from the Avaya Call Management System (CMS) database for those splits/skills on the specified date for the specified time period.

Example



Inserting a chart

This section includes the following topics:

Before you begin

Read Information about how to insert charts on page 109, if you have not already done so.

Procedure

To insert a chart in your report:

1. Select **Chart** from the **Insert** menu.

   The first window of the **Chart Assistant** is displayed.

2. From the **Queries** drop-down list, select the query from which you want to take data for the chart.

   Note:

   Any created queries that still include errors are unavailable.

   The **Available Data** box is populated with the data that was previously defined for the query.

3. Use **Add**, **Add All**, **Remove**, and **Remove All** to add items from the **Available Data** box to the **Data on Chart** box and to remove items.

   For more information, see About adding and removing items on page 110.

4. Select **Next**.

   A **Chart Assistant** window is displayed.

   To change any of the options you select in the following steps at any time after you insert the chart on the report, select the **Format | Chart** menu item.

5. Do one of the following tasks:

If you want the chart to display in …	Then select …
Two-dimensional format	**2D**
Three-dimensional format	**3D**

6. From the **Chart Types** box, select which type of chart you want to display. If you are not sure what each type of chart will look like, you can highlight the type and an example of the chart displays on the right side of the window.

7. Select **Stacked**, **% Axis**, and **Gradient**, as appropriate.

   For more information, see Stacked, % Axis, and Gradiant field descriptions on page 111.

   Note:

   Select **Stacked** if you want to select **% Axis**.

8. Select the **Rolling** check box if you want the real-time chart report to scroll through the refreshes as they occur. If you select the Rolling check box, you need to define the **Number of Data Points**, or refreshes, that you want included on the chart.

9. Select **Next**.

   A **Chart Assistant** window is displayed.

   For more information, see About the Chart Assistant window on page 111.

10. In the **Category Available Data** box, select the database item that you want to use as the category for the chart. The **Category** is usually **none** for real-time charts, or a time database item for historical charts. As you select from the list of available items, the currently selected item moves to the top of the **Available Data** list and the example on the right side of the window reflects what the chart might look like with that item selected as the chart **Category**.
11. Select the **Show Value as Name** check box if you want to show the selected category as a Dictionary name.

    Note:

    This check box is available only when the selected category is an item that can be defined in the Dictionary.

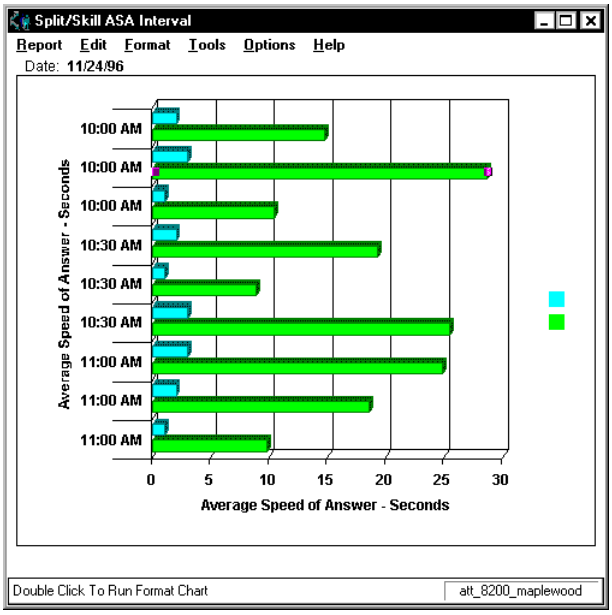
12. Select the **Format** in which the category will display. Use the drop-down list to select from the applicable formats for the selected category. If you want to view all of the available formats for all types of data, select the **Show All Formats** check box.

13. Select the **One Data Value per Row** check box to show one line of data when multiple rows of data are retrieved in the query. When **One Data Value per Row** is selected, the first item listed in the **Category Available Items** box is the item that is used for the chart category.

    The previous example showed a report with **One Data Value per Row** selected.

    Example:

    This is an example of the same report, using the same **Category item (STARTTIME)**, without **One Data Value per Row** selected.



    In the first example, you can see that the report shows one row of data for the interval beginning at 10:00 AM, one row of data that includes information for each split/skill for the interval beginning at 10:30 AM, and one row of data for the interval beginning at 11:00 AM. In the second example, there is a row of data shown for *each* split/skill for each interval.

14. Select **Done**.

Chapter 8: Insert | Field

This section describes the **Insert | Field** menu option.

The time or date when a report is run is not stored in any database table. The Avaya Call Management System (CMS), if requested, displays information from the start time specified by the user (for integrated and historical data). Similarly, CMS knows what the currently selected ACD is when you run a report and can display the current ACD name or number on the report.

Organization of general information

Information about how to insert fields on page 117

Organization of procedures

This section includes the following procedures:

Information about how to insert fields

This section includes the following topics:

About Field Assistant

The **Field Assistant** allows you to insert fields in a designer report to display the report's run-time, run-date, current ACD, data, or any of the fields that were specified as being required in the report input window. Select **Field** from the **Insert** menu to access the **Field Assistant**.

Positioning a field

Each item is initially inserted in the upper-left corner of the report. You will need to drag-and-drop the field to the location where you want it to be displayed on the report.

Editing a field

To edit a field:

1. Select the field.
2. Choose **Field** from the **Format** menu.

Using the Field Assistant window

To use the **Field Assistant** window:

1. Select **Field** from the **Insert** menu.

   The Field Assistant **Select a field type** window is displayed.

2. Select an item from the **Types** list.

   Note:

   The **Report Data Start Time** type is available only with an Integrated Report.

3. Do one of the following tasks:

If you highlighted …	Then …
ACD Name, **Report Data Start Time**, or **Time Report Run**	Go to Step 4.
Data Item	Select **Next**. Go to the **Field Assistant: Select a query and associated data item for this field** window.
Input Value	Select **Next**. Go to the **Field Assistant: Select an input for your field** window.

4. Select **Done**.

   The field is inserted in the upper-left corner of the report.

Inserting an ACD Name field

Important:
Do not position the field over any tables or charts because the table or chart will be displayed over the field so that the field will not be visible.

To insert the name of the ACD for which the report was run:

1. Select **Field** from the **Insert** menu.

   The **Field Assistant** wizard is displayed.

2. Highlight **ACD Name in the Types** box.
3. Select **Done**.

   The ACD name field is placed in the upper-left corner of the report.

4. Select the item and drag-and-drop it to the location where you want it displayed in the report.

Inserting Data Item fields

This section includes the following topics:

Before you begin

Before you can insert a data item on a report, the data item must be used in a query that is associated with this report.

Procedure

Important:
Do not position the field over any tables or charts because the table or chart will be displayed over the field, and the field will not be visible.

To insert data item fields on the report:

1. Select **Field** from the **Insert** menu.

   The **Field Assistant** wizard is displayed.

2. Highlight **Data Items in the Types** box.
3. Select **Next**.

   A **Field Assistant** window is displayed.

4. Highlight the name of the query from which you want to select the data item.

   The available data items for the selected query display in the **Available Data** box.

5. Highlight the data item that you want to display on the report.
6. Select **Done**.

   The **Data Item** field is placed in the upper left corner of the report.

7. Select the item and drag-and-drop it to the location where you want it displayed in the report.

Inserting Input Value fields

Important:
Do not position the field over any tables or charts because the table or chart will be displayed over the field, and the field will not be visible.

To insert input value fields on the report:

1. Select **Field** from the **Insert** menu.

   The **Field Assistant** wizard is displayed.

2. In the **Types** box, highlight the **Input Value**.
3. Select **Next**.

   The **Select an input for your field** window is displayed.

4. Highlight the name of the input that you want to show on the report, or create a new input by selecting **New Input**. The Edit Inputs wizard is displayed. For information about how to create inputs for a report, see Edit | Inputs on page 75.
5. Select **Done**.

   The **Input Value** field is placed in the upper left corner of the report.

6. Select the item and drag-and-drop it to the location where you want it displayed in the report.

Inserting a Report Data Start Time field

Important:
Do not position the field over any tables or charts because the table or chart will be displayed over the field, and the field will not be visible.

This type of field applies to only integrated reports.

To insert the initial start time (the time at which data begins accumulating) for an integrated report:

1. Select **Field** from the **Insert** menu.

   The **Field Assistant** wizard is displayed.

2. In the **Types** box, highlight **Report Data Start Time**.

3. Select **Done**.

   The **Report Data Start Time** field is placed in the upper-left corner of the report.

4. Select the item and drag-and-drop it to the location where you want it displayed in the report.

Inserting a Time Report Run field

Important:
Do not position the field over any tables or charts because the table or chart will be displayed over the field, and the field will not be visible.

To insert on the report the time at which the report was run:

1. Select **Field** from the **Insert** menu.

   The **Field Assistant** wizard is displayed.

2. In the **Types** box, highlight **Time Report Run**.

3. Select **Done**.

   The **Time Report Run** field is placed in the upper left corner of the report.

4. Select the item and drag-and-drop it to the location where you want it displayed in the report.

Chapter 9: Insert | Text

This section describes the **Insert | Text** menu option.

Report Designer allows you to include text strings with no associated data on your report. You will use the **Text** option from the **Insert** menu to add items such as the report name to your designer reports.

This section includes the following procedures:

Positioning and editing text

This section includes the following topics:

Positioning text

Each item is initially inserted in the upper-left corner of the report. You will need to drag-and-drop the text to the location where you want it to be displayed on the report.

Editing text

To edit text:

1. Select the text.
2. Select **Text** from the **Format** menu.

Inserting text

Important:

Do not position the text over any tables or charts because the table or chart will be displayed over the text, and the text will not be visible.

To insert a text string on a report:

1. Select **Text** from the **Insert** menu.

   The **Text Assistant** window is displayed.

2. Enter the text that you want to display on the report in the **Text contents** field.

3. Do one of the following tasks:

If you want to …	Then …
Select a specific font for the text	Go to Step 4.
The default font set	Go to Step 7.

4. Select **Font**.

   The **Font selector** window is displayed.

5. Select the **Font**, **Style**, **Point size**, **Effects**, and **Script** that apply to the text string you want to create.

6. Select **OK**.

7. On the **Text Assistant** window, select **OK** to insert the text string and close the window, or select **Apply** to apply the changes you made and keep the window open.

   The text is inserted, by default, in the upper-left corner of the **Design Mode** window. You can use the cut, copy, or drag-and-drop method, as outlined in Report Designer basics on page 55, to move the text to the appropriate location on the report.

Chapter 10: Insert | Table

This section describes the **Insert | Table** menu option.

Once you have defined the queries that you want to use for a report, you can use those queries to add a table to the report with the **Table Assistant**. To access **Table Assistant**, select **Table** from the **Insert** menu.

This section includes the following procedures:

- Positioning and editing tables on page 125
- Inserting a table on page 126

Related topic

For more information about defining queries, see Edit | Queries on page 91.

Positioning and editing tables

This section includes the following topics:

- Positioning a field on a table on page 125
- Editing a table on page 125

Positioning a field on a table

Each item is initially inserted in the upper-left corner of the report. Drag-and-drop the field to the location where you want it to be displayed on the report.

Editing a table

To edit a table:

1. Select the table.

2. Select **Table** from the **Format** menu.

Inserting a table

This section includes the following topics:

Before you begin

If the report includes both a chart and a table, place the chart over the table on the report. The reason for this is, if the table spans multiple pages when printed and if the chart is below the table on the report, the table will print over the chart so that you cannot see the chart.

Procedure

Important:

Do not position text and fields over the table because the table will be displayed over the text/field, and the text/field will not be visible.

To insert a table on a report:

1. Select **Table** from the **Insert** menu.

   A **Table Assistant** window is displayed.

2. From the **Queries** drop-down list, select the query from which you want to take data for the table.

   Note:

   Any created queries that still include errors are unavailable.

   The **Available Data** box populates with the data that was previously defined for the query.

3. Use **Add**, **Add All**, **Remove**, and **Remove All** to add items from the **Available Data** box to the **Data on Table** box and remove items.

   - Use **Move Up** and **Move Down** to place the data items shown in the **Data on Table** box in the order you want them to be displayed on the table.
   - Items that are added to the **Data on Table** box are shown in the table you want to create.

4. Select **Next**.

   The **Table Assistant** window is displayed.

   Note:

   You can change any of the options you select in Steps 5 through 10 after you have inserted the table with **Format | Table**.

5. Select either **Horizontal** or **Vertical** to define the orientation of the table.
6. Add a Summary line to the table by doing one of the following tasks:

If …	**Then …**
You want to place the **Totals** line at the top of the table as standard CMS reports do	Select **Top**.
You want to place the **Totals** line at the bottom of the table	Select **Bottom**.
You do *not* want to include a **Totals** line on this table	Select **None**.

7. Select the **Headers On** check box if you want to include column headers on the table.
8. Select the **Grid Lines On** check box if you want the table to include lines between the columns and rows.
9. Choose one of the following tasks:

If …	**Then …**
You elected *not* to include a Summary line on the table	Select **Done**. The **Table Assistant** is closed and the table is placed on the report template.
You elected to include a Summary line on the table	Select **Next** and go to the next step. A **Table Assistant** window is displayed.

10. Choose one of the following tasks:

If you want to …	Then …
Create a new query for the summary line on this table	Go to Step 11.
Use an existing query for the summary line on this table	Go to Step 15.

11. Select **Build a New Query**.
12. Enter a name for the summary query in the **Name** field.
13. Edit the table to include the database items and summary information that is appropriate for this summary query.
14. Go to Step 17.
15. Select **Select an Existing Query**.

    A **Table Assistant** window is displayed.
16. Select the name of one of the existing queries from the drop-down **Queries** list.
17. Select **Done**.

Chapter 11: Format | Chart

This section describes the **Format | Chart** menu option.

Report Designer allows you to format report charts after they have been inserted on the report. You will use the **Chart** option from the **Format** menu to edit charts on your designer reports.

Organization of general information

This section includes the following general information:

Organization of procedures

This section includes the following procedures:

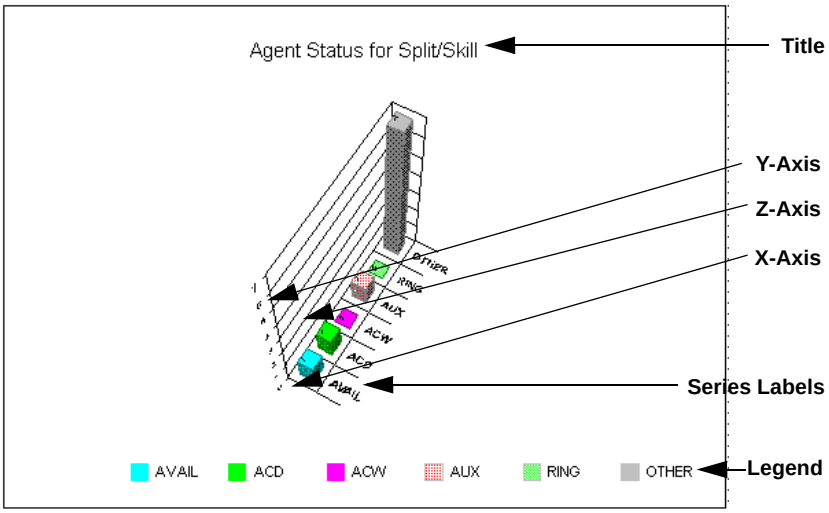
Information about how to format charts

This section includes the following topics:

What are charts?

Charts provide a graphical representation of data. Values or data points are displayed in formats such as bars, lines, filled areas, and pie charts. These data points are grouped into series that are identified with unique colors. In many chart types, one data point from each series is grouped together by category across an axis. A chart can also have a title and a legend. Categories are plotted along the x-axis, values are plotted along the y-axis. A two-dimensional chart shows series next to each other, while a three-dimensional chart plots series along the z-axis.

Example



About the Chart Format Options window

The **Chart Format Options** window gives you access to the **General**, **Axis**, **Data**, **Data Labels**, **Fonts**, **Series Labels**, **Legend**, **Title**, **Type**, and **3D Effects** tabs for formatting charts on reports.

How to access the window

If the report you want to design includes a chart, you can format how the chart is displayed and what is displayed on the chart. Access the **Chart Format Options** window by doing any of the following tasks:

- Double-click a chart in the report.
- Select **Chart** from the **Format** menu.
- Select **Format Chart** from the right mouse button pop-up menu.

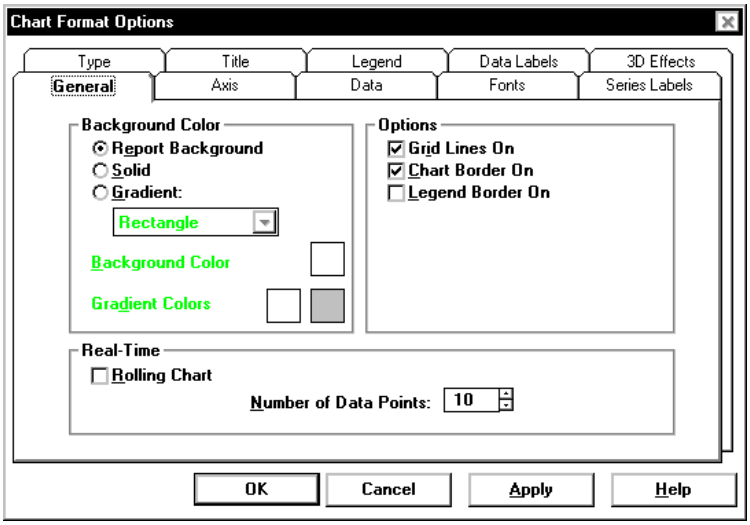
How your changes affect others

The changes you make to a report's format affect only your view of the report. The changes do not affect how other CMS users see the report unless you are in Design Mode.

General tab

Select the **General** tab to specify several general options that apply to the chart.

Example



General tab options

You can change the following chart parameters:

- **Background Color** - You can specify whether the backdrop of the chart is a solid color or whether it is displayed as a gradient. The gradient transition can be one of the following options: horizontal, vertical, rectangle, or oval. The quality of the gradient effect will vary depending on what video card is installed in the PC. The quality of the gradient effect for printed reports depends on the capabilities of the printer.
- **Options** - Select the check boxes, as appropriate, to include or omit grid lines, chart borders, and legend borders on the report.
- **Real-Time** - If the chart is part of a real-time report and is a rolling chart, you can specify the number of data points to be displayed in the chart. Permitted values are 2 through 100, with 10 the default. A rolling chart is a line chart that is initially displayed with no data points. For each refresh of the report, a data point is added. As data points are added, the chart “rolls” from left to right. When enough refreshes have occurred that the chart displays the number of specified data point, at the next refresh, the oldest data point is dropped from the display and the newest data point is displayed.

Changing general chart parameters

To change general chart parameters:

1. In the **Background Color** box, select **Report Background**, **Solid**, or **Gradient**.

If you select …	Then …
Report Background	The background of the report will default to the color you set on the **Options Report Colors** tab which is accessed from the **Controller Tools** menu.
Solid	Select the square next to the **Background Color** option to set the color of the report background.
Gradient	The report background will combine the two colors you select in the squares to the right of the **Gradient Colors** option. You can select the type of gradient that will be used from the drop-down list below the **Gradient** option. The available types are horizontal, vertical, rectangle, and oval.

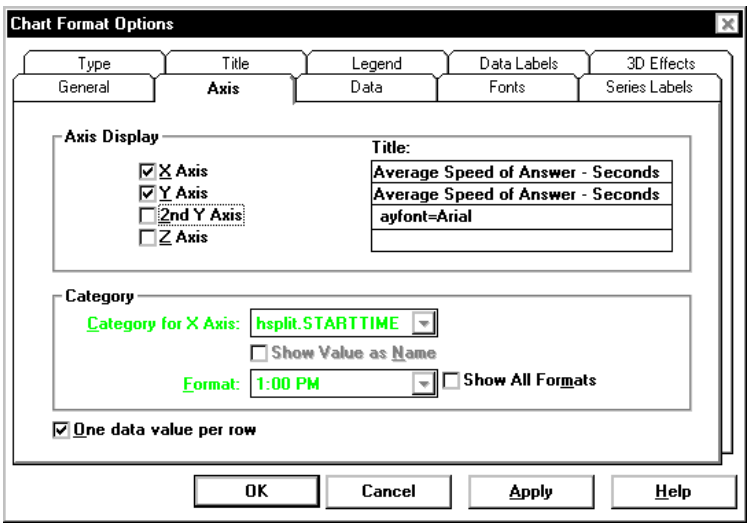
2. In the **Options** box, select the check boxes, as appropriate.
   - Select **Grid Lines On** to include the lines between rows and columns on any grid that displays on the chart.
   - Select **Chart Border On** to include a border around the chart.
   - Select **Legend Border On** to include a border around the chart legend.
3. If the report you want to design is a real-time report, or if it is a real-time component of an integrated report, you can make the chart a rolling chart. To do this, select the **Rolling Chart** check box and then define the **Number of Data Points** that you want displayed on the chart.

   Permitted values for the number of data points are 2 through 100.
4. Select **Apply** to make the changes and to keep the **Chart Format Options** window open.
5. Select **OK** to make the changes and to close the **Chart Format Options** window.

Axis tab

Use the **Axis** tab to specify the title that will be displayed on each axis of the chart report.

Example



Axis tab options

You can change the following chart parameters:

- Axis Display on page 134
- Category on page 135

Axis Display

Makes each of the axes visible or invisible. The choices are **X Axis**, **Y Axis**, **2nd Y Axis**, and **Z Axis**.

The **2nd Y Axis** is available only for bar charts. Select this check box to display the y-axis information on the right side of the bar chart. This is in contrast to the standard y-axis that displays on the left side of the chart.

The **Z Axis** is available only for 3D bar charts. Select this check box to make the chart look 3-dimensional.

Category

Select the category, or database item, that you want to use as the x-axis on the chart. You can use the drop-down menu to select any of the database items you included in the query for this chart.

- **Category for X-Axis** - This item is the same as the **Available Items** box in the **Insert Query Chart Assistant**. Select the database item that you want to use as the category for the chart. The **Category** is usually **none** for real-time charts, or a time database item for historical charts.

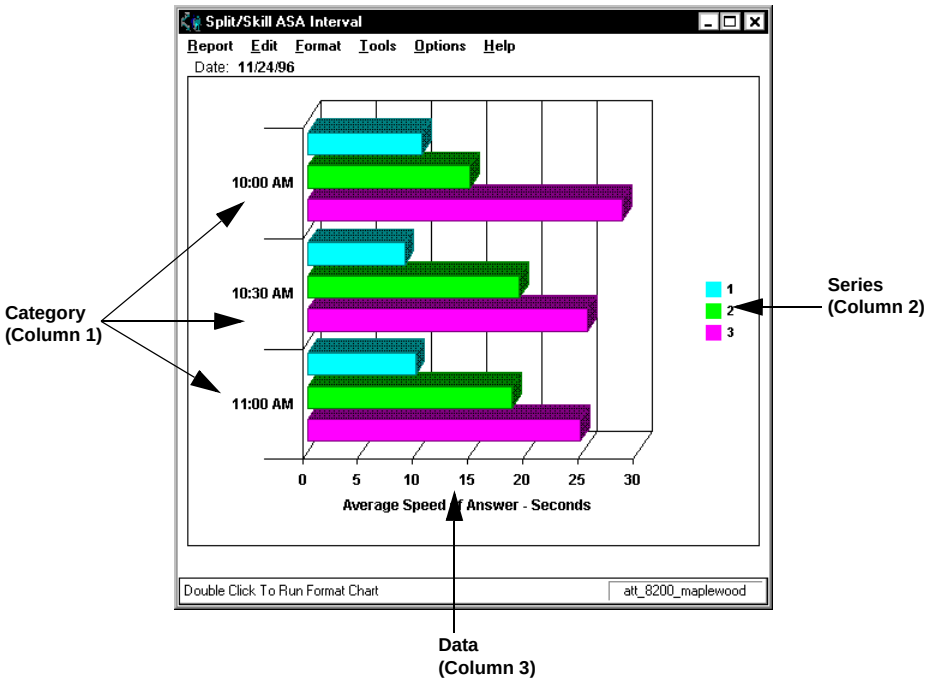
  There are three columns used to define the category and series for the chart. The information gathered by each column is as follows:

  - Column 1 - **Category** (can be **none**)
  - Column 2 - **Series** (usually **Split**)
  - Column 3 - **Data**

- **Show Value as Name** - This item shows the selected category as a Dictionary name.
- **Format** - Use the drop-down list to select the applicable formats for the selected category. If you want to view all of the available formats for all types of data, select the **Show All Formats** check box.
- **One data value per row** - Shows one line of data when multiple rows of data are retrieved in the query. When **One Data Value per Row** is selected, the first item listed in the **Category for X-Axis** drop-down list is the item that is used for the chart category.

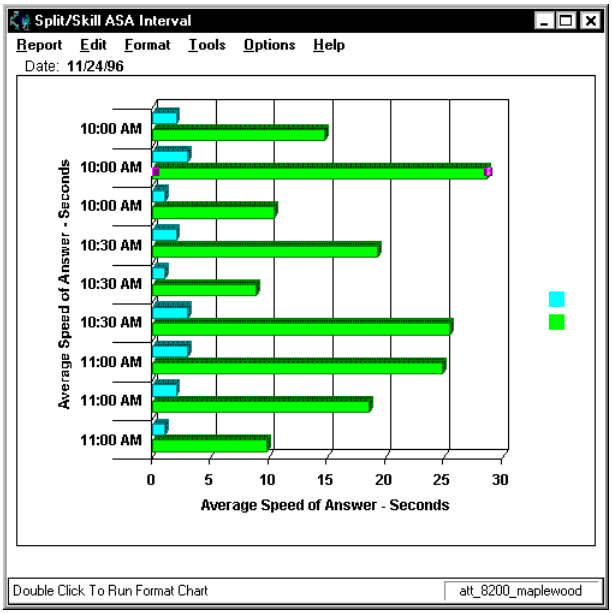
Example 1

In the following example, the **Category** (Column 1) is the time that was selected on the input window, **Series** are the splits that were selected on the input window, and **Data** is the data that was retrieved from the CMS database for those splits/skills on the specified date for the specified time period. Also, the **Show Value as Name** field was not checked.



Example 2

The previous example showed a report with **One Data Value per Row** selected. Following is an example of the same report, with the same **Category** item (**STARTTIME**), without **One Data Value per Row** selected.



In the first example, you can see that the report shows one row of data for the interval beginning at 10:00 AM, one row of data that includes information for each split/skill for the interval beginning at 10:30 AM, and one row of data for the interval beginning at 11:00 AM. In the second example, there is a row of data shown for *each* split/skill for each interval.

Changing axis titles

To change the title that will display on each axis of the chart report:

1. Depending on the type of chart you are formatting, select the appropriate **Axis** check box.

   The following are examples of chart types: bar, line, area, step, clustered bar, horizontal bar, or pie as selected on the **Type** tab.

2. In the appropriate text box, enter the title you want assigned to the axis.
3. In the **Category for X-Axis** box, which is the same as the **Available Items** box in the **Insert Query Chart Assistant**, select the database item that you want to use as the category for the chart. The **Category** is usually **none** for real-time charts, or a time database item for historical charts.

4. Select the **Show Value as Name** check box if you want to show the selected category as a Dictionary name. This check box is available only when the selected category is an item that can be defined in the Dictionary.
5. Select the **Format** in which the category will be displayed.

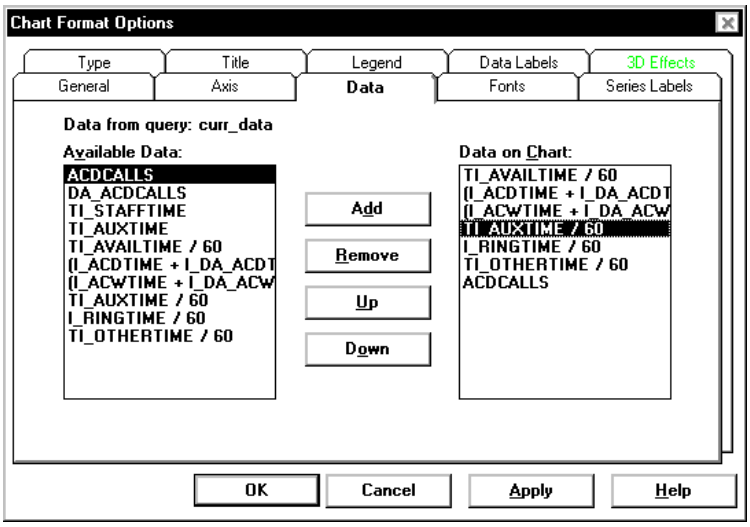
   Use the drop-down list to select from the applicable formats for the selected category. If you want to view all of the available formats for all types of data, select the **Show All Formats** check box.
6. Select the **One Data Value per Row** check box to show one line of data when multiple rows of data are retrieved in the query.

   When **One Data Value per Row** is selected, the first item listed in the **Category for X-Axis** drop-down list is the item that is used for the chart category.
7. Do one of the following actions:
   - Select **Apply** to make the changes and to keep the **Chart Format Options** window open.
   - Select **OK** to make the changes and to close the **Chart Format Options** window.

Data tab

Use the **Data** tab to add, remove, or rearrange data items in the chart. The available data items are the data items that are specified in the query that this chart uses.

Example



Data tab options

You can change the following chart parameters:

- **Available Data** - Lists all of the data items that are available, based on the query you used for the chart or table.
- **Data on Chart** - Displays the data items that are currently used in the chart.

Adding, removing, or rearranging data items

To add, remove, or rearrange data item:

1. Do one of the following actions:

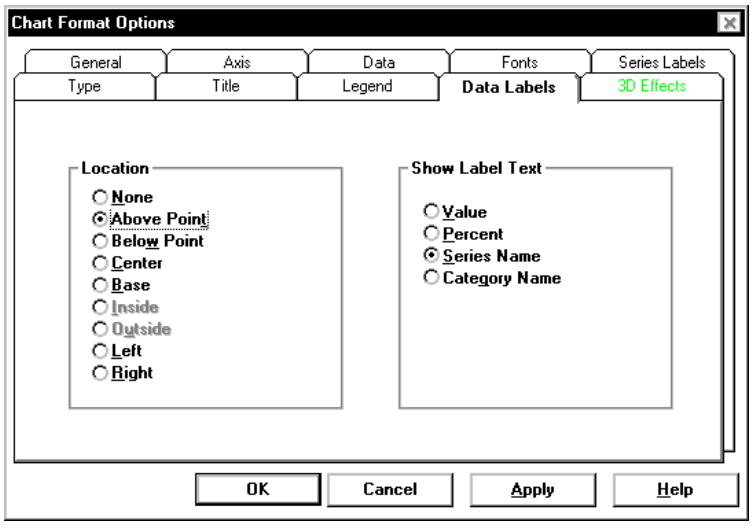
To …	Then select an item on the Data on Chart list and …
Add data items to the chart	Select **Add**.
Remove data items from the chart	Select **Delete**.
Rearrange the order in which items display on the chart	Use **Up** and **Down** to move the item to the appropriate place on the list.

2. Select **Apply** to make the changes and to keep the **Chart Format Options** window open.
3. Select **OK** to make the changes and to close the **Chart Format Options** window.

Data Labels tab

Use the **Data Labels** tab to define where the labels of each data point on the chart will be displayed and to define how the labels will be displayed.

Example



Data Labels tab options

You can specify the following parameters:

- **None** - No labels are displayed.
- **Above Point** - The label is displayed above the data point. This location is valid only for bar, line, area, and step charts.
- **Below Point** - The label is displayed below the data point. This location is valid only for bar, line, area, and step charts.
- **Center** - The label is displayed centered on the data point. This location is valid only for bar, line, area, and step charts.
- **Base** - The label is displayed along the category axis, directly beneath the data point. This location is valid only for bar, line, area, and step charts.
- **Inside** - The label is displayed inside a pie slice. This location is valid only for pie charts.
- **Outside** - The label is displayed outside a pie slice. This location is valid only for pie charts.

- **Left** - The label is displayed to the left of the related data point.
- **Right** - The label is displayed to the right of the related data point.

If data point labels are displayed, you can specify that they include one of the following display options:

- **Value** - The value of the data point displays in the label.
- **Percent** - The value of the data point displays in the label as a percentage.
- **Series Name** - The series name is used to label the data point.
- **Category Name** - The category name is used to label the data point.

The position of data point labels can affect the readability of the chart. The label text may overlap in some situations, making it difficult or impossible to read the labels.

Defining data labels on data points

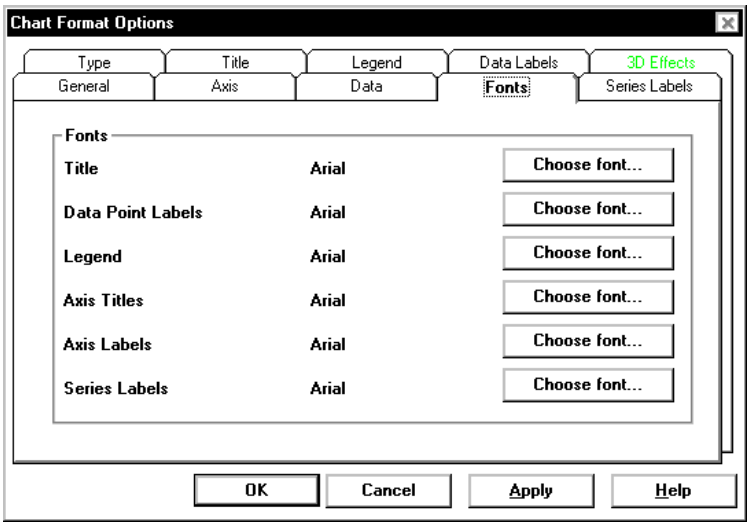
To define where the labels of each data point on the chart will be displayed, and to define how the labels will be displayed:

1. In the **Location** box, select the location where you want the data point labels to display on the chart.
2. In the **Show Label Text** box, select the option that corresponds with how you want the data point labels to display on the chart.
3. Select **Apply** to make the changes and to keep the **Chart Format Options** window open.
4. Select **OK** to make the changes and to close the **Chart Format Options** window.

Fonts tab

Use the **Fonts** tab to edit the fonts of the title, data point labels, legend, axes, and series labels on the chart report.

Example



Fonts tab options

You can specify the following parameters:

- **Fonts** - Lists all of the available report items for which you can edit the fonts.
- **Choose Font** - Takes you to the **Font selector** window, where you can edit the font size and style for each type of text.

Changing fonts

To change the fonts:

1. Select **Choose font** next to the report item for which you want to change the font.

   The **Font** window is displayed.

2. Select the **Font**, **Font style**, **Size**, **Effects**, **Color**, and **Script** that you want assigned to the selected text.
3. Select **OK**.

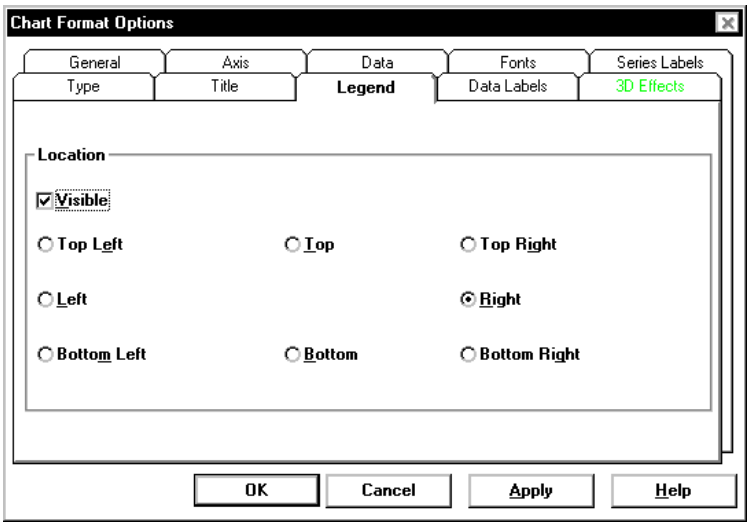
   The **Chart Format Options** window is displayed.

4. Select **Apply** to make the changes and to keep the **Chart Format Options** window open.
5. Select **OK** to make the changes and to close the **Chart Format Options** window.

Legend tab

Use the **Legend** tab to control the location of the chart legend.

Example



Legend tab options

The available options on the **Legend** tab are as follows:

- **Visible** check box - Allows you to display or not to display the report legends.
- **Location of legend** - If you elect to have report legends visible, you can select where the legend is displayed. The available options are **Top Left**, **Top** (center), **Top Right**, **Left**, **Right**, **Bottom Left**, **Bottom** (center), and **Bottom Right**.

Since legends take up space, the drawn chart will be smaller if you have selected the **Visible** check box. To increase the size of the chart, do not select the **Visible** check box or maximize the report window.

Formatting the chart legend

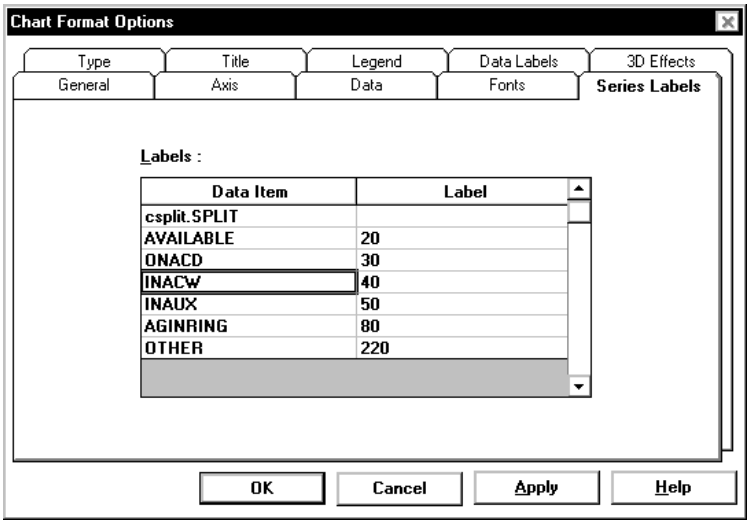
To format the chart legend:

1. Select the **Visible** check box to make the legend of the chart display on the report.
2. Select the **Location** (**Top Left**, **Top**, **Top Right**, **Left**, **Right**, **Bottom Left**, **Bottom**, or **Bottom Right**) where you want the legend to display on the chart.
3. Do one of the following tasks:
   - Select **Apply** to make the changes and to keep the **Chart Format Options** window open.
   - Select **OK** to make the changes and to close the **Chart Format Options** window.

Series Labels tab

Use the **Series Labels** tab to edit the labels, or headings, that are assigned to each data item that is used in a chart.

Example



Series Labels tab option

You can specify the following parameters:

- **Labels** table - Shows the labels that are currently used in the chart. To edit the text, place the cursor in the **Label** column and type the appropriate information.

Editing data item headings

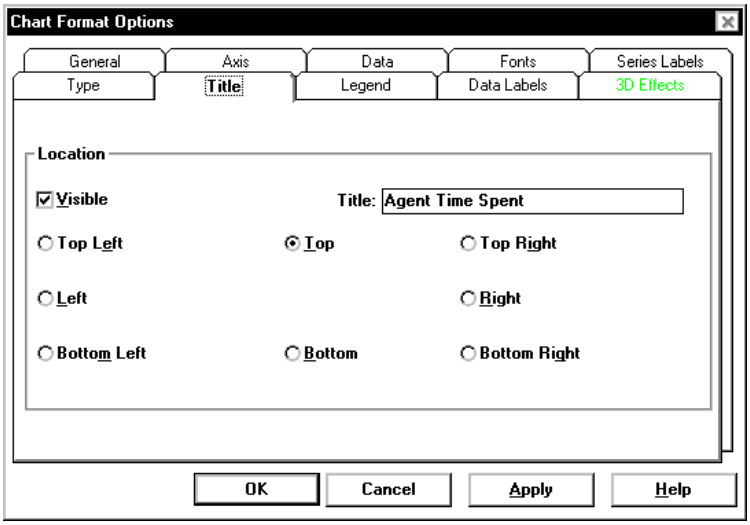
To edit data item headings:

1. Place the cursor in the table cell that contains the heading, or label, you want to modify.
2. Enter the new name or edit the existing name.
3. Do one of the following tasks:
   - Select **Apply** to make the changes and to keep the **Chart Format Options** window open.
   - Select **OK** to make the changes and to close the **Chart Format Options** window.

Title tab

Use the **Title** tab to control the location of the chart title.

Example



Title tab options

The following options are available on the **Title** tab:

- **Visible** check box - Allows you to display or not to display the report titles.
- **Location** - If you elect to have report titles visible, you can select where the titles are displayed. The available options are **Top Left**, **Top** (center), **Top Right**, **Left**, **Right**, **Bottom Left**, **Bottom** (center), and **Bottom Right**.

Since the title takes up space, the drawn chart will be smaller if you have selected the **Visible** check box. To increase the size of the chart, do not select the **Visible** check box or maximize the report window.

Formatting the title

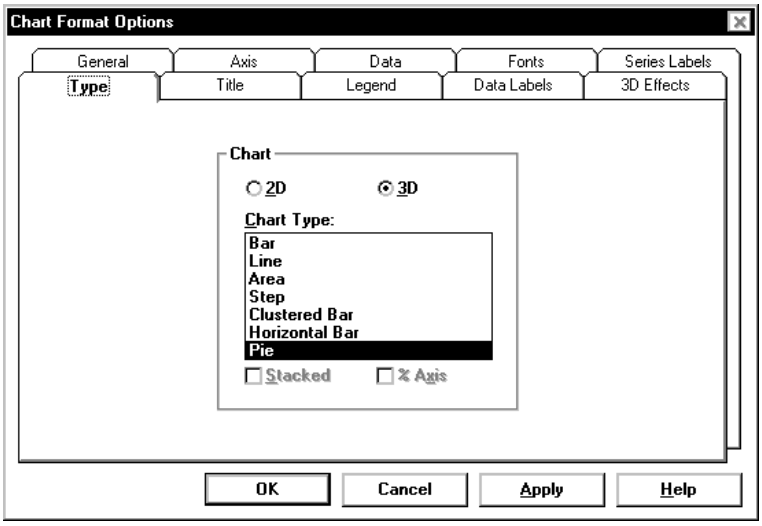
To format the title:

1. Select the **Visible** check box to make the title of the chart display on the report.
2. In the **Title** text box, edit the content of the chart title.
3. Select the **Location** as **Top Left**, **Top**, **Top Right**, **Left**, **Right**, **Bottom Left**, **Bottom**, or **Bottom Right** where you want the title to be displayed on the chart.
4. Do one of the following tasks:
   - Select **Apply** to make the changes and to keep the **Chart Format Options** window open.
   - Select **OK** to make the changes and to close the **Chart Format Options** window.

Type tab

Use the **Type** tab to change the chart type from 2-dimensional to 3-dimensional, and vice versa. You can also use this tab to specify the type of table you want. For example, you can choose a bar chart or a pie chart.

Example



Type tab options

The available options on the **Type** tab are as follows:

- **2D** and **3D** - Changes the chart to 2-dimensional or 3-dimensional views. 2D charts update faster than 3D charts, so if the drawing speed seems too slow, you may want to display charts as 2D.
- **Chart Type** - Specifies how the data is presented. You choose a chart type from the list. The types of charts available vary slightly depending on whether a 2D or 3D chart has been selected. All possible chart types are listed here:
  - Bar Chart (2D and 3D)
  - Line Chart (2D and 3D)
  - Area Chart (2D and 3D)
  - Step Chart (2D and 3D)
  - Horizontal Bar Chart (2D and 3D)

- Clustered Bar Chart (3D only)
- Pie Chart (2D and 3D)

- **Stacked** - Causes the data for all series to be stacked rather than shown separately. This check box is disabled for pie charts.
- **% Axis** - Causes the value axis (y-axis) to be displayed as percentages rather than as actual data values. This can be combined with the stacked format to produce a percentage stacked chart.

Selecting a chart type

To select a chart type:

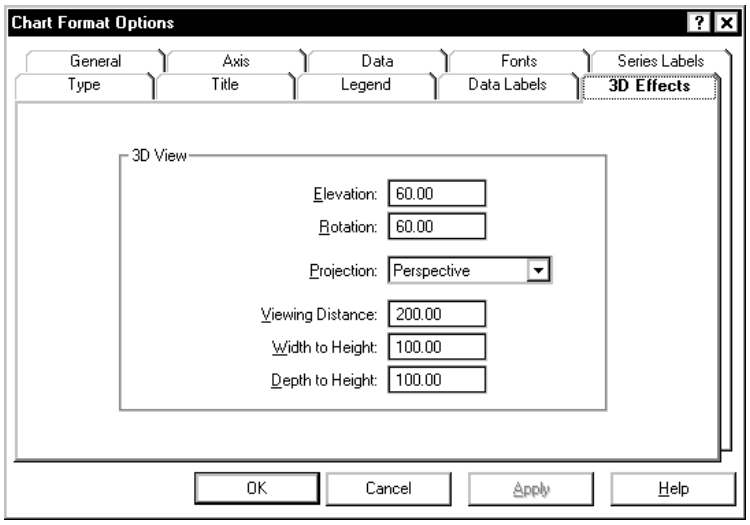
1. Based on whether you want the report to display two-dimensionally or three-dimensionally, select **2D** or **3D**.
2. Select the **Chart Type**.
   - The available types for two-dimensional charts are **Bar**, **Line**, **Area**, **Step**, **Horizontal Bar**, and **Pie**.
   - The available types for three-dimensional charts are **Bar**, **Line**, **Area**, **Step**, **Clustered Bar**, **Horizontal Bar**, and **Pie**.
3. For any type of report other than **Pie**, you can select the **Stacked** check box to display all series together rather than separately.

   If you select the **Stacked** check box, you can also select the **% Axis** check box, which causes the y-axis to be displayed as percentages rather than as data values.
4. Do one of the following tasks:
   - Select **Apply** to make the changes and to keep the **Chart Format Options** window open.
   - Select **OK** to make the changes and to close the **Chart Format Options** window.

3D Effects tab

Use the **3D Effects** tab to control the 3D appearance of the chart. If the current chart is a 2D chart, this tab is disabled.

Example

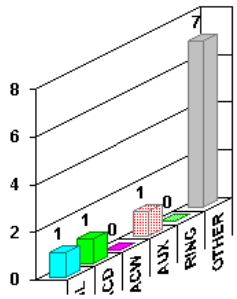


3D Effects tab options

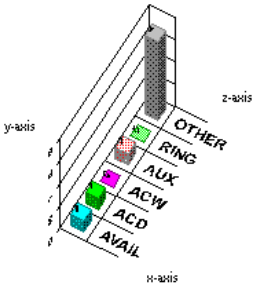
You can change the following parameters:

- **Elevation** - This is a number from 0 through 90 degrees, and describes the relative height from which a chart is viewed. An elevation of 90 looks directly down on the top of the chart, while an elevation of 0 looks directly at the side of the chart. The example charts throughout this document use an elevation of 30 degrees.
- **Rotation** - This is a number from -360 through 360 degrees, and specifies the angle that the chart is turned relative to the viewing position. The example charts throughout this document use a rotation of 60 degrees. Rotation does not apply to 3D pie charts.
- **Projection** - This selects one of three mathematical algorithms used to give a 3D appearance on a 2D sheet of paper or computer screen. The following values can be chosen:

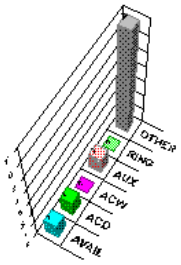
- **Oblique**: The chart has depth but the X-Y plane does not change when the chart is rotated or elevated.



- **Orthogonal**: Perspective is not applied to the chart, resulting in less of a 3D effect. The advantage of this type of projection is that vertical lines remain vertical, making some charts easier to read.



- **Perspective**: This provides the most realistic 3D appearance. Objects farther away from you converge toward a vanishing point.



- **Viewing Distance** - This is a number from 50 through 1000 that represents the distance from which the chart is viewed as a percentage of the depth of the chart.
- **Width to Height** - This is a number from 5 through 2000 that represents the percentage of the chart's height that is used to draw the chart's width.
- **Depth to Height** - This is a number from 5 through 2000 that represents the percentage of the chart's height that is used to draw the chart's depth.

Controlling the 3D appearance

To control the 3D appearance of the chart:

1. To change the degree of the top to bottom **Elevation** of the chart, enter a new number in the **Elevation** box.
2. To change the degree of **Rotation** of the chart, enter a new number in the **Rotation** box.
3. To change the type of **Projection** used for the chart, select a type from the **Projection** drop-down list.
4. Edit the ratios of width to height and depth to height, as appropriate.
5. Do one of the following tasks:
   - Select **Apply** to make the changes and to keep the **Chart Format Options** window open.
   - Select **OK** to make the changes and to close the **Chart Format Options** window.

Chapter 12: Format | Table

This section describes the **Format | Table** menu option.

Report Designer allows you to format report tables after they have been inserted on the report. You will use the **Table** option from the **Format** menu to edit tables on your designer reports.

Organization of general information

This section includes the following general information:

Organization of procedures

This section includes the following procedures:

Information about how to format tables

If you are in a report that contains a table, you can format how the table displays and what is displayed in the table.

This section includes the following topics:

About the Table Format Options window

Use the **Table Format Options** window to make layout changes to a table. All changes made are saved as part of the report view when you save the report.

Accessing the Table Format Options window

You can access the **Table Format Options** window in any of the following ways:

- Double-click a column heading in the report.
- Select **Format Table** or **Sort by** from the **Format** menu list or the right mouse button pop-up menu.

If you select …	Then the Table Format Option window is displayed with the …
Format Table	**General** tab active
Sort by	**Sort** tab active

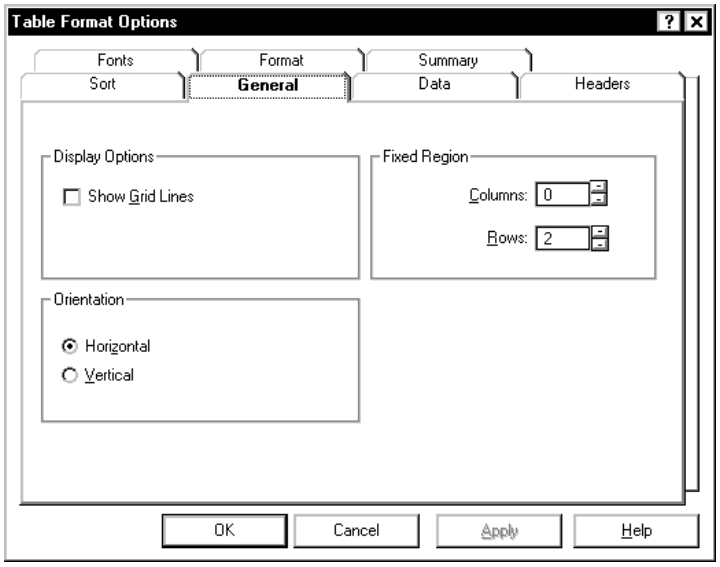
How your changes affect others

The changes you make to a report's format affect only your view of the report. The changes do not affect how other Supervisor users see the report.

General tab

Use the **General** tab to make table format changes to gridlines, column and row scrolling, and orientation.

Example



General tab options

You can change the following table parameters:

- **Show Gridlines** - This specifies whether grid lines are shown in the table.
- **Fixed Columns** - This specifies the number of columns from the left of the table that are fixed in place and do not scroll. Valid values are in the range of 0 through 99. You can use the spin boxes to select a valid value or you can manually enter the value.
- **Fixed Rows** - This specifies the number of rows from the top of the table that are fixed in place and do not scroll. Valid values are in the range of 0 through 99. You can use the spin boxes to select a valid value or yoiu can manually enter the value.
- **Orientation** - **Horizontal** builds the table with the column names across the top of the table, so that the table reads from left to right. **Vertical** builds the table with the column names down the left side of the table, so that the table reads from top to bottom.

Using the General tab

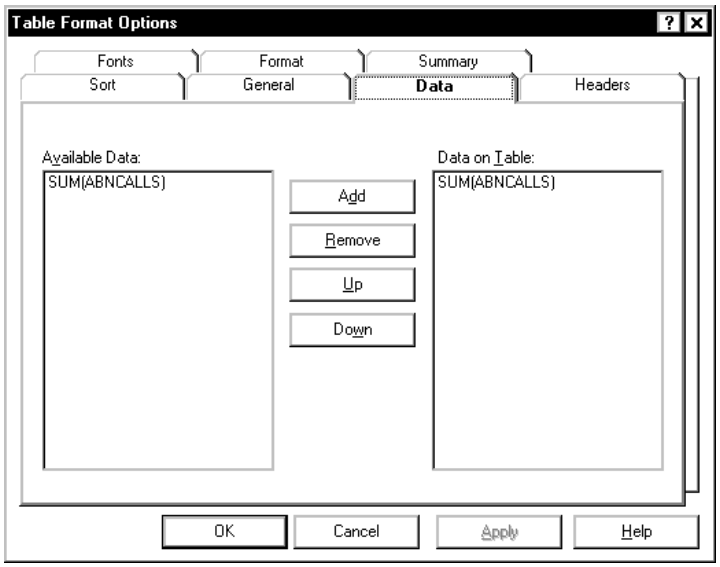
To use the **General** tab:

1. Select the **Show Gridlines** check box if you want the table to include lines between the columns and rows.
2. In the **Fixed Region** box, define the number of **Columns** on the table that will not scroll. You can enter the appropriate number or use the up and down arrows to select a valid number.
3. In the **Fixed Region** box, define the number of **Rows** on the table that will not scroll. You can enter the appropriate number or use the up and down arrows to select a valid number.
4. In the **Orientation** box, select **Horizontal** if you want the table to display with the column names across the top of the table. Select **Vertical** if you want the table to display with the column names down the left side of the table.
5. Do one of the following actions:
   - Select **Apply** to make the changes and to keep the **Table Format Options** window open.
   - Select **OK** to make the changes and to close the **Table Format Options** window.

Data tab

Use the **Data** tab to add data items to, to remove data items from, and to reorganize the order of data items on the currently-selected table.

Example



Data tab options

You can specify the following parameters:

- **Available Data** - Lists all of the data items that are available, based on the query you used for the chart or table.
- **Data on Table** - Displays the data items that are currently used in the table.

Using the Data tab

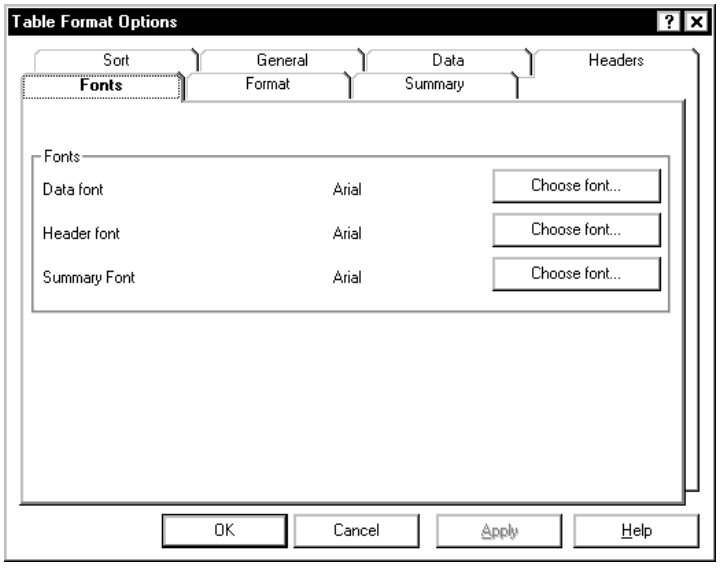
To use the **Data** tab window:

1. To add data items to the table, select an item from the **Available Data** list and select **Add**.
2. To remove data items from the table, select an item from the **Data on Table** list and select **Delete**.
3. To rearrange the order in which items appear on the table, select an item on the **Data on Table** list and use **Up** and **Down** to move the item to the appropriate place on the list.
4. Do one of the following actions:
   - Select **Apply** to make the changes and to keep the **Table Format Options** window open.
   - Select **OK** to make the changes and to close the **Table Format Options** window.

Fonts tab

Use the **Fonts** tab to edit the fonts of the data, headers, and summary information on the table report.

Example



Fonts tab options

You can specify the following paramters:

- **Fonts** - Lists all of the available report items for which you can edit the fonts.
- **Choose Font** - Takes you to the **Font selector** window, where you can edit the font size and style for each type of text.

Using the Fonts tab

To change the fonts:

1. Select **Choose font** next to the report item that you want to change the font.

   The **Font** window is displayed.

2. Select the **Font**, **Font style**, **Size**, **Effects**, **Color**, and **Script** that you want assigned to the selected text.
3. Select **OK**.

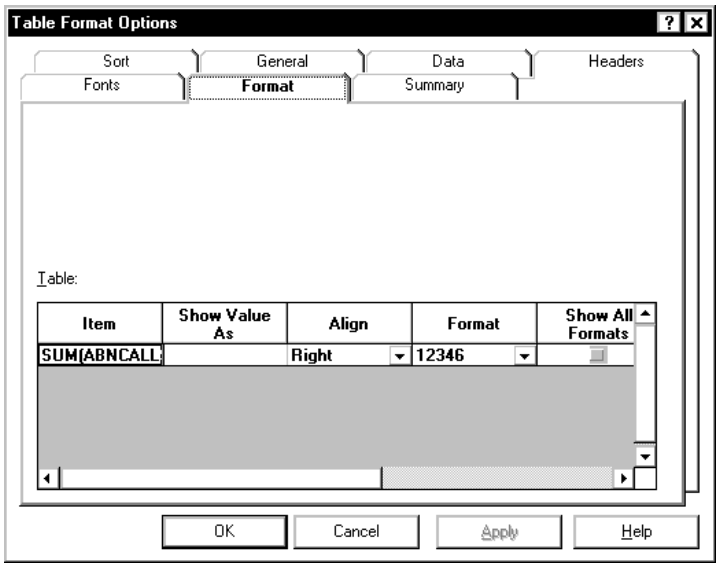
   The **Table Format Options** window is displayed.

4. Do one of the following actions:
   - Select **Apply** to make the changes and to keep the **Table Format Options** window open.
   - Select **OK** to make the changes and to close the **Table Format Options** window.

Format tab

Use the **Format** tab to alter the format of each column that is included in the table. The database items that make up the columns of the table are listed in the **Item** column in the **Table** section. For each **Item**, you can assign a variety of formatting characteristics.

Example



Format tab options

You can specify the following parameters:

- **Item** - Shows the database item, and table from which the data is retrieved, that is used for this column of the table.
- **Show Value As** - Use the drop-down list to select the format in which you want the value to be displayed. The **Show Value As** formatting applies only to data types that can be defined in the Dictionary.
- **Align** - Allows you to select the alignment of a field or column in a table. Available options for alignment are **Left**, **Right**, and **Center**.
- **Format** - The options available for the format will depend on the type of item you want to edit. For instance, a field that displays time will allow you to choose from a variety of time formats. A field that is a number will allow you to choose from a variety of number formats.

- **Show All Formats** - You can select the **Show All Formats** check box to display the formats that are available for all field types. This check box is active only during the current use of the **Format Table** window. The next time you access the window, the check box will not be active.
- **Zeros as Blanks** - Select this check box to display cells on the table that contain zeros as blank. If you do not select the check box, the cells that contain zeros will display zeros.
- **Merge with Next** - Select the check box to merge this column with the column to the right on the table.

Using the Format tab

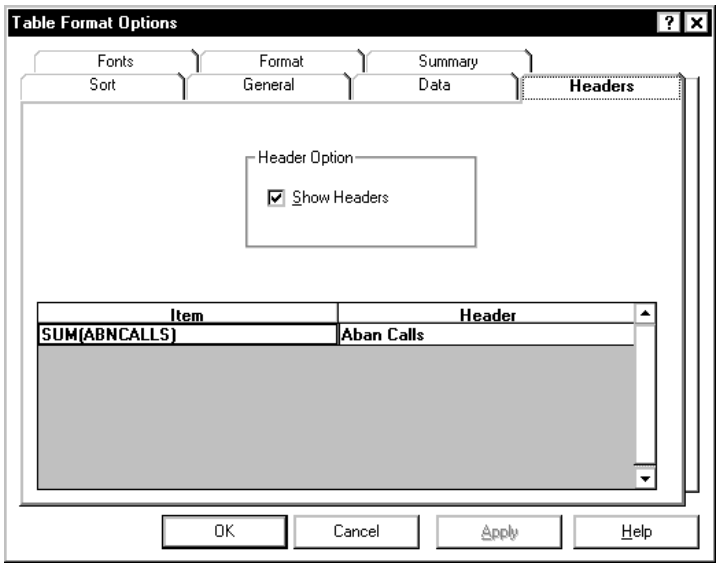
To edit the formatting on a table:

1. In the **Item** column of the table, select the data item that you want to edit.
2. In the **Show Value As** column, use the drop-down list to select how you want to have the data item displayed. The available values vary, depending on the data item.
3. In the **Align** column, use the drop-down list to select how you want the data item to be aligned on the table. Available values are **Left**, **Right**, and **Center**.
4. In the **Format** column, if available, select the time format or the number format as appropriate in which you want the data item displayed. The available choices reflect the specific data item you are formatting.
5. In the **Show All Formats** column, select the check box if you want the **Format** column to display all of the available data formats, regardless of the type of data item that you have.
6. In the **Zeros as Blanks** column, select the check box if you want to display cells on the table that contain zeros as blank. If you do not select the check box, the cells that contain zeros will display zeros.
7. In the **Merge with Next** column, select the check box to merge this column with the column to the right.

Headers tab

Use the **Headers** tab to turn table headers on and off and to edit the text that appears in each column heading of the table.

Example



Headers tab options

You can specify the following parameters:

- **Header Option** - Select the **Show Headers** check box if you want the table report to include the headers.
- **Table Header** - This table shows the column headings that are currently used on the report.

Using the Headers tab

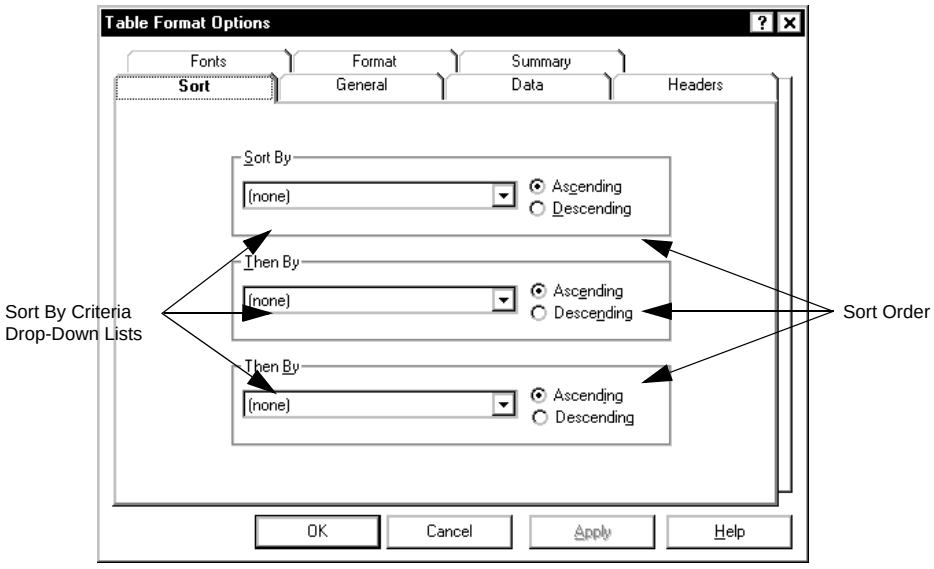
To change the column headings on the table:

1. Place the cursor in the table cell that contains the heading you want to modify.
2. Enter the new name or edit the existing name.
3. Do one of the following tasks:
   - Select **Apply** to make the changes and to keep the **Table Format Options** window open.
   - Select **OK** to make the changes and to close the **Table Format Options** window.

Sort tab

Use the **Sort** tab to specify the order in which the information on the real-time table report is displayed.

Example



Sort tab options

You can specify the following parameters:

- **Sort By** - When you set up display order for a real-time report, specify the sort column under **Sort By** and the sort order as **Ascending** or **Descending**. The drop-down list for **Sort By** lists all of the database table and item names used in the report.

Using the Sort tab

When you set up display order for a report, specify the sort column under **Sort By** and the sort order as **Ascending** or **Descending**. The drop-down list for **Sort By** lists all of the database table and item names used in the report.

Some examples of sorting are as follows:

- Viewing a list of agents alphabetically on page 164
- Searching for agents on page 164

Viewing a list of agents alphabetically

To view a list of agents alphabetically:

1. Select **Name** from the first **Sort By** drop-down list.
2. Select **Ascending** as the sort order.
3. Leave the other two **Sort By** boxes set to **(none)**.

Searching for agents

To search for agents who have been in a certain state for too long:

1. Select **WORKMODE** from the first **Sort By** drop-down list
2. Select **TIME** from the second **Sort By** drop-down list
3. Select **Descending** as the sort order for the second **Sort By**.

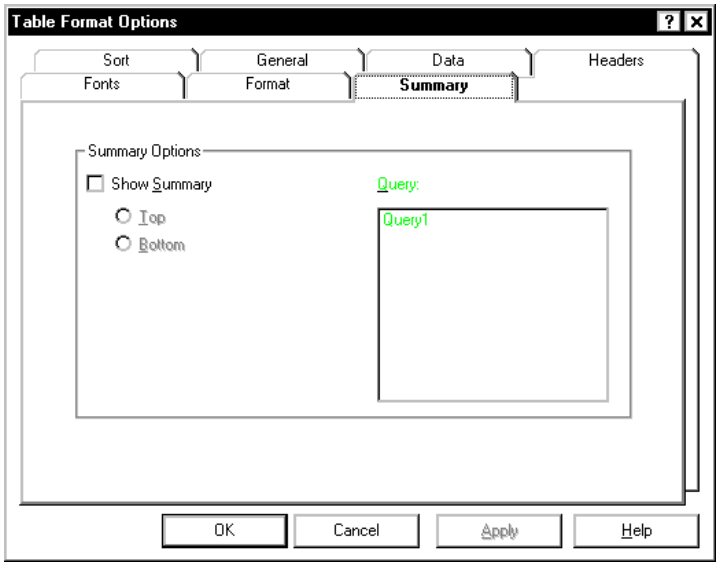
Sorting may cause the report to take longer to refresh. If you want to speed up the refresh rate, select **(none)** for all of the **Sort By** criteria to turn off the sort options.

Summary tab

Use the **Summary** tab to include or exclude summary lines from the currently-selected table. You can include a summary line for each query that is used in the report.

If this table includes an integrated query, the **Summary** tab will not display.

Example



Summary tab options

You can specify the following parameters:

- **Summary Options** - Allows you to include or exclude summary (totals) lines on table reports.

Using the Summary tab

To include a summary line:

1. Select **Show Summary**.
2. Select a query from the **Query** box.
3. Select **Top** or **Bottom**, based on where you want the summary line to be located.
4. Do one of the following tasks:
   - Select **Apply** to make the changes and to keep the **Table Format Options** window open.
   - Select **OK** to make the changes and to close the **Table Format Options** window.

Chapter 13: Format | Field

This section describes the **Format | Field** menu option.

Use Report Designer to format report fields after they have been inserted on the report. You will use the **Field** option from the **Format** menu to edit fields on your designer reports.

Organization of general information

The Field Format Options window on page 168

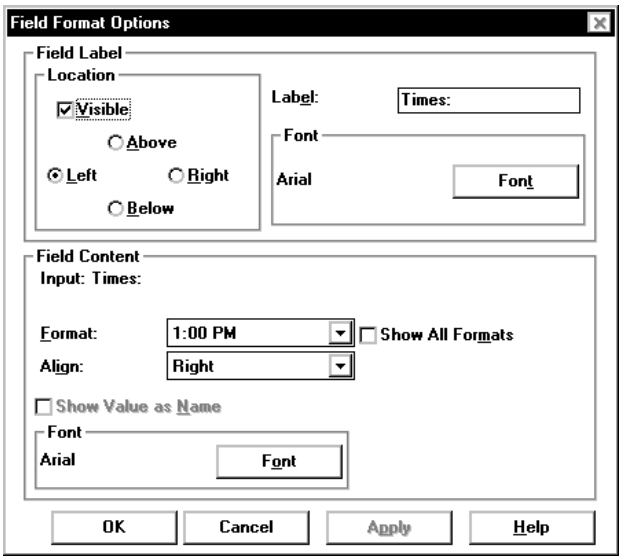
Organization of procedures

This section includes the following procedures:

The Field Format Options window

Use the **Field Format Options** window to choose the formats for fields defined in queries. To open the **Field Format Options** window, select **Field** from the **Format** menu.

Example



Field Format Options field descriptions

The **Field Format** window includes the following options:

Field	Description
Visible check box	Allows to display or not display report legends.
Location of legend as: • **Above** • **Left** • **Right** • **Below**	Allows you to select where the legend displays if you choose to display report legends.

Field	Description
Label	Enter a brief description of the field. For example, for a field that displays the name of the split/skill for which the report was run, you might label the field Split/Skill.
Font (in the **Field Label** box)	Opens the **Font** window, which allows you to change any of the font attributes for the field label.
Format	Provides a drop-down list to select the format which you want the value to be displayed.
Align	Allows you to select the alignment of a field or column in a table. Available options for alignment are left, right, and center.
Show Value as Name	Shows the field as name.
Font (in the **Field Content** box)	Opens the **Font** window, which allows you to change the font attributes for the field content.

Creating or changing a label for the field

To create or change a label for the field:

1. Select the field on the report.
2. Select **Field** from the **Format** menu.

   The **Field Format Options** window is displayed. This window allows you to create a label or heading for the field, and to edit the format of the field itself.
3. From the **Field Label** box, select the **Visible** check box.
4. Select the location (**Above**, **Below**, **Left**, or **Right**) where you want the label to appear.
5. In the **Label** field, enter the words that you want the label to display.
6. To change the font of the label, select **Font** to access the **Font** window.
7. Do one of the following tasks:
   - Select **Apply** to make the changes and keep the **Field Format Options** window open.
   - Select **OK** to make the changes and to close the **Field Format Options** window.

Editing the format of a field

To edit the format of a field on your report:

1. Select the field on the report.
2. Select **Field** from the **Format** menu.

   The **Field Format Options** window is displayed. This window allows you to create a label or heading for the field, and to edit the format of the field itself.
3. From the **Format** drop-down list, select the format in which the field will display.

   The options available for the field format will depend on the type of field you want to edit. For instance, a field that displays time will allow you to choose from a variety of time formats. A field that is a number will allow you to choose from a variety of number formats.

   You can select the **Show All Formats** check box to display the formats that are available for all field types.
4. .To align the field, select **Left**, **Right**, or **Center** from the **Align** drop-down list.
5. Select the **Show Value as Name** check box if you want to edit a field that displays an Avaya Call Management System (CMS) entity (split/skill, agent, and so on) that can be named in the Dictionary and you want the Dictionary name for the field to display instead of the number.
6. To change the font of the field, select **Font** to access the **Font** window.
7. Do one of the following tasks:
   - Select **Apply** to make the changes and to keep the **Field Format Options** window open.
   - Select **OK** to make the changes and to close the **Field Format Options** window.

Chapter 14: Format | Text

This section describes how to use the **Format | Text** menu option.

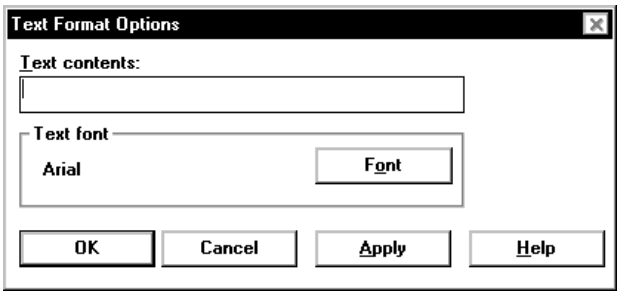
Report Designer allows you to format the font style and size of text that appears on a report. You will use the **Text** option from the **Format** menu to edit text on a report.

This section includes the following topics:

The Text Format Options window

To open the **Text Format Options** window, select a text item on the report and then select Text from the **Format** menu. The **Text Format Options** window allows you to change the font display characteristics for the selected text.

Example



Text Format Options parameters

You can specify the following parameters:

- **Text contents** - Enter the word or phrase that you want to insert on the report in this text box.

- **Text font** - Opens the **Font** window, which allows you to change the **Font**, **Font style**, **Size**, **Effects**, **Color**, or **Script** box.

Formatting text

To format text on a report:

1. Select the text on the report.
2. Select **Text** from the **Format** menu.

   The **Text Format Options** window is displayed.
3. Select **Font**.

   The **Font** selector window is displayed.
4. Select the **Font**, **Style**, **Point size**, **Effects**, and **Script** that will apply to the text string you want to edit.
5. Select **OK**.

   The **Font** selector window is closed.
6. Do one of the following tasks:
   - Select **Apply** to make the changes and to keep the **Text Format Options** window open.
   - Select **OK** to make the changes and to close the **Text Format Options** window.

Appendix A: Error messages

This section describes Report Designer error messages and what to do to resolve the error messages.

The errors described in this section usually are the result of a problem in the query that you want to test.

This section includes the following general information:

Phase 1 error messages

This section contains information about Phase 1 error messages.

The following table lists the phase 1 error messages alphabetically, and includes a cause and a recommended solution for each message.

Message	Cause	Solution
$<*variable name*> not defined	The WHERE clause contains a variable that is not defined.	Define the variable using the define input action or remove the variable from the row search criteria.
Cannot mix aggregates and nonaggregates in the select	You cannot specify both aggregate columns and nonaccredited columns in the same select for real-time reports.	Create two identical row search conditions and apply one to the aggregate columns and one to the nonaccredited columns.
Cannot use the SYN function for order by	You cannot use a synonym to sort the output in the query.	Remove the aggregate from the **Order by** field. Use grid sorting to order the item.
Avaya CMS system error - Check the error log	An Avaya Call Management System (CMS) system error occurred while the select executed. The error should be recorded in the error log.	Verify 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.
Avaya CMS system error - Data collection off	CMS cannot test the row search criteria while data collection is off.	Turn data collection on and rerun test of report design.
Avaya CMS system error - Too much data retrieved - try a more restrictive search	Too much data was retrieved with the given row search criteria.	Add more conditions to the row search criteria so that fewer rows are retrieved.

Message	Cause	Solution
Avaya CMS system error - Updating translations	CMS cannot test the row search criteria while CMS is receiving the set of configuration data from the communication server.	Wait until configuration data has been sent. Then rerun the test of report design.
keyword <variable> invalid in where clause	You cannot use the specified keyword in a row search criteria.	Remove the specified keyword from the row search criteria.

Phase 2 historical report error codes

This section contains the CMS database error codes that are most likely to appear for CMS historical reports.

This section includes the following topics:

Format

These errors are reported in the following format:

```
INFORMIX error: <error number>
```

In addition, a circumflex (^) may appear to mark the location of an error.

Related topic

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.

List of phase 2 error codes

The following table describes each phase 2 error code and the recommended corrective action.

Error	Description	Solution
201	A syntax error has occurred.	Verify that you have not misspelled an RDSQL statement, placed key words out of sequence, or included an SQL reserved word in your query.
202	An illegal character has been found in the statement.	Remove the illegal character (often a nonprintable control character) and resubmit the statement.
203	An illegal integer has been found in the statement.	Integers must be whole numbers from -2,147,483,647 to 2,147,483,647. Verify that you have not included a number with a fractional portion or a number outside the acceptable range. Verify also that you have not inadvertently entered a letter in place of a number (for example, **125p3** instead of **12503**).
204	An illegal floating-point number has been found in the statement.	Verify that you have not inadvertently entered a letter in place of a number (for example, **125p3** instead of **125.03**).
206	The specified table name is not in the database.	Verify the spelling of the table name in your statement.
217	Column *column-name* not found in any table in the query.	Correct the spelling of the database item and ensure that the item exists in the database table. Verify for the presence of required commas and quotes.
219	Wildcard matching may not be used with noncharacter types.	Wildcards (*, ?) and characters enclosed in brackets [ ] can be used only with CHAR data types. Verify the data type for the offending column.
220	There is no “FROM” clause in the query.	You must include a FROM clause in the query. Verify that you do not have an illegal character ($, #, &, and so on) or a CONTROL character in the line prior to the FROM keyword.
223	Duplicate table name *table-name* in the FROM clause.	Remove the redundant table name from the statement or use an alias to rename one of the tables.
228	Cannot have negative characters.	Verify that you have not included a negative CHAR data type (for example, **-a** or **-p**) in your statement.
278	Too many ORDER BY columns; maximum is eight.	Reduce the number of columns included in the ORDER BY clause to eight or fewer.

Error	Description	Solution
280	Total size of ORDER BY columns exceeds 120 bytes.	Reduce the number of columns included in the ORDER BY clause so that the total number of characters is fewer than or equal to 120 (perhaps delete a CHAR column of 30 or more characters).
282	Found a quote for which there is no matching quote.	Verify that all quoted strings are properly terminated with a quote.
284	A subquery has not returned exactly one value.	Verify data for the subquery. Restructure the subquery by adding more components in the WHERE clause so that only one value is returned.
297	The SELECT list may not contain a subquery.	Remove the subquery from the SELECT list in the statement.
300	There are too many GROUP BY columns (maximum is eight).	Reduce to eight or fewer the number of nonaggregate database items that are assigned the same row search ID as that assigned to an aggregate function.
301	The total size of the GROUP BY columns exceeds 120 characters.	The total number of characters in all columns listed in the GROUP BY list exceeds 120 characters. Reduce the number of nonaccredited database items that are assigned to a row search ID that is also assigned to an aggregate function.
303	Expression mixes columns with aggregates.	Restructure your query so that columns and aggregates are not included in the same expression.
309	ORDER BY database item must be included in a report field to which the row search ID is assigned.	Verify that database items included in the ORDER BY clause appear in the report and are assigned to row search ID.
324	Ambiguous database item.	A database item in your row search criteria exists in more than one table also cited in your row search criteria. Precede each database item with the appropriate table name.
352	Database item not found.	Verify the spelling of the database item.
367	Sums and averages cannot be computed for character columns.	Verify that you have not included a database item of a string type (VDN, LOGID, and so on) in the aggregate function statement.
522	A database item in a field/bar does not exist in the table specified in the field's row search ID.	Verify 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	RDSQL syntax error has occurred.	Verify that you have not misspelled an RDSQL statement, placed key words out of sequence, or included an SQL reserved word in your query.

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

Phase 3 real-time report error codes

Phase 3 real-time report error codes contains the Real-Time Database Manager error codes. Each code includes a description of the error and a recommended solution.

This section includes the following topics:

Format

These errors are reported in the following format:

```
Avaya CMS Database Manager error: <error number>
```

In addition, a circumflex (^) appears to mark the location of an error.

List of phase 3 error codes

The following table describes each phase 3 error code and the recommended corrective action.

Error	Description	Solution
1	A syntax error has occurred.	Verify the select for misspelled keywords or keywords that are out of order.
2	An illegal character has been found in the select statement.	Remove the illegal character (often a nonprintable control character).
3	The specified table name is invalid.	Verify the spelling of the table name and verify that you have included required commas in the **From tables** field.
4	An invalid column has been specified (it is not found in any of the specified tables).	Verify the spelling of the column names.

Error	Description	Solution
5	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.)	Create two identical row search conditions, and apply one to the aggregate columns and one to the nonaccredited columns.
6	Bad column in the order by clause.	Verify 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.
7	Bad index in order by clause.	Verify that the order by clause has a column in the SELECT clause or a number that indicates a position of the column in the *select* clause.
8	Bad argument given to an aggregate function. For example, you cannot take the SUM or AVG of a character column.	Verify the arguments for the aggregates and be sure that data type is appropriate.
9	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 cannot use arithmetic with character fields.	Verify for these types of errors in the fields associated with the row search.
10	Error with subquery	There may be a subquery in the WHERE clause that CMS does not support. Verify the subqueries. This typically happens with an Agent Group report (a SELECT embedded within a SELECT).
11	Avaya CMS system error	Verify the error logs.
12	Memory allocation error	Verify the error logs.
13	Query cannot select more than one table.	Verify the error logs.

Appendix B: How CMS stores and retrieves data

The most important and difficult part of designing a report is defining the data that goes into the report. To define report data, you must first understand how the Avaya Call Management System (CMS) stores and retrieves data.

This section includes the following topics:

How CMS stores data

This section includes the following topics:

Table

CMS stores data in a CMS database that 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 day, summarized by day, and so on). If data in a table is in real time, data changes second by second.

Database items

The CMS database uses names to refer to columns of data in a table. These names are called database items. For a complete listing of database items, see the *Avaya CMS Database Items and Calculations* document.

Row

Each row in a table contains data that is related by the values of one or more of the columns. For example, each row in the **Current Interval Agent** table contains data related by agent login ID.

Index

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.

How CMS retrieves data

This section includes the following topics:

Three types of information

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

- The name of the table

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

How to tell CMS to retrieve data

To tell CMS how to retrieve data, you must tell CMS to access the appropriate database table. Then, for each report field, you assign the appropriate database items. When you run the report, CMS will find in the table the columns of data associated with the database items.

Identify rows

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 finds the appropriate rows of data in the cagent table.

The data that CMS reports is the data found in the intersection of the selected database items and rows. Therefore, the report shows data that is similar to the data shown in this figure.

```
Split: 1

           Current   ACD    ACD     Average
Agent ID:   State   Calls   Time   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
```

Actually, when you design a 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 the previous figure, you would set up the row selection so users would fill out a Report Input window that asked them for a Split number.

Indexes for search

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 report, the rows of data for the report should be defined on the basis of index values.

About creating new database tables

The indexes for each standard table are fixed and cannot be changed or deleted. However, if you define a custom table in the CMS database through SQL, you can define any indexes desired for that new table.

Example

As an example of how CMS retrieves report data, if you want a custom intrahour interval split report that lists, by intrahour interval, data for a split in a single day, you must tell CMS to access the hsplit (Historical Intrahour Interval Split) table. You must then assign the appropriate database items to the fields. When you run the report, CMS finds the columns of data associated with the database items in the hsplit table.

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

- Split 1, which means you must identify rows that have the value 1 for the **SPLIT** database item.
- The date 07/02/02, which means you must identify rows with the value 070202 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.

The data that CMS reports is thle data found in the intersection of the selected database items and columns.

```
Split: 1
 Date: 07/02/02

            ACD
Interval   Calls   Abandons
08:00am     399       36
09:00am     400       46
10:00am     394       40
11:00am     418       41
```

Defining data is the central task of creating and designing a report. However, you must do many other tasks to create a report.

Appendix C: Report Designer examples

This section provides examples to help you create and modify reports with Report Designer.

This section includes the following topics:

Creating an integrated report

The following procedure shows how to create an integrated report in Report Designer that displays agent states.

To create an integrated report that displays agent states:

1. From the toolbar, select **Reports**.

   The **Select a Report** window is displayed.

2. Select **New**.

   The **Design Mode** window is displayed.

3. From the **Edit** menu, select Inputs.

   The **Edit Inputs** window is displayed.

4. From the **Input Types** list, select **Split/Skill**, and select **Add**.
5. Select **OK**.
6. From the **Edit** menu, select **Queries**.

   A **Query Assistant** window is displayed.

7. Select **New**.
8. In the Database frame, select **Integrated**.
9. Under the **Table Name** column, select the isplit table name, and select **Next**.
10. From the **Database Items** list, select on the item to select the following database items:

- **Abncalls**
- **Acdcalls**
- **Acdtime**
- **Servicelevel**

11. Select **Add**.
12. Select **Next**.
13. Select **Input Start Time**, and select **Next**.
14. Select the **Split/Skill input**, and select **Next**.
15. Name your query chart, and select **Done**.
16. Close the **Query Select** window.

    The **Design Mode** window is displayed.
17. From the **Report** menu, select **Save As**.
18. Name your report <*your name*> status, and select **Only Me**.
19. Select **OK**.

    Notice that your report is now displayed in the **Integrated Designer Category**.
20. From the **Insert** menu, select **chart**.

    The **Chart Assistant** window is displayed.
21. From the **Queries** drop-down list, select chart.
22. Select **Add All**.

    All data are added to the **Data on Chart** list.
23. Select **Next**.
24. Select **2D**.
25. Select **Bar Graph** for your chart type, and select **Next**.
26. Select **(none)** in the **Available Data** list, and select **Done**.
27. Save your report.

Modifying an integrated report

This section describes how to modify an existing report with Report Designer.

To modify an existing report:

1. From the **Select a Report** window, select the **Integrated** tab.
2. In the **Category** list, select **Designer**.
3. In the **Report** list, select the report you just created, and select **Edit**.
4. From the **Edit** menu, select **Queries**.

   A **Query Assistant** window is displayed.
5. Select **New**.
6. In the **Database** frame, select **Integrated**.
7. Under the **Table Name** column, select the isplit table name, and select **Next**.
8. From the **Database Items** list, select on the item to select the following database items:
   - **AVAILABLE**
   - **AGINRING**
   - **INACW**
   - **INAUX**
   - **O_ONACD**
   - **OTHER**
9. Select **Add**.
10. Select **Next**.
11. Select **Input Start Time**, and select **Next**.
12. Select the **Split/Skill** input, and select **Next**.
13. Name your query table, and select **Done**.
14. Close the **Query Select** window.

    The **Design Mode** window is displayed.
15. From the **Report** menu, select **Save**.
16. From the **Select a Report** window, select the **Integrated** tab.
17. In the **Category** list, select **Designer**.
18. In the **Report** list, select the report you just created, and select **Edit**.

19. From the **Insert** menu, select **Table**.

    The **Table Assistant** window is displayed.
20. From the **Queries** drop-down list, select table, and select **Add All.**
21. Select **Next**.
22. In the **Orientation** frame, select **Vertical**.
23. In the **Options** frame, select **Headers On** and **Grid Line On**.
24. Select **Done**.

    Your report now has a chart and a table.
25. Move the table so that you can see both the chart and table. By default, the second section (your table) will overlay the first section (your chart).
26. From the **Report** menu, select **Save**.

Creating an expanded AUX reason code report

The standard CMS Supervisor reports for CMS include a new field for the Expanded AUX feature. The field contains the combined calculated time for AUX reason codes 10 through 99. This field will be in any reports that display time in AUX. If you need your report to include specific AUX reason codes, you should create a custom report or modify an existing standard report.

The following report is an example of the type of custom report you can create with Report Designer when you use the following procedure:

1. Open the CMS Supervisor interface and locate the Commands option on the menu bar.
2. Select **Commands** > **Reports**.

   The system displays the Report selector window.
3. Select **New**.

   The system displays a prompt to run the report wizard.
4. Select **No**.

   The system displays the Report designer window.
5. Select from the menu bar **Edit** > **Inputs**.

   The system displays the **Edit Inputs** window.
6. Select **Agent** in the **Input Types** list, and then select the **Add** button.
7. Select **Date** in the **Input Types** list, and then select the **Add** button.

8. Select the **OK** button.

   The system returns to the Report designer window.

9. Select from the menu bar **Edit** > **Queries**.

   The system displays the Query Select window.

10. Select the **New** button.

    The system displays the Query Assistant Window.

11. Locate the Database section, and select **Historical**.
12. Locate the table section, and select **Agent Daily**.
13. Select the **Next** button.
14. Locate the Database Items list.
15. Select each of the following database items, and add the item to the Query Items list by selecting the **Add** button.
    - **TI_AUXTIME**
    - **TI_AUXTIME0** through
    - **TI_AUXTIME99**
16. Select **Next**.

    The system displays the Query Assistant window.

17. Select **Next**.

    The system displays the Query Assistant window.

18. Locate the Operand1, Operator, and Operand2 lists.
19. Scroll through the lists and select:
    - **LOGID** as Operand1
    - = as the Operator
    - **[Agent]** as Operand2
20. Select the **AND** button.
21. Scroll through the lists and select:
    - **ROW_DATE** as Operand1
    - = as the Operator
    - **[Date]** as Operand2
22. Select the **AND** button.
23. Select **Next**.
24. Enter a name for the query, or accept the default query name.

25. Select **Done**.

    The system displays the Query Select window.
26. Select **Close**.

    The system redisplays the Report designer window.
27. Select from the menu bar **Insert** > **Table**.

    The system displays the Table Assistant window.
28. Select your query in the **Queries** drop down list.
29. Select the **Add all** button.
30. Select **Next**.
31. Right-click on the table, and then select **Format** table.
32. Select **Vertical** in the Orientation section.
33. Select **Grid Lines** on in the Options section.
34. Select the **Done** button.
35. Select from the menu bar **Report** > **Run**.
36. Save the report when you exit. Select from the menu bar **Report** > **Exit**.

Glossary

ACD
See *Automatic Call Distribution*.

Actions menu
A menu in the upper-left corner of the Avaya CMS Supervisor Operations windows. The menu lists the actions available for that particular user window (for example, add, modify, and delete). You select an action after entering the necessary data in the user window.

Add
An Avaya CMS Supervisor action that adds the data entered in the given window to the Avaya CMS database.

Add/Remove programs wizard
A Microsoft® Windows® feature that guides you through a series of steps in order to remove programs that have been installed on your computer. The Add/Remove icon is found in the Control Panel dialog box.

Administrator privileges
Permissions assigned to an Avaya CMS Supervisor user in order to administer specific elements, such as installing Avaya CMS Supervisor on a network. Access permissions are specified as read or write permission. Read permission means the user can only access and view Avaya CMS Supervisor data. Write permission means the Avaya CMS Supervisor user can add, modify, or delete Avaya CMS Supervisor data.

Agent
A person who answers calls to an extension in an ACD split/skill. The agent is known to Avaya CMS by a login identification keyed into a voice terminal.

Agent reports
A group of reports that give the status of agents in an agent group, selected splits or skills, or real-time information and statistics.

Agent skill
An attribute that is associated with an ACD agent. Agent Skills can be thought of as the ability for an agent with a particular set of skills to handle a call that requires one of a set of skills. An agent can be assigned up to four skills.

Application folder
A folder on the network server that holds the Avaya CMS Supervisor application software -executables and components.

Automatic Call Distribution (ACD)	A communication server feature that uses software to channel high-volume incoming and outgoing call traffic to agent groups (splits or skills). Also an agent state where the extension is engaged on an ACD call.
Automatic script	An Avaya CMS Supervisor feature that launches a new Avaya CMS Supervisor session that logs into Avaya CMS and runs the requested tasks in the background. Actions do not display on the PC. See also *Interactive Script* and *Script*.
AutoPlay	A Microsoft Windows feature that causes an application on a CD-ROM to run without any user interaction as soon as the CD-ROM is inserted into the drive.
Avaya Business Advocate	A collection of ECS features that provide new flexibility in the way a call is selected for an agent in a call surplus situation and in the way that an agent is selected for a call.
Avaya Call Management System (CMS)	A software product used by business customers that have Avaya communication servers and receive a large volume of telephone calls that are processed through the Automatic Call Distribution (ACD) feature of the communciation server. The Avaya CMS collects call-traffic data, formats management reports, and provides an administrative interface to the ACD feature in the communication server.
Avaya CMS	See *Avaya Call Management System*.
Client	A single PC that uses Avaya CMS Supervisor.
Controller	An Avaya CMS Supervisor feature that allows the user to access Avaya CMS reports and operations. The Controller includes a toolbar, a menu bar, a status bar, tool tips, and indicators.
Custom reports	Real-time or historical reports that have been customized from standard reports or created from scratch.
Database	A group of tables that store ACD data according to a specific time frame: current and previous intrahour real-time data and intrahour, daily, weekly, and monthly historical data.
Database item	A name for a specific type of data stored in one of the Avaya CMS databases. A database item may store ACD identifiers (split numbers or names, login IDs, VDNs, and so forth) or statistical data on ACD performance (number of ACD calls, wait time for calls in queue, current states of individual agents, and so forth).

Database table Avaya CMS uses these tables to collect, store, and retrieve ACD data. Standard Avaya CMS items (database items) are names of columns in the Avaya CMS database tables.

Data points Points of historical data. A data point should include data for each interval of the working day.

Delete An Avaya CMS Supervisor action that removes the entry on the window from the Avaya CMS database.

Designer reports Customized reports that can be created with Avaya CMS Supervisor's Report Designer feature. Designer Reports are run from Avaya CMS Supervisor.

Dialog box A small on-screen window that conveys or requests information from the user. This window can contain list boxes, text boxes, tabbed pages, and so forth.

Dictionary An Avaya CMS subsystem that can be used to assign names to various contact center elements such as login IDs, splits/skills, trunk groups, VDNs and vectors. These names appear on reports, making them easier to interpret.

Edit menu A menu on the Avaya CMS Supervisor Operations windows. The menu lists the actions available for that particular user window (for example, cut, copy, and paste).

Exception A type of activity on the ACD which falls outside of the limits you have defined. An exceptional condition is defined in the Avaya CMS Exceptions subsystem, and usually indicates abnormal or unacceptable performance on the ACD (by agents, splits/skills, VDNs, vectors, trunks, or trunk groups).

Exceptions reports Display occurrences of unusual call-handling events.

Find one An Avaya CMS action that searches the database for entries thatch the input value.

Graphics An Avaya CMS reporting option that allows you to view some reports in bar graph format.

Grayed out When you do not have access to a menu or action list item, it will be dimmed or displayed in a different color from the rest of the menu or action list.

Historical reports Display past ACD data for various agent, split/skill, trunk, trunk group, vector, or VDN activities. A report summary of call data into daily, weekly or monthly totals

HTML See *HyperText Markup Language.*

Hypertext A linkage between related text. For example, if you select a word in a sentence, information about that word is retrieved if it exists, or the next occurrence of the word is found.

HyperText Markup Language A standard for defining documents with hypertext links. See also *Hypertext*.

Input field An area on window where you specify information that you want to view, add, modify, or delete.

Installation folder A folder on the network that holds all of the Avaya CMS Supervisor files. `Setup.exe` is run from this folder to install Avaya CMS Supervisor on each client computer.

Integrated reports Integrated reports compile contact center information from any starting point in the last 24 hours up to and including the current interval.

Interactive script An Avaya CMS Supervisor feature that runs the requested tasks in the current Avaya CMS Supervisor session and displays the actions on the PC. You can input requested information while the script is running. See also *Automatic Script* and *Script*.

Jump In Help, a command that moves you from the currently displayed topic to another topic.

LAN See *Local Area Network*.

List all An Avaya CMS action that lists all the entries that matched the current field values.

Local Area Network (LAN) Two or more computers connected by cable and using a suitable operating system and application software so they can directly share hard disks, printers, and other peripherals, and files.

Local installation With this type of installation, you install all of the Avaya CMS Supervisor software to disk space on each local computer from a CD-ROM or from the network.

Log	A file that contains a record of computer activity as well as backup and recovery data.
Maintenance	An Avaya CMS subsystem that is used for doing routine maintenance of the Avaya CMS, such as backing up data, checking on the status of the connection to the communication server, and scanning the error log.
Name fields	Fields in which you may enter a name (synonym) that has been entered in the Dictionary subsystem (for example, names of agents, splits/skills, agent groups, trunk groups, vectors, VDNs).
Network server	A computer in a network shared by multiple users.
Queue/Agent reports	A group of reports that give the status of all top agents in a skill and queue status, or skill status for a selected skill.
Readme file	A file that provides up-to-the-minute information on a newly released product; in this case, Avaya CMS Supervisor.
Read-only	A folder or file that can be read, but not updated or erased.
Real-time reports	Display current ACD call activity on agents, splits/skills, trunks, trunk groups, vectors, and VDNs for the current or previous intrahour interval. Current intrahour interval real-time reports are constantly updated as data changes during the interval. Previous intrahour interval real-time reports show data totals for activity that occurred in the previous intrahour interval.
Registry	The system-wide depository of information supported by Microsoft Windows. The registry contains information about the system and its applications, including clients and servers.
Report Designer	An Avaya CMS Supervisor feature that enables users to design their own reports.
Report Wizard	An Avaya CMS Supervisor feature that delivers user assistance, by way of a wizard, to quickly and easily generate new customized reports. The wizard provides instructional help that guides the user through a series of tasks that create a new customized report. Report Wizard is a supplement to Report Designer.
Run	A Microsoft Windows command that lets you execute a program, such as Avaya CMS Supervisor installation.

Scripting An Avaya CMS feature that lets you automate actions such as changing an agent's skills, running reports, exporting report data, and many other Avaya CMS functions. For example, you can create a script to run a specified report and export the data on schedule.

Scroll To use the bar on the side of the report window to move forward, backward, up, or down within a window.

Setup program A program that configures a system for a particular environment; for example, it informs the system of a new device or interface, such as Avaya Framework.

Shared installation With this type of installation, the Avaya CMS Supervisor application software is installed to a shared application folder on the network server, but user-specific files and logs are stored in an Avaya CMS Supervisor folder on each user's PC or on their own network drive.

Shortcut An icon on your computer screen that enables you to select and run an application (for example, Avaya CMS Supervisor) quickly and easily.

Skill An attribute that is assigned to an ACD Agent. Agent Skills can be thought of as the ability for an Agent with a particular set of skills to handle a call which requires one of those skills.

Solaris system A multi-user operating system developed by Sun Microsystems. The operating system on which Avaya CMS runs.

Split A group of extensions that receives special-purpose calls in an efficient, cost-effective manner. Normally, calls to a split arrive primarily over one or a few trunk groups.

Standard reports The set of reports that are delivered with the Avaya CMS or Avaya CMS Supervisor software.

Start menu The menu that appears when you select Start in the Microsoft Windows taskbar. This menu contains programs and other Microsoft Windows applications.

Taskbar The bar that appears by default at the bottom of the Microsoft Windows desktop. You can select buttons that appear on this bar to switch between running programs.

Terminal A combination of monitor (video display) and keyboard used to communicate with a remote computer to enter and display information.

Terminal emulator	An Avaya CMS Supervisor software application that emulates a 615 Color (615C) terminal.
Toolbar	A row of controller buttons used to activate various functions of the Avaya CMS Supervisor application.
Tooltips	Brief descriptions that display when the mouse pointer is over a toolbar button.
Trunk group report	Displays the status of each trunk in a selected trunk group.
User ID	The login ID for an Avaya CMS user.
VDN	See *Vector Directory Numbe*r.
VDN reports	A group of reports that show profiles of current VDN performance, call handling information for a specific VDN based on skill preference, and how calls to specific VDNs have been handled.
Vector	A list of steps that process calls in a user-defined manner. The steps in a vector can send calls to splits, play announcements and music, disconnect calls, give calls a busy signal, or route calls to other destinations.
Vector Directory Number (VDN)	An extension number that enables calls to connect to a vector for processing. A VDN is not assigned an equipment location. It is assigned to a vector. A VDN can connect calls to a vector when the calls arrive over an assigned automatic-in trunk group or when calls arrive over a dial-repeating (DID) trunk group and the final digits match the VDN.
Vector report	A report that lists the number of calls to specific vectors.
Window	A rectangular, on-screen frame through which you can view a menu, data entry fields, reports, or messages.
Wizard	A tutor built into the software that guides you through procedures.

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