CA Disk™ Backup and Restore

GMI Guide

r12.5, Second Edition

CA Technologies Product References

This document references the following CA Technologies products:

- CA 1® Tape Management (CA 1)
- CA ASTEX™ Performance (CA ASTEX)
- CA CREWS™ Catalog Recovery (CA CREWS)
- CA Datacom®/DB (CA Datacom/DB)
- CA Disk™ Backup and Restore (CA Disk)
- CA IDMS™/DB (CA IDMS/DB)
- CA MasterCat™ VSAM Catalog Management (CA MasterCat)
- CA PDSMAN® PDS Library Management (CA PDSMAN)
- CA Storage Resource Manager (CA SRM)
- CA SYSVIEW® Performance Management (CA SYSVIEW)
- CATapeEncryption
- CA Tape Encryption Key Manager
- CA TLMS® Tape Management (CATLMS)
- CA Vantage™ Storage Resource Manager (CA Vantage GMI)
- CA Vtape™ Virtual Tape System (CAVtapeVTS)

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Contents

Chapter 1: Introducing CAGMI

Note: The following software versions were used to create the screen samples and examples in this guide:

- CA Vantage GMI Windows Client Release 12.6
- CA Vantage GMI Web Client Release 12.6
- CA Vantage GMI Release 12.6

This section contains the following topics:

About CAGMI

CAGMI is the graphical management interface product that allows you to view and manage mainframe activity from a PC. It consists of user-interface clients which interface with a z/OS server component to allow access to basic z/OS server functions.

The following user-interface clients are available:

Windows Client

This client provides full functionality. That is, you can manually perform view and analysis functions, filter and sort desired entries, zoom (drill-down) to related objects, and take actions upon selected entries. You can create customized colored reports in different formats, for example, tables and graphs in HTML, PDF, and XLS formats. These reports can be printed and exported to your PC directory, servers, intranet, and so on. The Windows Client has a Scheduler component that manages scheduled tasks defined in the Windows Client (for example, tasks scheduled using the View and Output Definitions, and Object Logging functions). You can create, manage, and view Summary Objects, Joined Objects, and Delta Objects. This client also provides designer wizards to create scripts to monitor and respond to any condition, exceptional or routine, in automatic ways. These automation services let you replace many manual processes of managing your system. It also has a JCL Management feature to manage JCL and includes the Host Config Client which you can use to set CA Vantage GMI system parameters.

Web Client

As a browser interface, it can be used from any PC with internet access to the Web Client's application server. The current version of the Web Client provides the user-driven functionality of view and analysis, filtering and sorting, zooming, and the ability to take actions on selected entries. You can create customized colored reports in different formats, for example, tables and graphs in HTML, PDF, and XLS formats. These reports can be printed and exported to your PC directory, servers, intranet, and so on. The Web Client has a Scheduler component that manages scheduled tasks defined in the Web Client (for example, you can schedule output reports). You can create, manage, and view Joined Objects. You can view Summary Objects and Delta Objects.

3270-based interface (View 3270 Client)

This client provides partial functionality. It is limited to the user-driven functionality of view and analysis, filtering and sorting, zooming, and the ability to take actions on selected entries.

Note: The View 3270 Client is considered a character-based user-interface, not a graphic-based user-interface, so it is not discussed in this guide. For View 3270 Client installation and configuration information, see the *CA Vantage GMI Configuration Guide*. For more information about using the View 3270 Client, see the chapter "Navigating the View 3270 Client" in the *CA Vantage GMI User Guide*.

Note: This guide mostly displays examples from the Windows Client, which are similar in many respects to the Web Client. For more information about Web Client features, see the *CA Vantage GMI Web Client Guide*.

CAGMI is included free of charge with many CA products. The CAGMI components only need to be installed once. However, you must configure the z/OS server component for each CAGMI enabled CA product you want to use CAGMI for, on each host where you want to use it. The following is the list of CAGMI enabled CA products:

- CA 1
- CA ASTEX
- CA CREWS
- CA Disk
- CA IDMS/DB
- CA Tape Encryption Key Manager
- CA MasterCat
- CA PDSMAN
- CA SYSVIEW
- CATapeEncryption
- CATLMS

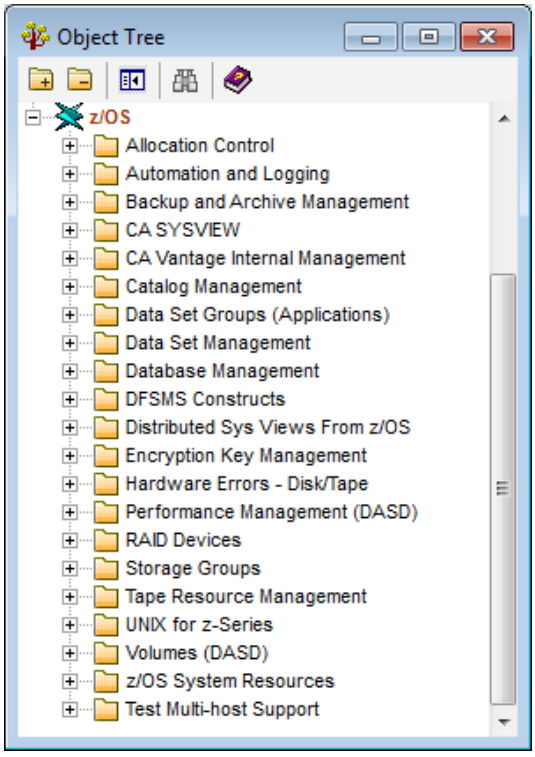
- CA Vantage GMI
- CAVtapeVTS

The Object Tree

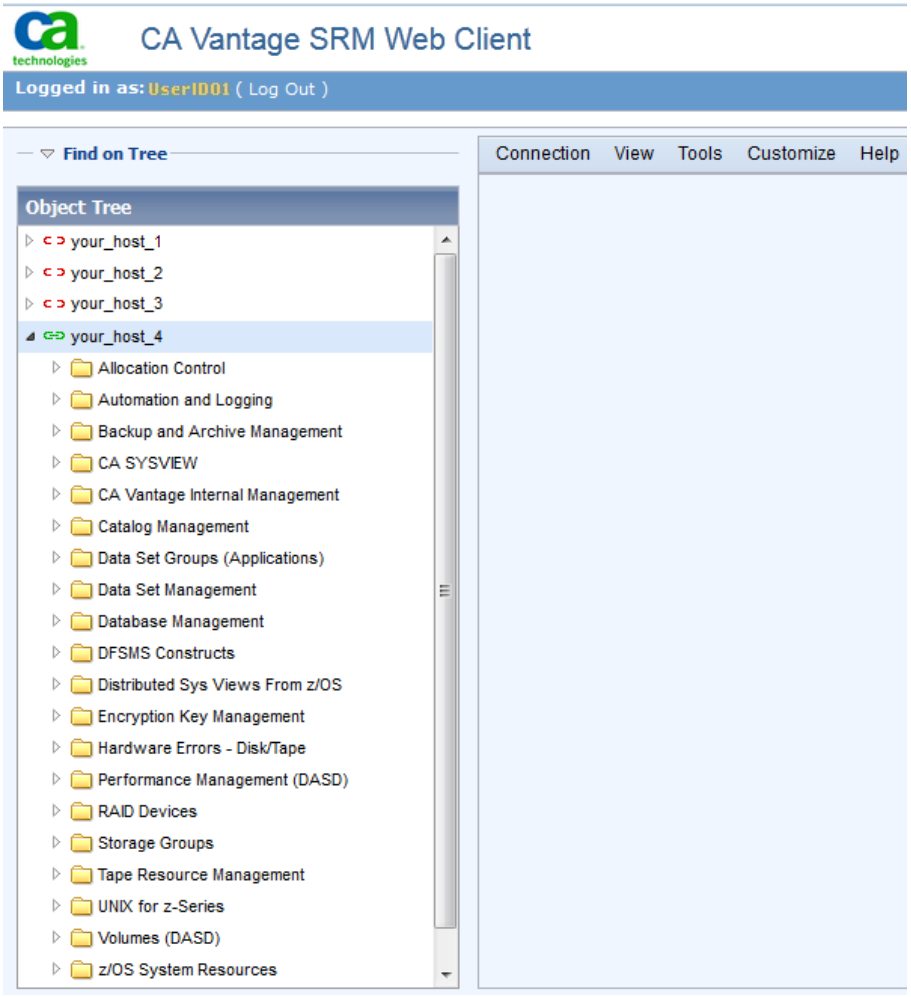
You access all user-interface functions from the main window of the user-interface. The Object Tree is a major feature on the main window of the user-interface.

The expandable and collapsible Object Tree lists all the source objects in a hierarchical tree structure. A folder icon represents a grouping of objects in the tree. When you expand a folder you will either view subfolders, the objects in the folder, or both. Different types of objects are represented by different icons and their title. A source object contains all the fields updated by the data collection services for that object. All fields-or any subset of them-can be included in user-defined views based on the source object.

In the Windows Client, the Object Tree is displayed in its own window. To display the Object Tree in the Windows Client, click the Object Tree icon in the Windows Client toolbar. The following is a sample of the Windows Client Object Tree window:



In the Web Client, the Object Tree is displayed in the Object Tree navigation pane in the Web Client main window. The following is an example of the Object Tree navigation pane in the Web Client main window:



You can access CAGMI enabled product objects using the user-interfaces, and the following basic CA Vantage GMI storage management objects:

- CA Vantage Internal Management, which includes the following objects and sub-folders:
  - All Summary Objects
  - All Joined Objects
  - JCL Model List
  - Mailbox
  - Operator Commands

  - System Parameters
  - Sub-folder; Dictionary (objects: Dictionary Object Definitions Dictionary, Dictionary Field Definitions and so on)
  - Sub-folder; Memory Usage (objects: Memory Usage Summary, Memory usage above the bar, and so on)
  - Sub-folder, Status Monitors (objects: Internal Status Monitor, and Log and Warm Start Status)
  - Sub-folder; Messages (objects: System Activity Log, console messages and so on)
- Catalog Management (locations, relationships, entries, and space usage)
- DFSMS Constructs (all attributes)
- Hardware Errors (current and historical, and tape units)
- Storage Groups (space usage and other attributes)
- Volumes (DASD - space usage and other attributes)
- z/OS System Resources (APF list, Link list, and so on)

To find out more about these objects in the Windows Client, right-click the object in the object tree and click the Help on Object option. To display the Object Help in the Web Client, open the object, click Help, and then Object *object_name* Help.

Standard CAGMI Features

CAGMI user-interfaces provide a rich set of standard features for working with your products and related object data. These features include the following:

- Simultaneous connection to several z/OS hosts, with separate views for each host, or all hosts consolidated into a single view
- Table views of all data, customizable with the ease of point-and-click
- Graphical views of any numeric data, easily customized, with a wide range of two-dimensional and three-dimensional features
- Filtering and sorting on any field
- Summary Totals and Statistics (aggregate functions such as total, average, minimum, and maximum)
- Scaling (KB, MB, GB, and so on) and color coding features
- Drill-down feature to zoom to related object data

- Wizards for simple or complex summaries (Summary Objects)

  Note: Currently, you can create and manage Summary Objects using only the Windows Client. You can view Summary Objects using both the Windows Client and the Web Client.

- Reporting features for customized and printed reports
- Multiple output formats, including:
  - Web page (HTML)
  - Email
  - PDF
  - Excel
  - Microsoft Access Database (MDB)

    Note: This output format is only available from the Windows Client.
  - Comma Separated Values (CSV)

    Note: This output format is only available from the Web Client.
- Schedulers for producing and sending report output on a regular basis
- JCL management (edit, model, drag and drop, substitute, submit, and schedule)

  Note: Currently, JCL management is only available in the Windows Client.

The following sections provide examples of some of the standard features of the Windows Client:

- Standard Object Views (see page 12)
- Standard View Options (see page 30)
- Other Standard Features (see page 49)

Standard Object Views

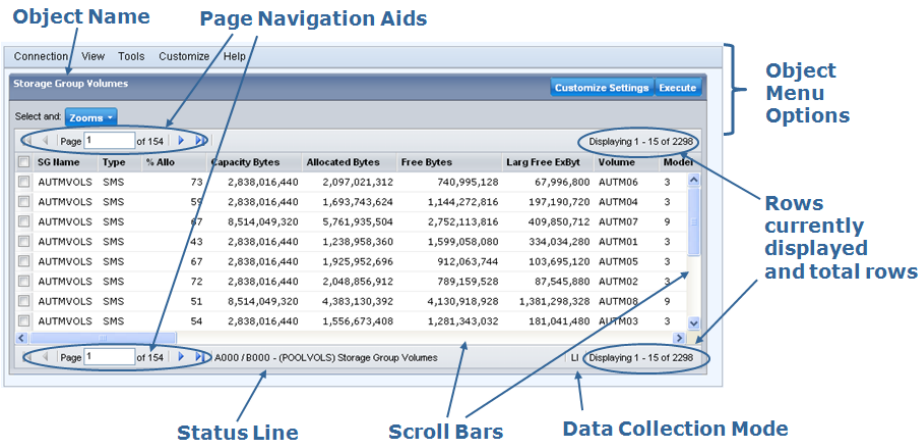
The standard object views in the Windows Client are the Table View, Graph View, and List View. The standard object view in the Web Client is the table view and you can create charts (graphs) of object information (data).

The following sections describe the Table View of both clients and the Graph View of the Windows Client.

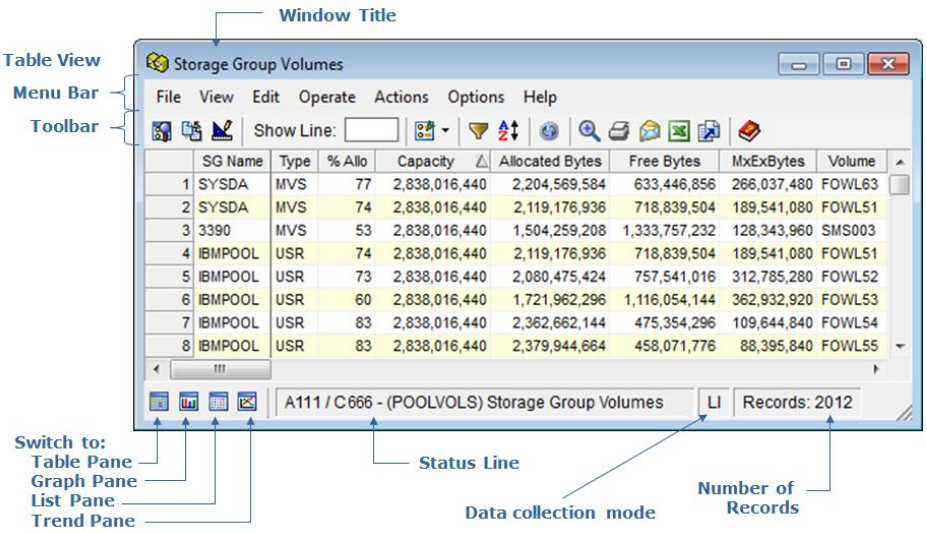
Table Views

In both the Windows Client and the Web Client, the default view of objects is the Table View. The Table View displays object information (data) in configurable tables. You can change display characteristics (such as the width and number of table columns, the number of rows displayed, and so on) and characteristics that apply to specific objects, such as sort and filter criteria. The display and object-specific characteristics determine the appearance of the table. When you save your user-defined views of objects, you automatically save the display and object characteristics with it.

The following is a sample of an object table displayed by the Web Client:



The following is a sample of a Table View of an object displayed by the Windows Client:

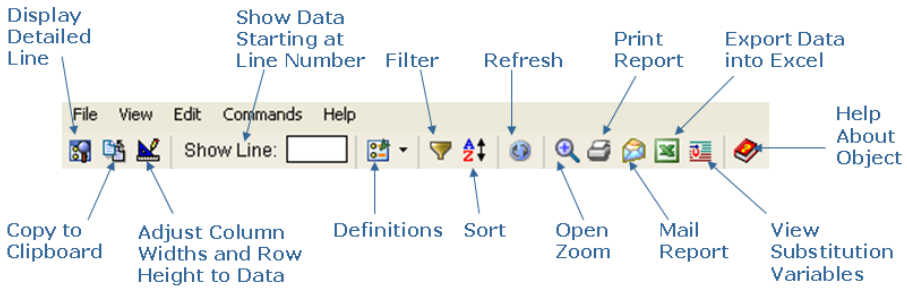


In the Windows Client, you can change the view type, for example from the Table View to the Graph View, or List View by clicking the *Switch to* icon in the bottom left corner of the object window, as shown in the sample Table View. In the Web Client, if you have created a chart (graphic) view of object data then the chart is displayed above the table.

Table View Dialog Toolbar Options

The Web Client Customize Menu provides access to the Customize View Wizard and the Customize Report Wizard. The Customize View Wizard provides object view customize options such as: filter, sort, charting (object graphs), hide or display columns, rename columns, and so on. The Customize Report Wizard allows you to create and manage output reports and output report schedules.

The Windows Client Table View dialog toolbar provides the following options:



The Windows Client Table View dialog toolbar icons can vary depending on the object being displayed. The following are just a couple of the additional icons that may appear depending on the object being displayed:

View Info Area Icon ( )

Displays an information area (Info Area) window that contains information unique to the object, or other information related to the entire object.

Note: To see an explanation of the information displayed in the information area window, open the *Help About Object* online help system from the object's toolbar.

Input List Icon ( )

Allows you to specify the input that creates the object. The type of input can vary from object to object. In some cases, such as when working with CA Disk archive and backup data, the Input List provides the names of one or more data sets from which the object data is extracted; that is, the CA Disk FILES Data Sets. In the case of the BCS Data Set Entries object (which lists catalog entries), the Input List is a data set name or data set name pattern to be found in the system catalogs. For other objects, the Input List is an input command to the specific product that produces the object.

In most cases, each Input List can be configured to provide system defaults. The Input List dialog allows you to override the default values. Click the Help button in the Input List dialog to find out how to use the dialog.

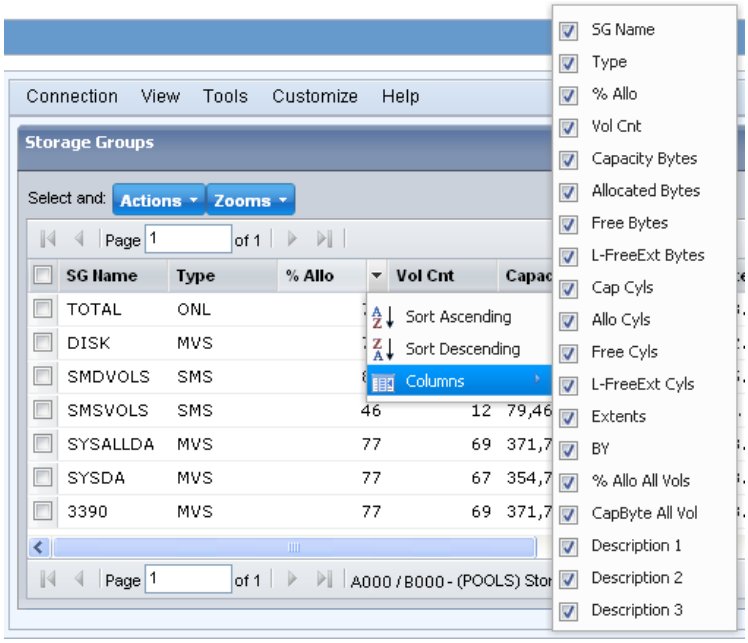
When the Input List consists of data set names, and GDGs are appropriate, either relative or absolute names may be entered. You may also specify System variables and System Symbols within the Input List, and their active values will be substituted.

Note: Because an Input List is not executed in any specific object context, you cannot use Object Related variables for substitution.

Note: For more information about the Table View dialog toolbar options, see the *CA Vantage GMI Windows Client Guide* and the *Help About Window* online help system.

Additional Table View Options

In addition to the Web Client menu and toolbar options, you can click the down arrow next to a column heading and sort the object table by that column in ascending or descending order. You can also click the down arrow next to a column heading and specify which columns you want to display or hide. The following is an example of the Web Client's Object Column Headings Options menu, where the down-arrow next to the % Alloc column heading is selected:



Note: The Web Client Customize View Wizard also provides sort and column display or hide options.

In addition to the Windows Client Table View menu and toolbar options you can also perform some quick appearance changes to the Table View as follows:

- Quick Find in Column
- Quick Sort on Columns
- Quick Color Code a Column
- Move the Freeze Column Line
- Return a Table View to Factory Settings

How to perform these changes is explained in the following procedures.

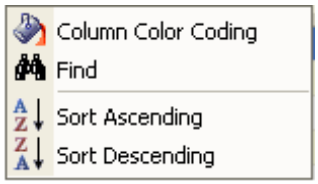
Note: The following Windows Client options and more options for customizing a view are available in the View and Output Definition feature. For more information, see the section Customized Reports (see page 41).

To Quick Find in Column

Instead of scrolling down to a row you can quickly find a particular item. To do this you can use the Quick Find in Column option by following these steps:

1. Right click the column heading which contains the item you want to find.

   The Column Options Menu is displayed as shown in the following sample:

2. Click the Find option in the Column Options Menu.

   The Find dialog is displayed.

3. In the Find What field type in the item you want to find. You can type in part of the item, for example if you wanted to find ABC123 then you could type in ABC, ABC1, and so on.

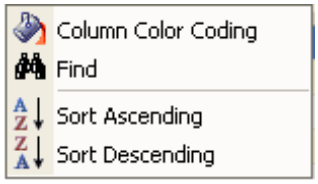
4. Click Find Next.

   The Table View of the object is updated and the first item containing your find criteria is displayed. If the criterion is not found in the column then you will receive a message advising it is not found.

To Quick Sort on Columns

You can perform quick sorts in the Table View by clicking a column heading title cell and the table will sort by that column in descending order. Click the column heading title cell again and the table will sort by that column in ascending order.

You can also right click a column heading and the Column Options Menu is displayed where you can select the Sort Ascending or Sort Descending options. The following is a sample of the Column Options Menu:



Note: After you have created a Table View column sort in this manner you may want to remove it; to remove a Table View column sort, click the Sort icon and use the Exclude a Field option or the Exclude all Fields option. For more information, see the section Sort Option (see page 32).

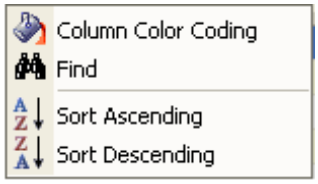
To Quick Color Code a Column

You can highlight certain values in columns by color coding them when specific criteria is met. You have two options for color coding, you can use the Quick Color Code a Column option or you can use the View and Output Destination – Fields option (the View and Output Destination – Fields option, is described in the section Color Code Option (see page 36)).

To use the Quick Color Code a Column option, perform the following steps:

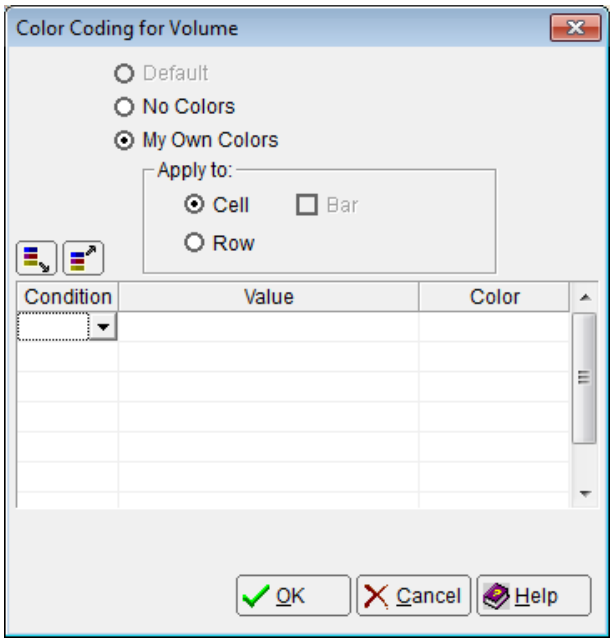
1. Right click the column heading of the column you want to color code.

   The Column Options Menu is displayed as shown in the following sample:



2. Click the Column Color Coding option in the Column Options Menu.

   The Column Color Code dialog is displayed. The following is a sample of the Column Color Code dialog displayed for the Volumes column in the Storage Group Volumes object:

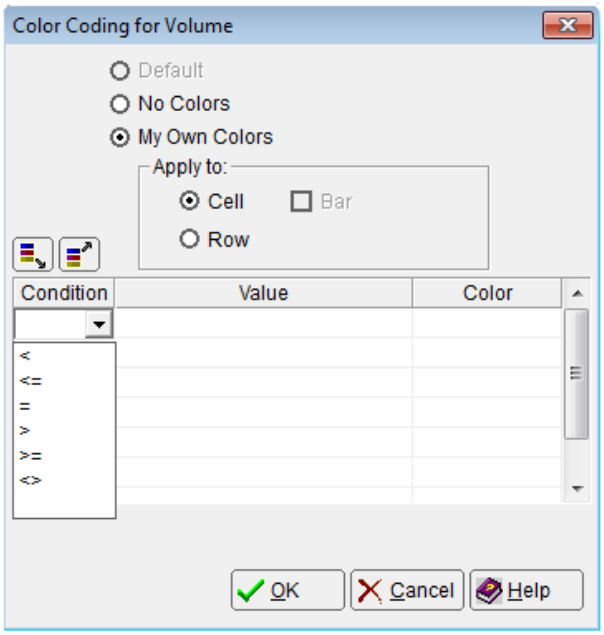


3. Click in the first empty Condition cell.

   A down arrow appears on the right side of the cell.

4. Click the down arrow on the right side of the cell.

   The Condition options are displayed as shown in the following sample:



5. Select the condition you want.

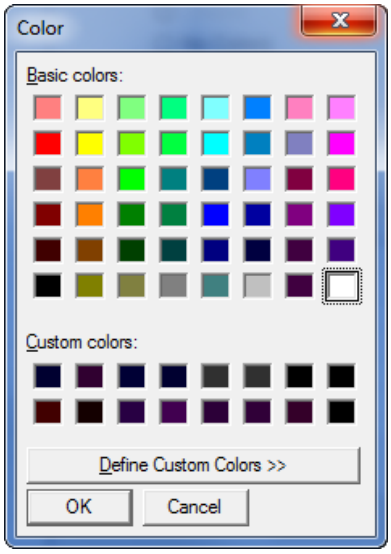
   The condition selected is displayed in the cell.

6. Click in the Value cell of the same row you selected the condition. Type in the value that you want the condition applied to.

   The value is displayed in the cell.

7. Click the Color cell of the same row you selected the condition and typed in a value.

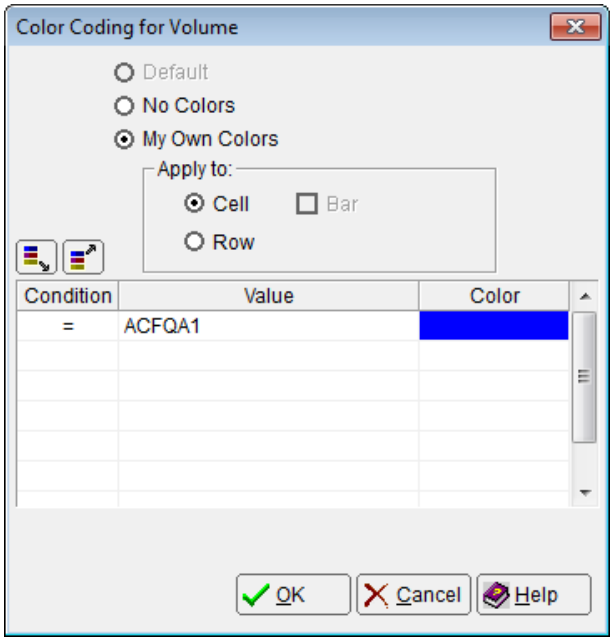
   The Color dialog is displayed as shown in the following sample:



8. In the Color dialog select the color you want to appear as the background for the items that meet your criteria and click OK.

   The Column Color Code dialog is displayed showing the condition, value and color you have specified.

   The following is an example of the Column Color Code dialog where the condition is '=', the value is 'ACFQA1' and the color is blue for the Volumes column in the Storage Group Volumes object:



9. Click OK.

   The Table View of the object is displayed with your color code settings.

10. In the Table View menu select File and then click Save, to save your settings.

If you save the Table View with the column color code setting then every time you open the object the color codes are applied. To remove the column color coding; display the object, right click the column, select No Colors, and then click OK in the Column Color Code dialog.

Observe the following:

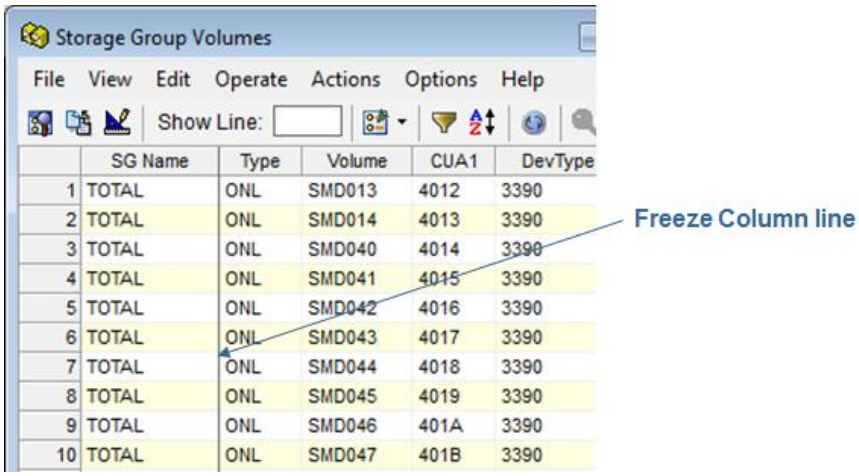
- You can apply the color coding to the cells in the column selected or you can apply the color coding to the whole row by selecting the *Apply to Row* option.
- You can apply predefined color code values by selecting the *Use predefined colors* button ().
- You can save the column color codes you have created so that you can use them later by selecting the *Store these colors as predefined* button ().
- You can have multiple conditions, values, and colors to the same column. However, the Windows Client checks the conditions sequentially until the first match occurs and it uses ANSII character sort order for the comparison (for example: 0-9, A-Z, and a-z). If one value meets two or more conditions then the first condition is applied.

  For example: if you color code two conditions in the dialog such that '= AAAA1 Blue' is listed first, and then '> AAAA0 Red' is listed second in the dialog then the Windows Client will apply the '= AAAA1 Blue' condition to all AAAA1 items, then it will apply the second condition, '> AAAA0 Red', to any items that meets the second condition but where the first condition has not been applied. If the conditions are reversed in the dialog so that '> AAAA0 Red' is first and '= AAAA1 Blue' is listed second in the dialog, then the second condition, '=AAAA1 Blue', would be ignored because items with values AAAA1 have already met the first condition and the red color coding is already applied to them.

- There are no "and" or "or" condition statements available for color coding multiple conditions, values, and colors to the same column. There are simply the 'less than', 'less than or equal to', 'equal to', 'greater than', 'greater than' or equal to', 'less than or greater than' and 'Range' (for numerical fields only) conditions available for comparison to the values you specify.

To Move the Freeze Column Line

You can freeze columns so that when you scroll to the right in a Table View, certain columns stay in the view. The black vertical line separating columns is the Freeze Column Line. The following illustration shows the factory default Freeze Column Line for the Storage Group Volumes object:



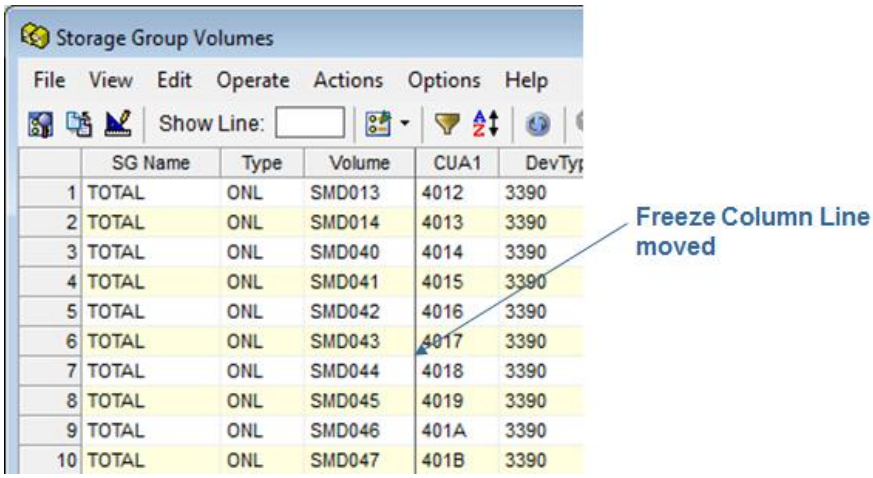
To include the Type and Volumes columns as Freeze Columns perform the following steps:

Note: You can similarly include as many columns as you want as Freeze columns in any Table View of an object.

1. Click on the vertical line between the SG Name and the Type columns and drag-and-drop it to the vertical line between the Volume and the CUA1 columns.

   Note: You must click and drag the line anywhere below the column heading portion of the line, that is, it will not work if you click and drag the section of the line between the column headings.

   The Freeze Column Line is now displayed between the Volume and the CUA1 columns as shown in the following sample:



   When you now scroll to the right in the Storage Group Volumes object the SG Name, Type and Volume columns will always be displayed in the left columns of the view.

2. In the object view menu click File and then Save, to save your settings.

   If you save your settings then every time you open the object the Freeze Columns line will be where you saved it. Alternatively you can just close the Table View without saving your Freeze Column Line change and the next time you open the Table View for the object the Freeze Column Line will be where it was with the factory setting.

To Return a Table View to Factory Settings

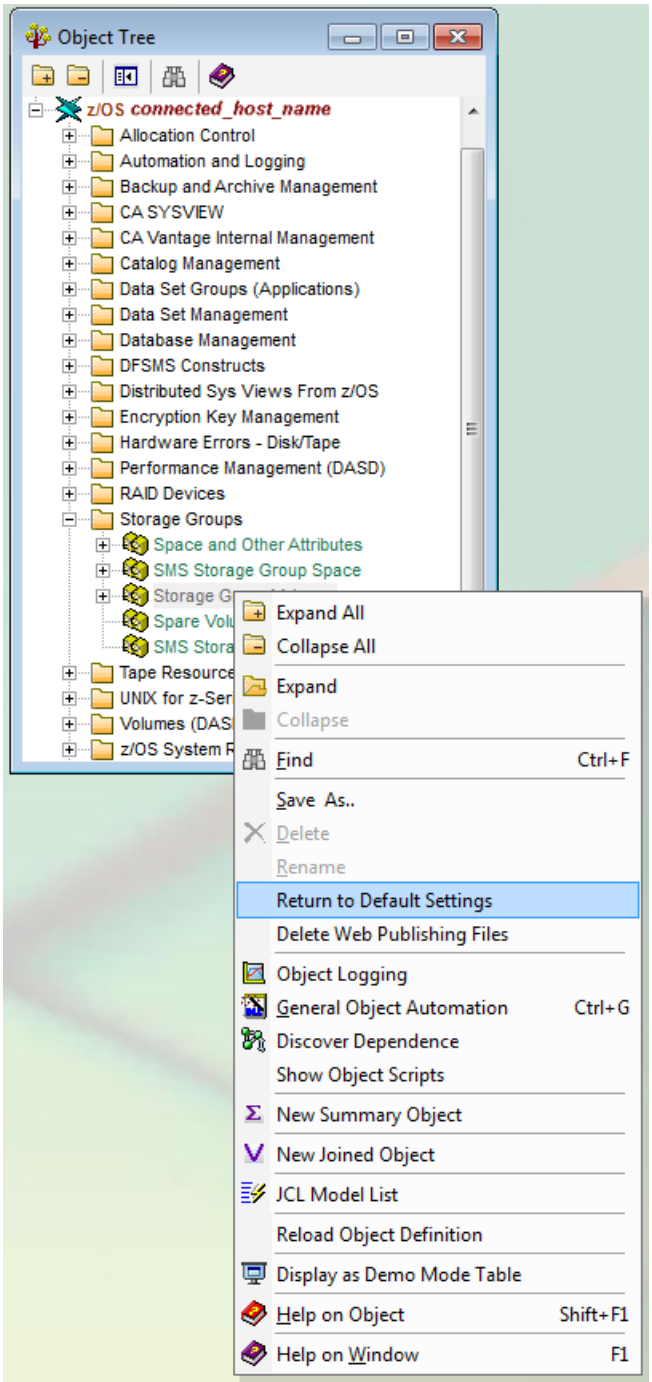
Before you return an object view to factory settings note the following:

- By following this procedure you will erase all your settings in the view of the object, for example the Sort settings, Column Color Coding settings, Freeze Columns settings, Filter settings and so on.
- If you only want to remove a particular setting but not all your customized settings then open the tool option for the setting you want to remove and remove it. The following are a few examples of how to remove particular settings:
  - To remove column color code settings, open the Color Coding dialog for the column colors you want to remove and select No Colors.
  - To remove a filter, open the Filter dialog and click the Clear icon () then Save. For more information, see the section Filter Option.
  - To remove your Freeze Columns settings, move the Freeze Columns line to the dividing line between the first and second column.
  - To remove column sorts, click the Sort icon () and use the Exclude a Field option or the Exclude all Fields option. For more information, see the section Sort Option.

To return an object view to factory settings, perform the following steps:

1. Right click the object in the Object Tree.

   The Object Options Menu is displayed. The following shows a sample of the Object Options Menu:



2. Click Return to Default Settings.

   A confirmation dialog is displayed.

3. Click Yes.

   All the changes to the object that you have previously saved will now be replaced with factory default settings. You will see this change the next time you open the object.

Graph Views

The Graph View feature displays a selected set of object data in a graph.

Note: For Web Client users; the Customize View Wizard in the Web Client provides Charting options. These options allow you to create charts (graphs) of object data. For more information, see the *CA Vantage GMI Web Client Guide*.

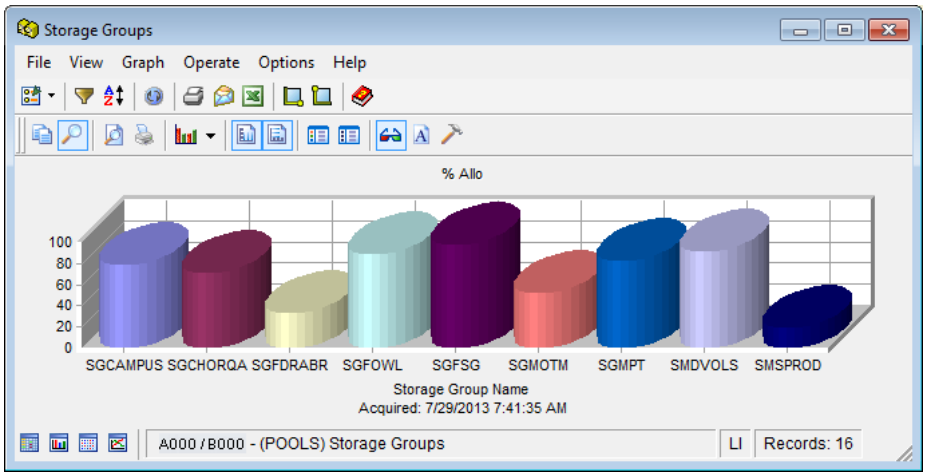
The Windows Client offers a large variation of graph types to present your data in a variety of formats. Some of the available graph types are:

- Line
- Point
- Area-curve
- Bar
- Pie
- Doughnut
- Pyramid
- Cube

You can specify the graph type and its format to obtain the kind of display you prefer. You can preview the general look of a graph while defining its various features.

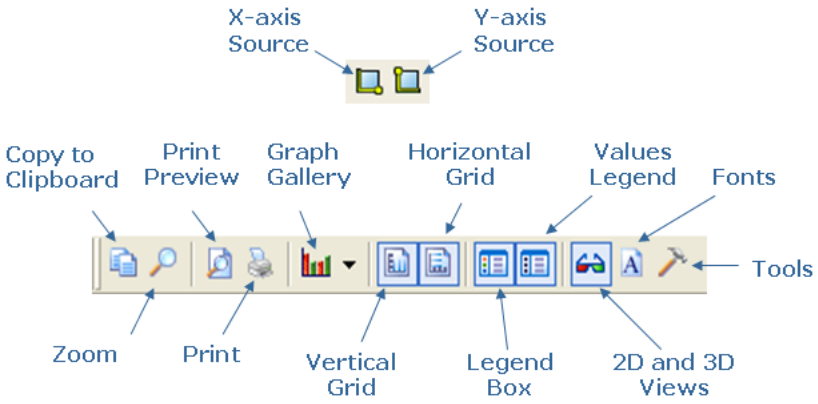
Note: To immediately view certain changes, you must click the Refresh icon ().

The following is a sample of the Windows Client Graph View of the Storage Groups object:



Graph View Dialog Toolbar Options

The Windows Client Graph View dialog toolbar provides the following options for working with graphs:



Note: For more information about the Graph View dialog toolbar options, see the *CA Vantage GMI Windows Client Guide* and the *Help About Window* online help system.

Additional Graph View Options

In addition to the Windows Client Graph View menu and toolbar options you can also perform some quick appearance changes to the Graph View as follows:

- Increase or Decrease Number of Items Displayed
- Quick Gallery Option (to change graph type)
- Quick Color Option (to change graph color)

- Quick Multiple Colors Option

How to perform these changes is explained in the following procedures.

Note: The following options and more options for customizing a view are available in the Windows Client View and Output Definition option. For more information, see the section Customized Reports (see page 41).

Increase or Decrease Number of Items Displayed

When you switch the object view from Table View to Graph View by clicking the Graph icon in the bottom left corner of the view, the Graph View will display the same amount of items that were displayed in the Table View. For example, if the Table View displayed 8 rows of X records found then the Graph View will display only those 8 items. If you want the Graph View to display more items then switch back to the Table View and expand the window to display more rows. Then when you switch back to the Graph View it will display the same amount of items. For example, if the Table View displayed 8 rows and you expand the Table View to display 10 rows then when you switch to the Graph View it will display 10 items.

You can also use the Sort Option and the Filter Option in order to specify the order of the items and reduce the amount of items you want to display in the graph, prior to switching to the Graph View.

Note: When you print a Graph View, all records (not only the ones displayed in Graph View on your screen) will be included in the printout unless you specify a range in the print option.

Quick Gallery Option to Change Graph Type

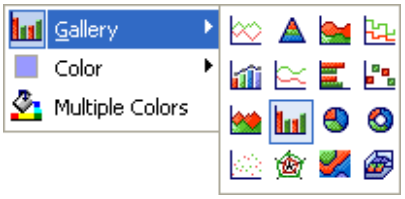
When a Graph View is displayed you can use the Quick Gallery option to change the graph type. (This option is the same as the Gallery icon option found on the Graph View toolbar, this is another method for initializing the same option.)

To use the Quick Graph Type Change option

1. Right click in the graph of the Graph View.

   The Graph Options Menu is displayed as shown in the following sample:

2. Click the Gallery option and a list of graph types is displayed as shown in the following sample:



3. Click on the graph type you want to change to.

   The Graph View is updated and the new graph type selected is displayed.

Quick Color Option to Change Graph Colors

When you switch to the Graph View, all the bars will have the same color. To apply different colors to the bars you must first use the Quick Multiple Colors Option. Then you can right click a particular bar and specify a color for that bar. The following procedure assumes you have the object displayed in the Graph View and all the bars have the same color.

To use the Quick Graph Color option to specify a color

1. Right click on a particular item (for example a bar) in the graph.

   The Graph Options Menu is displayed as shown in the following sample:

2. Select the Multiple Colors option.

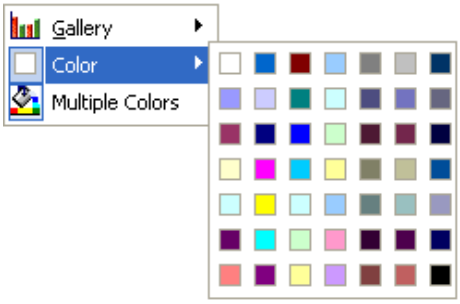
   The Graph View is displayed and the graph items are displayed by a different color.

3. Right click on the item (for example a bar) in the graph you want to specify a color for.

   The Graph Options Menu is displayed.

4. Click the Color option.

   A color chart is displayed as shown in the following sample:



5. Click on the color you want the item changed to.

   The item in the Graph View is displayed with the color selected.

Quick Multiple Colors Option

When you switch to the Graph View, all the bars will have the same color. To apply different colors to the bars you can use the Quick Multiple Colors Option. Then you can right click a particular bar and specify a color for that bar as described in the section Quick Color Option. The following procedure assumes you have the object displayed in the Graph View and all the bars have the same color.

To use the Multiple Colors Option

1. Right click on any item (for example a bar) in the graph.

   The Graph Options Menu is displayed as shown in the following sample:

2. Click the Multiple Colors option.

   The Graph View is updated with each item displayed by a different color.

   Note: To return the Graph View so that all items use the same color, right click an item (for example a bar) in the graph and select the Multiple Colors option.

Standard View Options

In both the Windows Client and the Web Client, each standard view of object data provides options you can use to manipulate object information so it is presented the way you like. Some of the more common Windows Client options are described in the following sections.

Note: For more information about these options in the Web Client, see the *CA Vantage GMI Web Client Guide*.

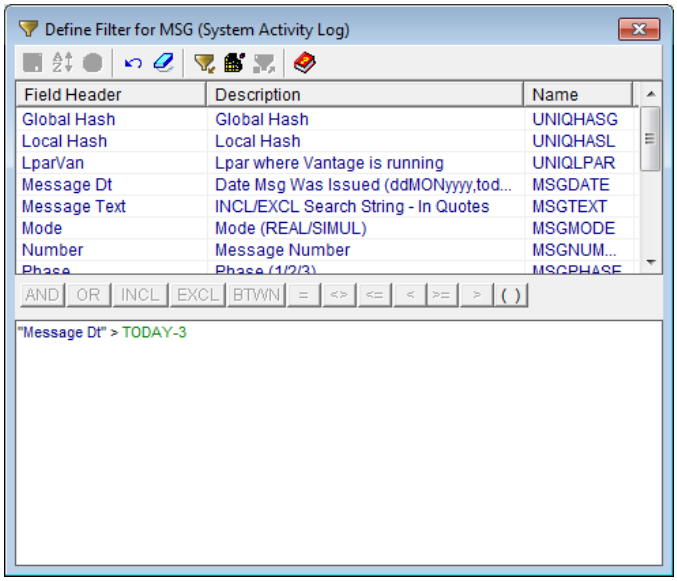
Filter Option

The Filter feature narrows the amount of object information (the number of rows) displayed in the table. The Windows Client lists the object fields in the Filter dialog in alphabetical order by field name. The Filter dialog guides you in the process of defining the filter expression by enabling and disabling the appropriate fields and controls at every step.

Note: For Web Client users; the Customize View Wizard in the Web Client provides a similar filtering feature. For more information, see the *CA Vantage GMI Web Client Guide*.

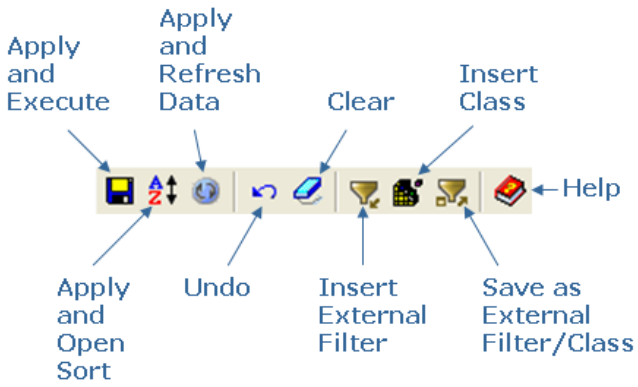
Example: Create a Filter

The following Windows Client example shows the filter criteria that would produce a user defined view showing only the CA Vantage GMI messages issued in the last 3 days. In the example a relative date of TODAY-3 is used instead of an absolute date. A relative date allows for reuse of the filter without you having to calculate and update the date. However you can use absolute dates (specific dates).



Filter Dialog Toolbar Options

The Windows Client Filter dialog toolbar provides the following options:



How Filters Work

A filter can be built from the fields of the object by combining them into Boolean expressions. You can also use expressions that contain patterns with wildcard characters.

You can refine your filter by using the AND/OR logical operators to combine several expressions. Use parentheses to group sub-expressions.

You can enter a filter expression directly into the text box at the bottom of the Define Filter dialog or use the typing aids in the dialog. It is possible to edit any expression in the text box.

Observe the following:

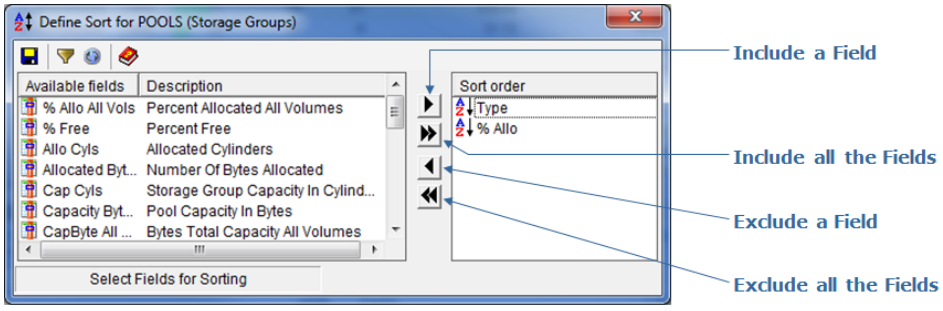
- For more information about how filters work click the Help icon in the Filter dialog.
- To immediately view the effect of your filter you must click the Apply and Refresh Data icon ( ).

Sort Option

The Sort feature sorts the table by the values in the columns of the table. Every object attribute (or field for z/OS) in a table can serve as a sort key. You can use the Windows Client Sort Dialog to sort object data in both the Table View and the Graph View.

Note: The Customize View Wizard in the Web Client provides a similar sort feature. For more information, see the *CA Vantage GMI Web Client Guide*.

The following is a sample of the Windows Client Sort dialog for the POOLS object. It points out how to include and exclude fields the object view is sorted by.



To change the Sort order using the Windows Client Sort dialog

1. Double-click the Sort Order icon ( ) in the Sort Order pane of the Sort dialog.

   The Ascending Sort Order icon ( ) appears.

2. Double-click the Sort Order icon again in the Sort Order pane of the Sort dialog.

   The Descending Sort Order icon ( ) appears.

Note: To immediately view the effect of your sort you must click the Apply and Refresh Data icon ( ).

You can sort object data by columns directly in the Table View.

To sort the Table View by columns in the Windows Client

1. Click the column title you want the object data to be sorted by.

   The first time the column title is clicked the table is updated and sorted in ascending order by object data in that column.

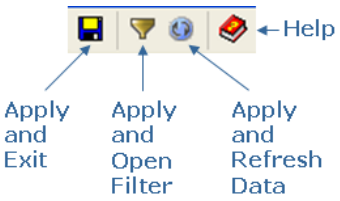
2. Click the column title again to change the sort to descending order.

   The table is updated and sorted in descending order by object data in that column.

After you have created a Table View column sort in this manner you may want to remove it; to remove a Table View column sort, click the Sort icon ( ) and use the Exclude a Field option or the Exclude all the Fields option.

Sort Dialog Toolbar Options

The Windows Client Sort dialog toolbar provides the following options:



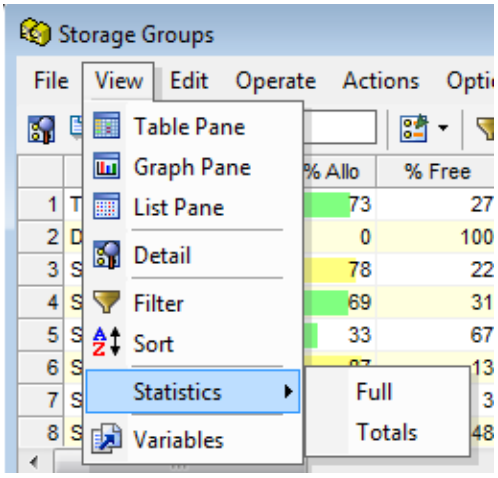
Statistics Full and Totals

The Windows Client Statistics Full and Totals options in the View menu let you request the total of every numeric field, or combine the totals with the average, minimum, and maximum values.

Note: The Statistics option in the View menu of the Web Client provides a statistics and totals view of the object. For more information, see the *CA Vantage GMI Web Client Guide*.

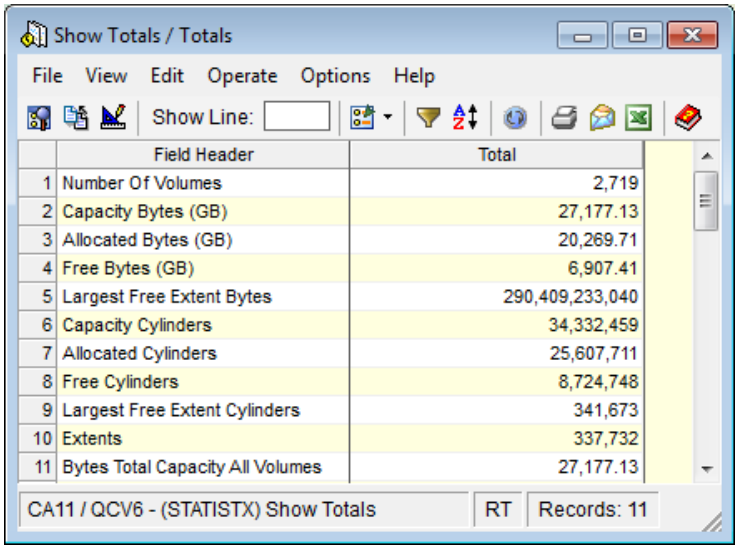
Example: Access Statistics Full and Totals options

The following example shows where to access the Statistics Full and Totals options from the Windows Client View drop-down menu option in the Table View.



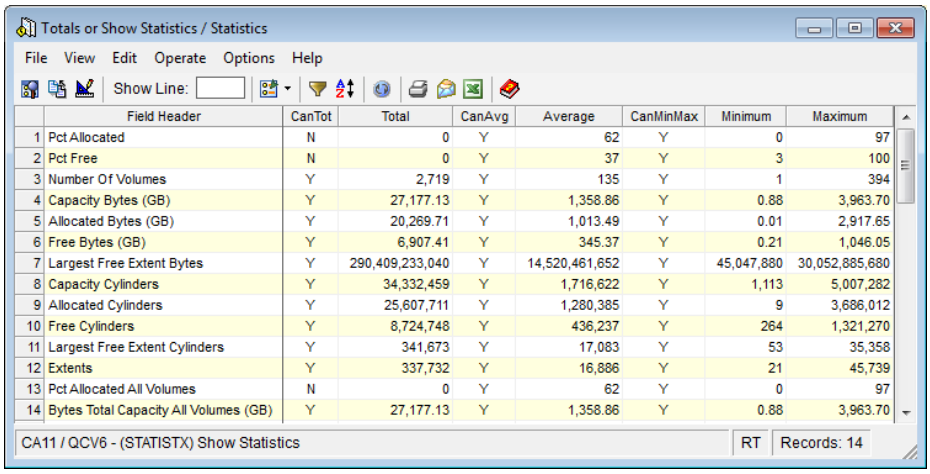
Statistics Totals Option

The Statistics Totals option provides the sum of all numeric fields, as shown in the following sample Windows Client Statistics Totals screen capture.



Statistics Full Option

The Statistics Full option provides totals plus the average, minimum, and maximum values for all numeric fields, as shown in the following sample Windows Client Statistics Full screen capture.



	Field Header	CanTot	Total	CanAvg	Average	CanMinMax	Minimum	Maximum
1	Pct Allocated	N	0	Y	62	Y	0	97
2	Pct Free	N	0	Y	37	Y	3	100
3	Number Of Volumes	Y	2,719	Y	135	Y	1	394
4	Capacity Bytes (GB)	Y	27,177.13	Y	1,358.86	Y	0.88	3,963.70
5	Allocated Bytes (GB)	Y	20,269.71	Y	1,013.49	Y	0.01	2,917.65
6	Free Bytes (GB)	Y	6,907.41	Y	345.37	Y	0.21	1,046.05
7	Largest Free Extent Bytes	Y	290,409,233,040	Y	14,520,461,652	Y	45,047,880	30,052,885,680
8	Capacity Cylinders	Y	34,332,459	Y	1,716,622	Y	1,113	5,007,282
9	Allocated Cylinders	Y	25,607,711	Y	1,280,385	Y	9	3,686,012
10	Free Cylinders	Y	8,724,748	Y	436,237	Y	264	1,321,270
11	Largest Free Extent Cylinders	Y	341,673	Y	17,083	Y	53	35,358
12	Extents	Y	337,732	Y	16,886	Y	21	45,739
13	Pct Allocated All Volumes	N	0	Y	62	Y	0	97
14	Bytes Total Capacity All Volumes (GB)	Y	27,177.13	Y	1,358.86	Y	0.88	3,963.70

Scale Option

The Scale option list lets you select the scale base units for displaying numerical data. The difference between requesting K, M, G, and so on, as opposed to KB, MB, GB and so on is that those with the appended B mean multiples of 1024, while those without the B mean multiples of 1000. For example:

- nnK = nn(1000), nnM = nn(1000)(1000), and so on.
- nnKB = nn(1024), nnMB = nn(1024)(1024), and so on.

Note: The Customize View Wizard in the Web Client provides a similar field scaling feature. For more information, see the *CA Vantage GMI Web Client Guide*.

To scale a column of numeric data in the Windows Client

1. Click the Definitions icon ( ) on the Windows Client toolbar of the object view.

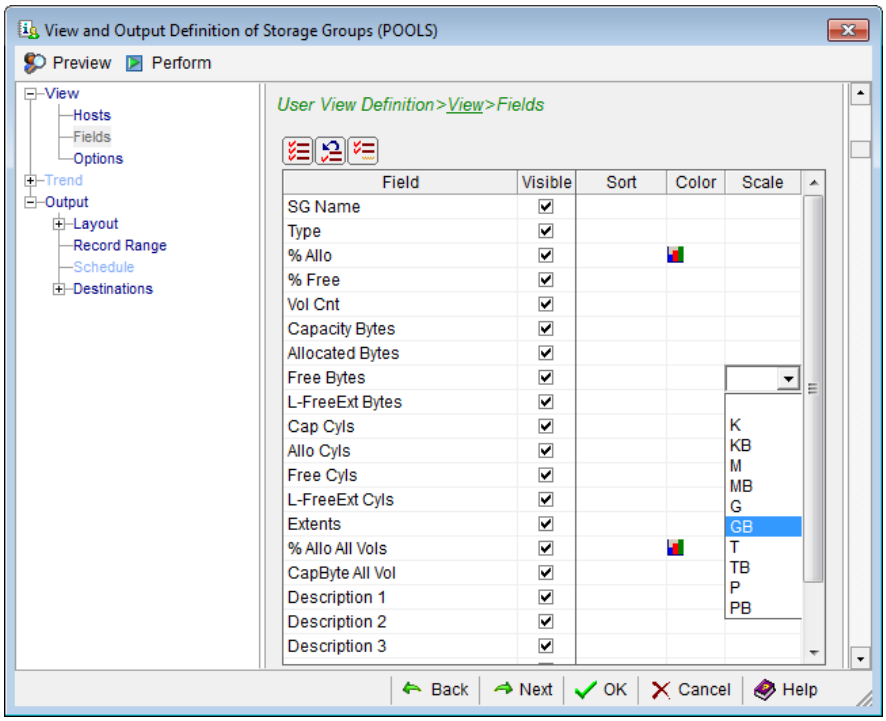
   The View and Output Definition dialog appears.

2. Click the Fields option in the left navigation pane of the View and Output Definition dialog.

   The Fields dialog appears.

3. Click the cell in the Scale column of the Field row for which you want to establish the scale for.

   A scale options list appears as show in the following sample:



4. Select the scale you want to use.

   The scale selected appears in the cell in the Scale column of the Field.

5. Click OK.

   The View and Output Definition dialog closes and the object view is updated with the scales selected. The column heading displays the scale after the heading title, for example if you selected a scale of GB for Free Bytes the column heading title will indicate the scale is GB and would look like the following sample in your object view:

Color Code Option

The Color Code option lets you set conditions for color coding values in object Table Views.

Note: The Customize View Wizard in the Web Client provides a row and field coloring feature. For more information, see the *CA Vantage GMI Web Client Guide*.

To color code values in object views in the Windows Client

1. Click the Definitions icon ( ) from the toolbar of the object Table View.

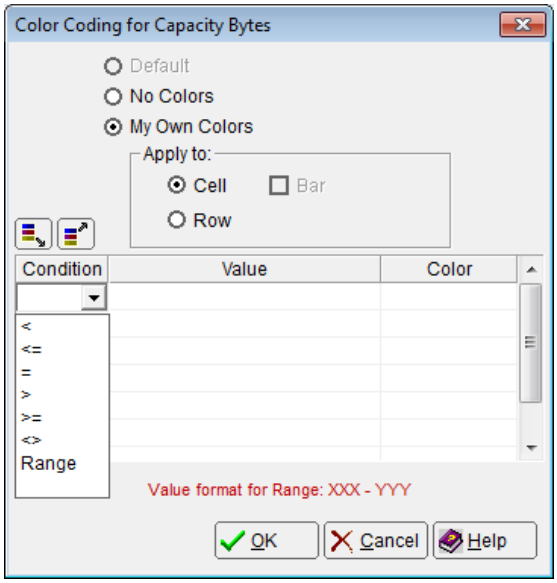
   The View and Output Definition dialog appears.

2. Click the Fields option in the left navigation pane of the View and Output Definition dialog.

   The Fields dialog appears.

3. Click in the Color cell for a field you want to assign a background color.

   The Color Coding dialog appears. The following Color Coding dialog sample shows how you can select a condition, enter a condition value, and then select a background color for the item that meets the condition.

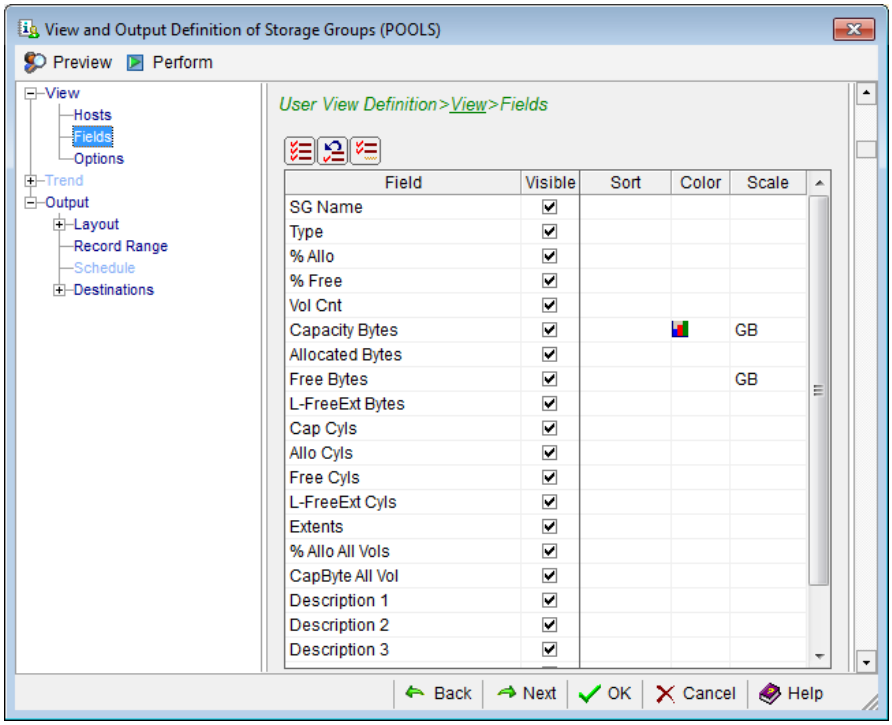


4. Complete the Color Code dialog.

   The condition, value, and color code you selected are displayed in the Color Code dialog.

5. Click OK in the Color Code dialog.

   The Color Code dialog closes and the field Color icon ( ) appears in the Color cell in the Fields dialog, as shown in the following sample.



6. Click OK.

   The View and Output Definition dialog closes. The object Table View appears with background of values that meet your conditions color coded.

Open Zoom Option (Drill-Down Feature)

The Windows Client Open Zoom feature provides you with a list of objects that have related information. You can select an object from the Zoom list dialog to view the related information.

Note: The Web Client provides a Zoom feature on the Object toolbar. For more information, see the *CA Vantage GMI Web Client Guide*.

To zoom to related objects in the Windows Client

1. Select a row in the object Table View.

   The selected row is highlighted.

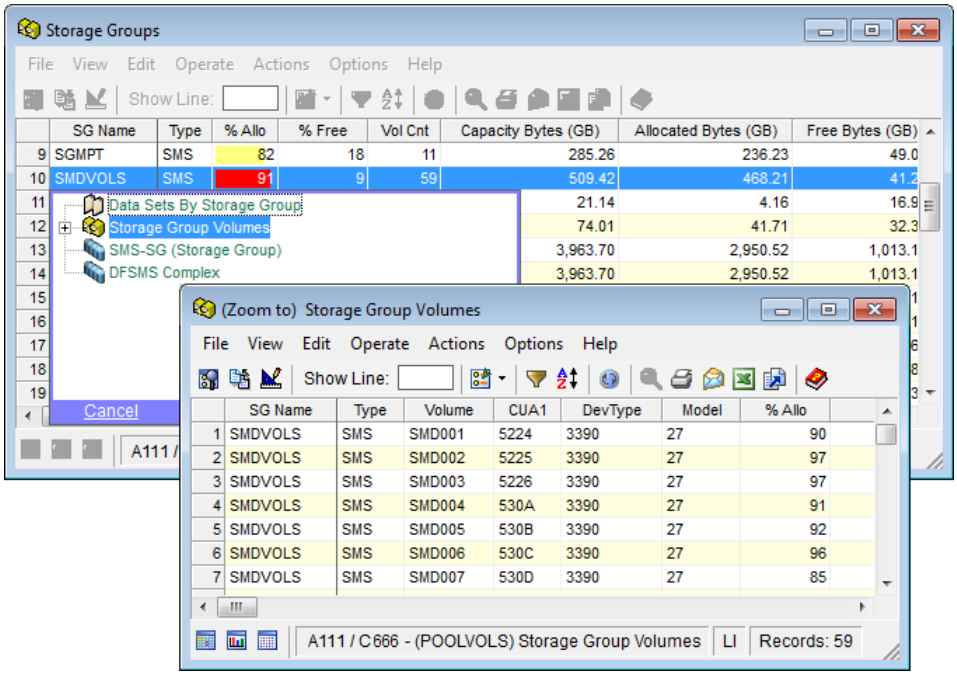
2. Click the Open Zoom icon ( ).

   The Zoom list dialog appears, listing related objects.

3. Click an object in the Zoom list.

   Object information in the object selected for that item appears.

The following sample illustrates a zoom from a particular Storage Group in the Storage Groups object to the same Storage Group in the Storage Groups Volumes object.



New Summary Objects Option

The Windows Client Summary Designer helps you create new summary objects from any source object. You select the method for defining the summary groups and select the fields to include in the summary object. The summary object includes summary groups from a source object table, and then provides statistics about all the object rows that fall into each summary group. The statistics include counts, maximum values, minimum values, average values, and totals. These statistics are provided for each group of records and for all the records.

You can start the Windows Client Summary Designer two ways, from the object pop-up menu or from the Object view Menu Bar.

Note: Currently, you cannot create or manage Summary Objects using the Web Client. You can view Summary Objects using the Web Client.

To start the Windows Client Summary Designer from the object pop-up menu

1. Right-click on the object in the Object Tree view.

   The Object pop-up menu appears.

2. Select New Summary Object in the Object pop-up menu.

   The Summary Designer appears.

To start the Summary Designer from the object view Menu Bar

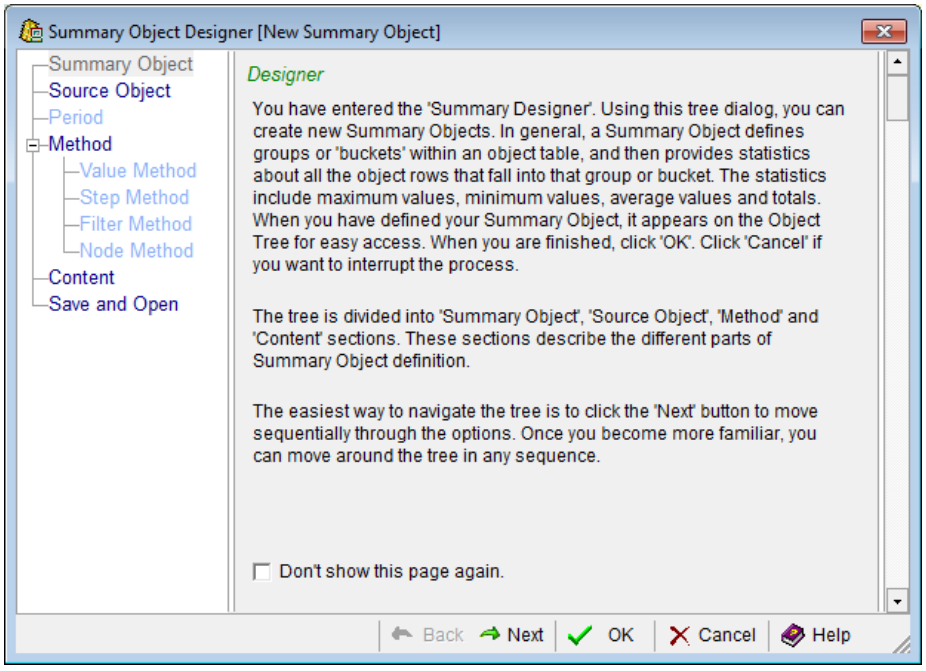
1. Click the object in the Object Tree view.

   The object view appears.

2. Select View, then New Summary Object from the object view Menu Bar.

   The Summary Designer appears.

The following is a sample of the Summary Designer.



Note: For more information about how to use the Summary Designer to create a new Summary Object click the Help icon in the Summary Designer dialog, or see the chapter "Working with Generalized Summary Objects" in the *CA Vantage GMI User Guide*.

Customized Reports

You can customize reports with the appearance and information you want by using the Windows Client Output Report wizard and the View and Output Definition wizard.

Note: The Customize Reports Wizard in the Web Client provides an output report feature you can use to create and manage user-view object data output reports and schedules for output reports. For more information, see the *CA Vantage GMI Web Client Guide*.

Windows Client Output Report wizard

This wizard allows you to define:

- The number of records (record range) of the report.
- The report format (print, web publishing, email, PDF, HTML, XML, TXT, Excel, FTP Server, and so on).
- The destination of the report (the printer, the directory, web server, email address, FTP server ID, and so on).

Windows Client View and Output Definition wizard

This wizard allows you to define:

- The z/OS hosts from which data is to be retrieved.
- The fields (columns) to be included in the report.
- The order of the fields (columns) displayed in the report.
- The sort, color, and scale of the data in the report.
- The layout design, contents, and record range of the report. This includes the grouping of the fields (columns) displayed in the report (using the Grouping facility in this feature).
- The report format (print, web publishing, email, PDF, HTML, XML, TXT, Excel, FTP Server, and so on).
- The destination of the report (the printer, the directory, web server, email address, FTP server ID, and so on).

To start the Output Report wizard in the Windows Client

1. Click the object in the Object Tree view to open the object view.
2. Click File, Output Report. Or click one of the following icons from the object window toolbar:
   - Print Report
   - Mail Report
   - Export data into Excel

   The Output Report wizard opens.

To start the View and Output Definition wizard in the Windows Client

1. Click the object in the Object Tree view.

   The object view opens.

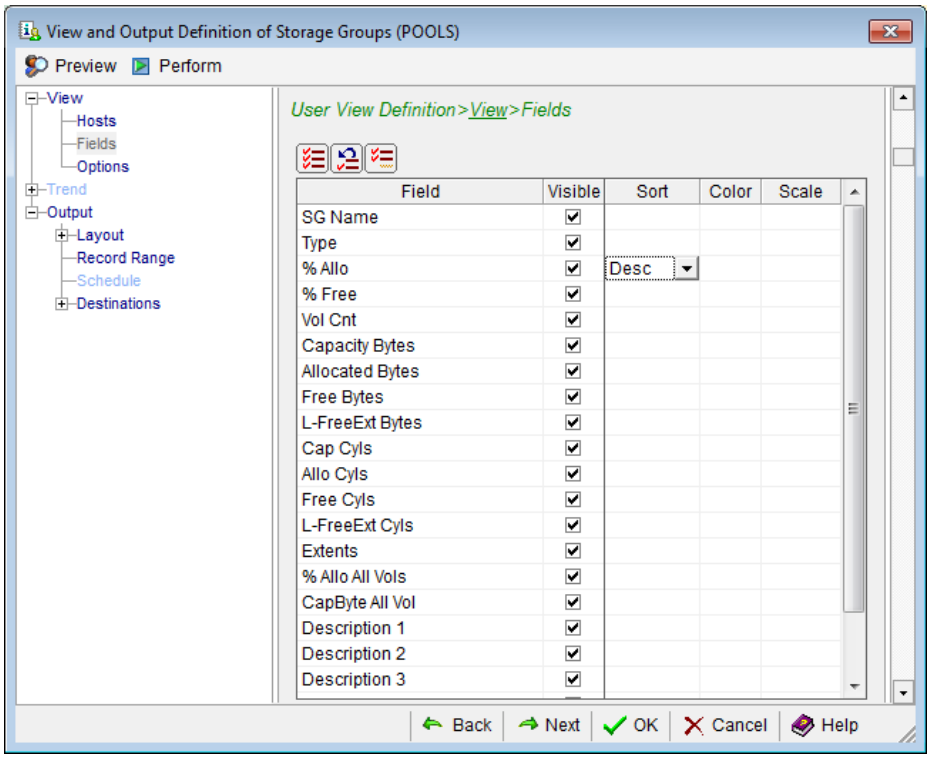
2. Click the Definitions icon ( ) from the toolbar of the object view.

   The View and Output Definition wizard opens.

Example: Define fields to be displayed in a Storage Groups report

You can create a report based on the Storage Groups object that contains information on the SG Name, Type, % Allo, Vol Cnt, Capacity Bytes, Allocated Bytes and Free Bytes. You can then sort the report by descending % Allo.

The following example shows how you would define this report in the Windows Client View and Output Definition>View>Fields dialog.



Note: For more information about the View and Output Definition dialog, click the Help icon in the View and Output Definition dialog.

Multiple Output Formats

You can use the Windows Client Output Reports wizard to define output formats, number of records, and destinations of your object view as it is currently displayed. You also have the option of using the View and Output Definition wizard to customize reports with the appearance and information you want.

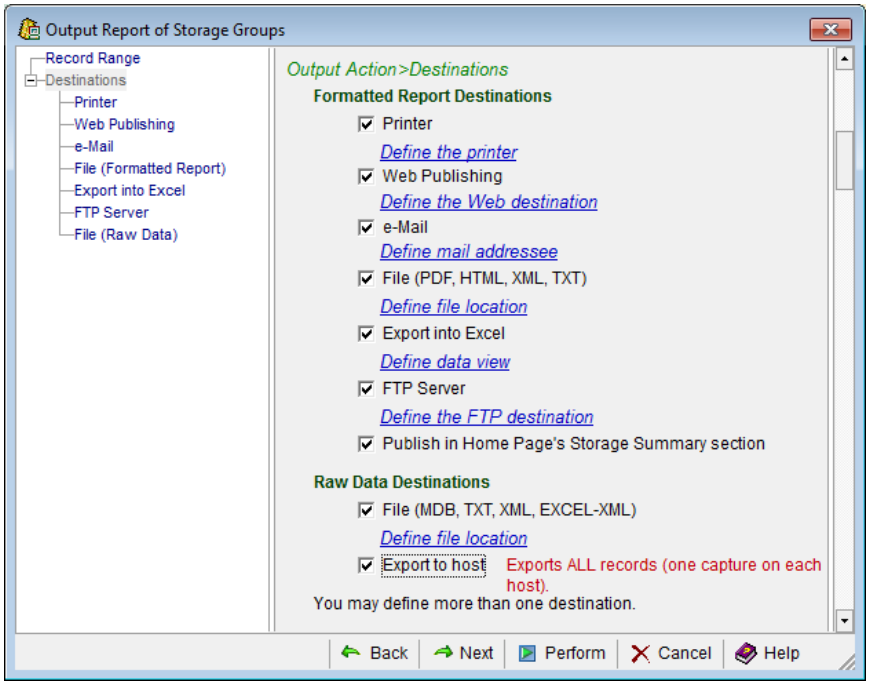
Note: The Customize Reports Wizard in the Web Client provides an output report feature where you can define output formats, schedules, and destinations of object user-view data. For more information, see the *CA Vantage GMI Web Client Guide*.

When using the Output Reports wizard in the Windows Client, the output includes all the information from your object view as it appears in your object view at the time you generate the report. Before you generate the report, you can use other object view options (such as filter, sort, color code, and so on) to design how the information appears in your object view and subsequently how the report appears. The number of records in the report depends on the settings in the Record Range page of the wizard.

To start the Output Report wizard in the Windows Client

1. Click the object in the Object Tree view to open the object.
2. Select File, then Output Report from the object View menu to open the Output Report wizard. If you just want to print a report, mail a report as an attachment, or export the object data to Excel, then simply click the corresponding report output icon in the object window toolbar.

The following is a sample of the Windows Client Destinations page of the Output Report wizard for the Storage Group object.



Each output destination gives you additional options as shown in the following example procedure for creating a Formatted File.

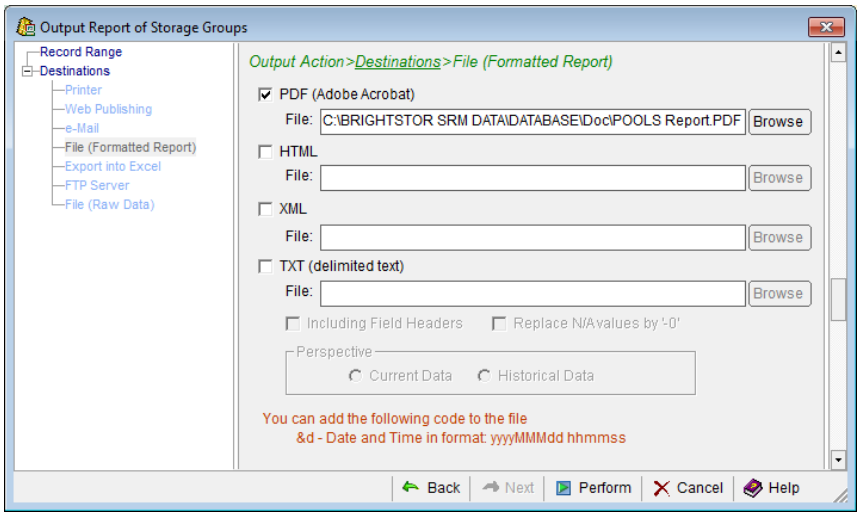
To produce a Formatted File using the Output Report wizard

1. Click the box next to the File (PDF, HTML, XML, TXT) option in the Destinations page of the Output Report wizard.

   A check mark appears in the box next to the File (PDF, HTML, XML, TXT) option and the Define file location link is highlighted.

2. Click the Define file location link.

   The File (Formatted Report Destinations) Destinations page opens with PDF (Adobe Acrobat) format selected, as shown in the following sample:



3. Click the box next to the formats of the report you want to create. For example, select the box next to HTML option if you do not want to create a HTML file.

   The File: field is populated with a default location dependent on the formats selected.

4. Click the Browse button next to the File: field if you want to change where the report is to be filed.

   The File: field is populated with the new file location.

5. Click Perform.

   The File (Formatted Report Destinations) page closes, and the file is created and filed in the location indicated.

Note: For more information about the Output Report wizard, click the Help icon in the Output Reports wizard.

Print Report Option

You can quickly print an object view using the Windows Client Print Report icon ( ) from the toolbar of the object view.

Note: The Customize Reports Wizard in the Web Client provides a output report feature with output report options. You can then print the output report as you would any report. For more information, see the *CA Vantage GMI Web Client Guide*.

When using the Windows Client Output Report wizard, the output includes all the information from your object view as it appears in your object view at the time you generate the report. Before you generate the report, you can use other object view options (such as filter, sort, color code, and so on) to design how the information appears in your object view and subsequently how the report appears. The number of records in the report depends on the settings in the Record Range page of the Output Report wizard. You also have the option of using the View and Output Definition wizard to customize reports with the appearance and information you want.

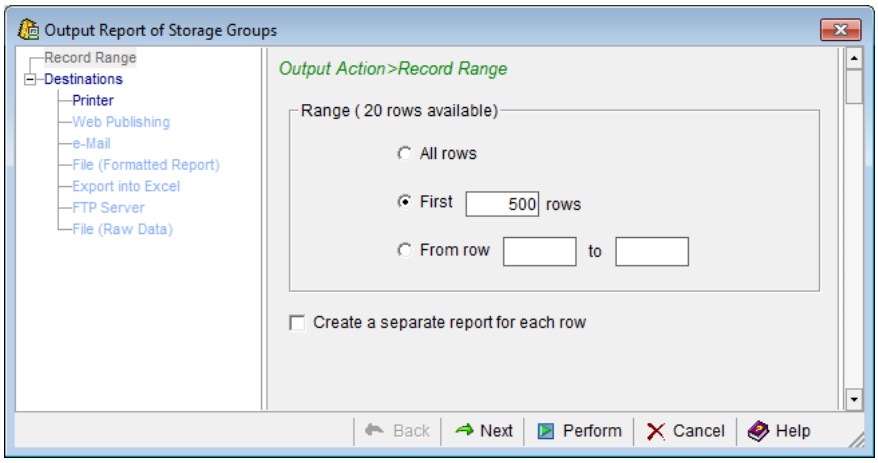
To quickly print an object view using the Print Report icon in the Windows Client

1. Click the object in the Object Tree view.

   The object view appears.

2. Click the Print Report icon ( ) from the toolbar of the object view.

   The Record Range page of the Output Report wizard opens, as shown in the following sample:



3. Indicate how many rows of information you want printed.

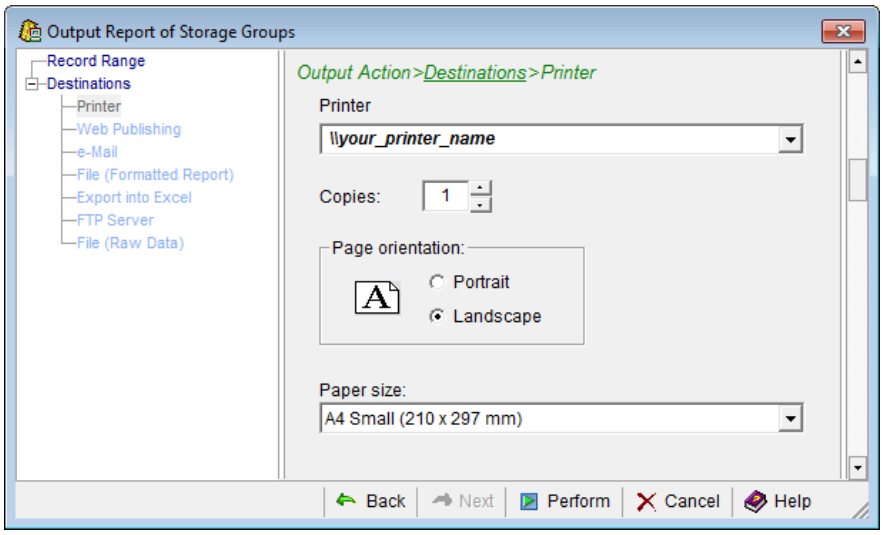
4. If you have defined a default printer in your Windows operating system and you want the print file sent to that printer click the Perform button.

   The Record Range page closes and the print file is sent to your default printer. You do not need to perform any more of the following steps.

5. If you want to indicate the printer you want the report sent to click the Next button.

   The Destinations page opens.

6. Click the *Define the printer* link to open the Printer page, as shown in the following sample:



7. Click the down arrow at the end of the Printer field and select the printer you want the report sent to.

   Note: The Printer drop-down list includes all printers you have defined in your Windows operating system printer setup.

   You can also use the Printer page to specify number of copies, page orientation, and paper size.

8. Click Perform.

   The Printer page closes and the print file is sent to the printer.

Note: For more information about the Output Report wizard, click the Help icon in the wizard.

Mail Report Option

You can email an object view report in PDF, HTML or Excel format using the Windows Client Mail Report icon () from the toolbar of the object view.

Note: The Customize Reports Wizard in the Web Client provides an email output report option. For more information, see the *CA Vantage GMI Web Client Guide*.

When using the Windows Client Output Report wizard to email a report, the output includes all the information from your object view as it appears in your object view at the time you generate the report. Before you generate the report, you can use other object view options (such as filter, sort, color code, and so on) to design how the information appears in your object view and subsequently how the report appears. The number of records in the report depends on the Record Range settings. You also have the option of using the View and Output Definition feature to customize reports with the appearance and information you want.

To quickly mail an object view using the Mail option in the Windows Client

1. Click the object in the Object Tree view.

   The object view appears.

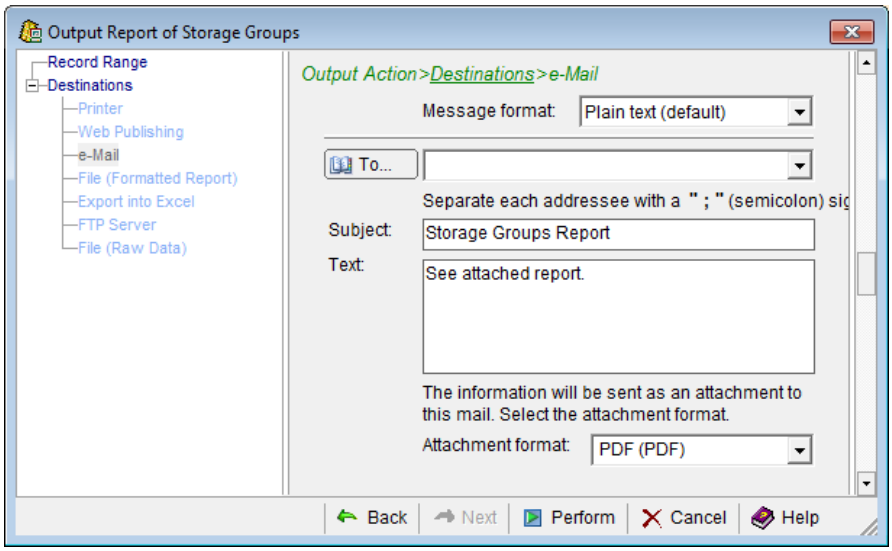
2. Click the Mail Report icon () from the toolbar of the object view.

   The Record Range page of the Output Report wizard opens.

3. Indicate how many rows of information you want included in the attachment report.

4. Click Next to open the e-Mail page. It opens with the box next to e-Mail checked and the Define mail addressee link highlighted.

5. Click Next to open the Destinations e-Mail page, as shown in the following sample:



Note: If you have defined a Mail to Address in the (global) Windows Client Options feature then that defined email address is displayed in the e-Mail Destination page.

6. Provide the email address, subject, body text to be included in the email, and file format of the attachment object view report, then click Perform.

   The e-Mail Destination page closes. An email is created and sent with the object view report attached.

Note: For more information about the Output Report dialogs, click the Help icon in the Output Reports wizard.

Other Standard Features

In addition to object views and related view options there are many additional standard features provided with both the Windows Client and the Web Client. These additional features can be found on the main window Menu Bar or Toolbar.

Windows Client

Windows Client additional features are explained in more detail in the *CA Vantage GMI Windows Client Guide* and the Windows Client *Help About Window* online help system.

Web Client

The Web Client also provides a Scheduler feature. End-users can create output report schedules using the Customize Reports wizard. Schedules and scheduled items can be managed using the Schedule Status feature found in the Tools menu. The Web Client Scheduler currently does not provide a JCL Management feature. The Web Client Scheduler feature is explained in more detail in the *CA Vantage GMI Web Client Guide* and the Web Client *Navigation* online help system.

The following sections give a short explanation to the Windows Client Scheduler and JCL Management features.

Scheduler

Both the Windows Client and the Web Client have Schedulers. The Schedulers provide a consistent set of scheduling services for all output activities within the user-interfaces. You can schedule events by month, week, day, hour, and minute.

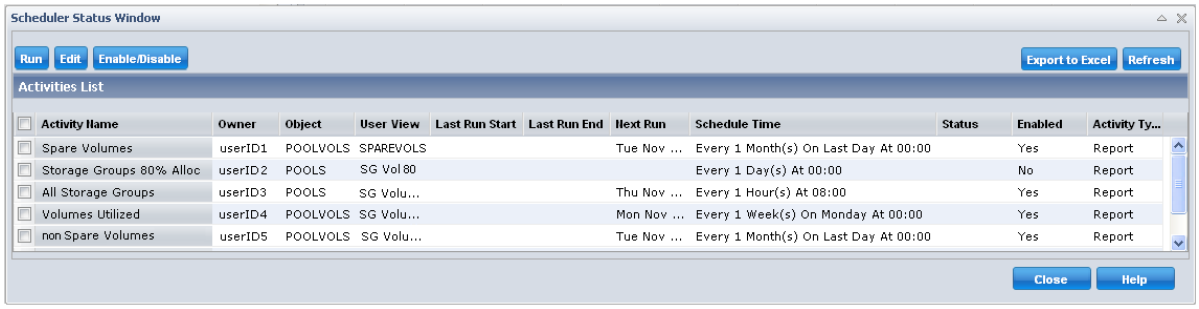
For example, suppose you wanted to be kept up to date on the scratch status of volumes by displaying a daily report on your web site. To do this, you could schedule a report based on the Volumes object to run every morning at 9:00 AM and set the Destination of the report to Web Publishing in the Windows Client, or Publish to Web in the Web Client. With this setup, the user-interface automatically runs a report on current volume activity every morning and publish the web report on your web server.

Note: For more information about Web Publishing using the Windows Client, see the *CA Vantage GMI Windows Client Guide*. For more information about publishing reports to a web server using the Web Client, see the *CA Vantage GMI Web Client Guide*.

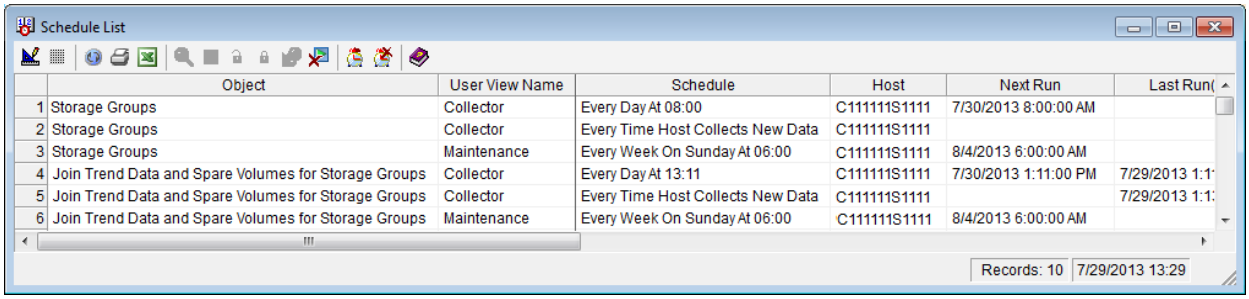
Both the Windows Client and the Web Client have Start Scheduler and Stop Scheduler options found under their Tools options. And the Windows Client has the Schedule List option and the Web Client has a Schedule Status option found under their Tools options which you can use to manage the different user-interface's scheduled items.

The Windows Client also has the Start Scheduler icon and the Schedule List icon in the Windows Client main menu Toolbar.

The following is an example of the Web Client Scheduler Status Window displayed when you select the Schedule Status option in the Tools menu:



The following is a sample of the Windows Client Schedule List window that is displayed when you select the Schedule List icon in the main toolbar, or the Schedule List menu item from the Tools menu:



Schedule List Dialog Toolbar Options

The Web Client Scheduler Status Window provides the following options:

Run

Runs the selected scheduled activities immediately.

Edit

Modifies a Schedule.

Enable/Disable

Enables or disables the selected schedules.

Export to Excel

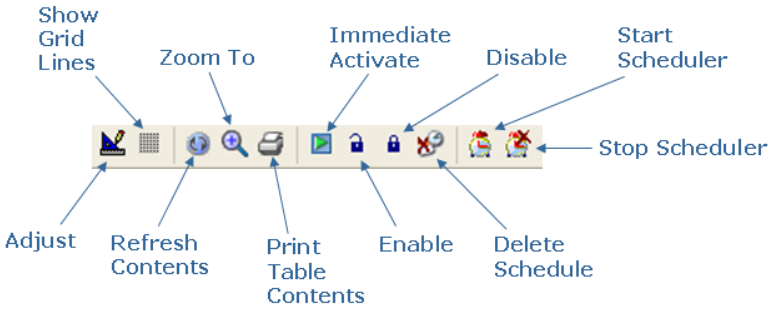
Exports the information displayed in the Activity List table.

Refresh

Refreshes the information displayed in the Activity List table with the latest data from the web application database.

Note: For more information about the Web Client Scheduler Status Window, see the *CA Vantage GMI Web Client Guide*.

The Windows Client Schedule List dialog provides the following toolbar options:



Note: For more information about the Scheduler and Schedule List, see the *CA Vantage GMI Windows Client Guide* and the *Help on Windows* online help system.

JCL Management

You can submit jobs manually from the Windows Client, either immediately or at a scheduled time. When you create a job (JCL stream) to submit, you determine the type of job being submitted, the number of steps, and so on. The job can involve your CAGMI enabled CA product, standard IBM utility programs, your own utility programs, or any combination of these. You can also use IEFBR14 jobs for testing purposes.

Note: Currently, the Web Client does not have a JCL Management feature.

The Windows Client helps you specify substitution variables (symbolic parameters) in the sample JCL you provide, allowing you to create generalized model JCL.

CAGMI provides two options for managing your JCLs:

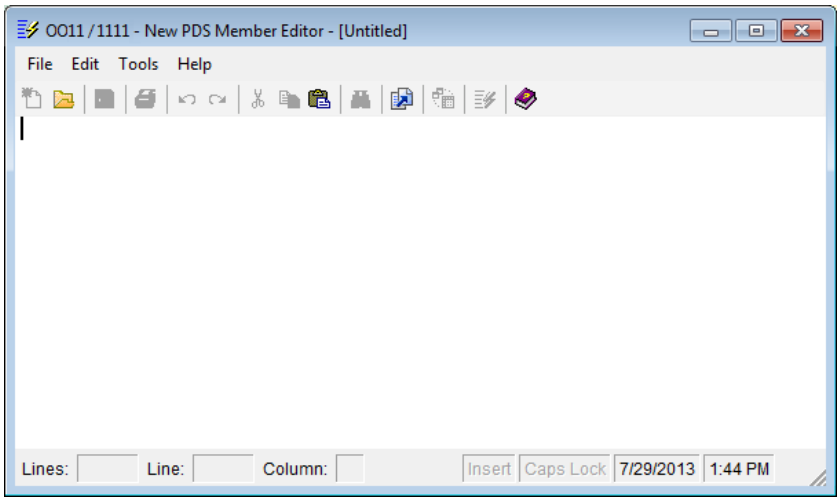
- The Member Editor (Submit) function
- The JCL Model List feature

The Member Editor (Submit) Function

The Windows Client Member Editor (Submit) function under the z/OS menu in the Main Window can be used to manage your JCLs. You can use it to specify substitution variables (symbolic parameters) in your sample JCLs. It has a drag-and-drop feature that allows you to drag rows from object displays and drop them onto a JCL template in the Edit dialog. When you drag and drop the rows, the variables from the rows are substituted into the template. You can also use the Member Editor (Submit) function to submit jobs manually, either immediately or at a scheduled time.

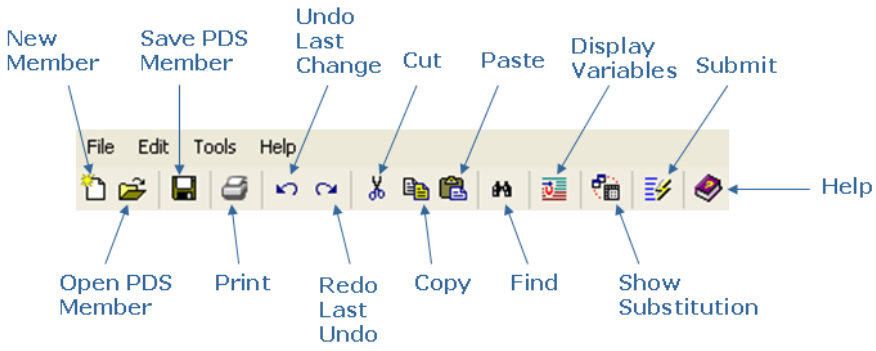
Note: Currently, the Web Client does not have a Member Editor (Submit) function.

The following is a sample of the Windows Client New PDS Member Editor dialog that is displayed when you select the Member Editor (Submit) function under the z/OS menu option.



PDS Member Editor Dialog Toolbar Options

The PDS Member Editor dialog provides the following toolbar options:



Note: For more information about PDS Member Editor options, click the Help icon on the PDS Member Editor dialog Toolbar.

The JCL Model List Feature

The Windows Client JCL Model List feature helps you manage JCL. The JCL Model List feature provides the same functionality as the Member Editor (Submit) function however it presents your JCL working environment (the Object Table, the Associated JCL Members, the Substitution Variable List, and the PDS Member Editor) in one window so that working with your JCL is much easier.

Note: Currently, the Web Client does not have a JCL Model List feature.

You can use the Windows Client JCL Model List feature to select JCL models to be used by objects or a group of objects using pattern matching. These models can be used to perform actions or mainframe management functions in batch jobs. The models can contain object variables that are substituted upon request or at submit time.

You can start the JCL Model List feature two ways, from the Object Tree Pop-up Menu or from the object view Toolbar.

To start the JCL Model List feature from the Object Tree pop-up menu in the Windows Client

1. Right-click an object in the object tree.

   The Object Tree pop-up menu appears.

2. Click the JCL Model List option.

   The JCL Model List dialog appears.

To start and use the JCL Model List feature from the object view Toolbar

1. Click the object in the object tree.

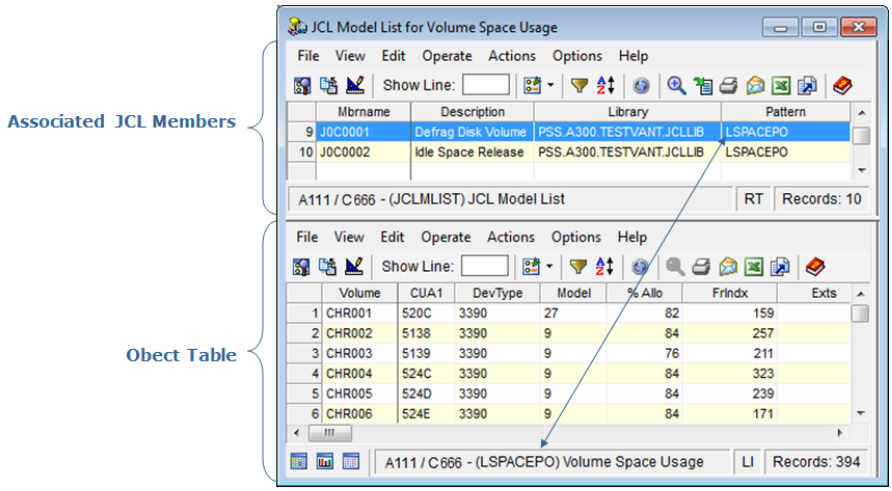
   The Object view appears.

2. Click the down arrow next to the Definitions icon in the object view Toolbar.

   The Definitions drop-down menu appears.

3. Click the JCL Model List option.

   The JCL Model List dialog appears. The JCL Model List dialog displays the object data and the list of JCL members associated with that object in separate panes as shown in the following sample:



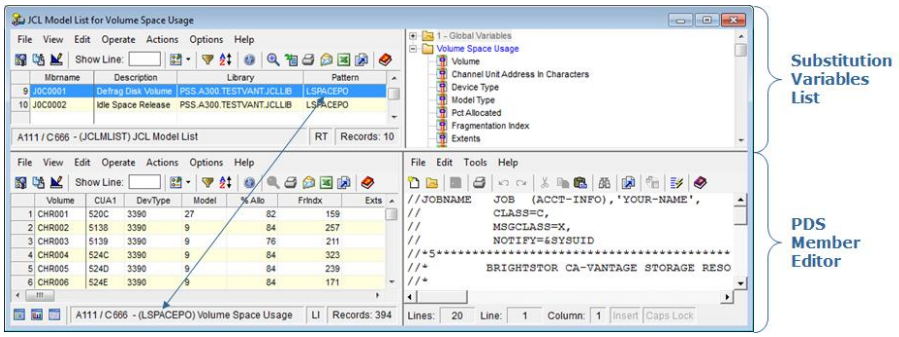
   The Object Table pane displays the object selected. You can use the object view menu options in the pane to change the object view, such as sort, filter, zoom, and so on.

   The Associated JCL Members pane displays the JCL models you have created and linked to the object selected. You can use the Associated JCL Members Action options to modify the JCL Model information displayed in the pane, add new JCL models, and to delete JCL Models.

   Note: For more information about the Associated JCL Members pane, click the menu bar Help option and select Help About Object.

4. Double-click a model line, and two additional panes appear in the JCL Model List dialog; the Substitution Variable List for the object, and the PDS Member Editor with the model JCL.

   The following sample shows how the JCL Model List displays all 4 panes in the JCL Model List dialog.



   Using the PDS Member Editor pane you can edit the model JCL, create new JCL Models, insert variables, substitute variables with object information, submit the JCL, and so on.

   Note: For more information about PDS Member Editor options click the Help option on the PDS Member Editor pane Menu Bar.

5. Click your cursor in the JCL in the PDS Member Editor pane where you want a variable to be inserted, and then double click the desired variable in the Substitution Variable List pane.

   The variable appears in the PDS Member Editor pane where you indicated.

6. Repeat step 5 until you have included all your variables in the PDS Member Editor pane.

   Now you are ready to substitute the variables in your JCL with object line information.

7. Click a line or multiple lines in the Object Table pane, then drag-and-drop them into the PDS Member Editor.

   When you do this, a new PDS Member Editor dialog is opened with the resulting JCL; that is, the field values from your selected object table lines are substituted into the variable locations in a copy of your JCL model in a new PDS Member Editor dialog.

8. Click the Submit icon in the PDS Member Editor Toolbar when your JCL is complete and you are ready to submit it.

   A message dialog appears advising that your JCL has been submitted.

Note: For more information about working with the JCL Model List, see the *CA Vantage GMI User Guide.*

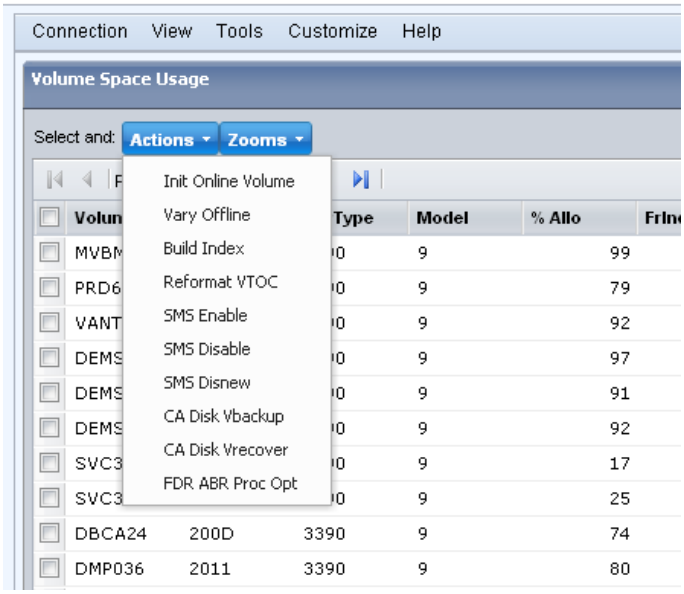
User-Interface Object Action Options

The Actions option is only available for certain objects and it is used to perform actions on specific object items. The actions available for an object relate to specific functionality of the object being accessed.

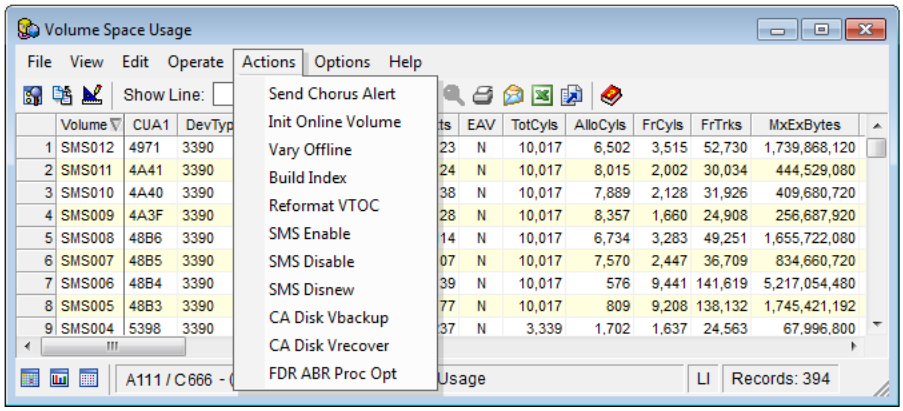
Note: If the Windows Client *Help on Object* or the Web Client *Object-object_name-Help* for an object lists Actions, but the Actions menu option does not display any Actions, it is because your CAGMI license does not authorize you to use them.

Example: Display of the Action menu of the Volume Space Usage object

The following is a sample of the Volume Space Usage object Action menu displayed in the Web Client:



The following is a sample of the Volume Space Usage object Action menu displayed in the Windows Client:



Note: When object actions are performed, security checks are made with the proper access levels. The user ID for each security check will be either the user ID associated with the CAGMI started task, or the user ID that owns the script (the person who created or last modified it). For more information about the security system, see the description of system parameter SECURSCR in the *CA Vantage GMI Configuration Guide*.

Display Actions Dialog Feature

You can use the actions dialog feature to perform actions on certain objects.

To start the Actions dialog feature

1. Click an object in the Object Tree.

   An object in Table View appears in your user-interface window.

2. Select a line or group of object data in the object Table that you want to perform the action on.

   The line or lines of object data in the Table View is selected.

3. If you are using the Windows Client, click Actions in the Table View Menu Bar. If you are using the Web Client, click Actions in the object Menu Bar.

   The Actions drop down list appears.

4. Click the Action you want to perform.

   The Actions dialog appears.

Note: For more information about how to use the Actions dialog view the *Help on Window* online help system in the Windows Client or the *Navigation* online help system in the Web Client. For more information about an object and available object actions view the *Help on Object* online help system in the Windows Client or the *Object-object_name-Help* online help system in the Web Client. If the *Help on Object* for an object or the *Object-object_name-Help* online help system lists Actions, but the Actions menu option does not display any Actions, it is because your CAGMI license does not authorize you to use them.

User-Interface Online Help Systems

Both the Web Client and the Windows Client have two types of online help systems:

Windows Client

Help on Window (Help About Window)

Provides information on how to use Windows Client features and if you click Help About Window from a window or dialog Help menu option it provides help about the opened window or dialog. This online help system also has a search facility.

Note: From the object tree this help is called Help on Window and when you have a window open and you click the Help menu option this is called Help About Window.

Help on Object (Help About Object)

Provides object specific information. It includes a description of the object, actions available, and information about the object data fields in the object.

Note: If the *Help on Object* for an object lists Actions but the Actions menu option does not display any Actions it is because your CAGMI license does not authorize you to use them.

Note: From the object tree, this help is called Help on Object, and when you have the object open in a window and click the Help menu option, this is called Help About Object.

To access the Windows Client Help on Window (Help About Window) online help system

1. Click the Help icon () displayed in an open window or dialog.

   The help topic that pertains to that window or dialog is displayed.

   Most windows and dialogs also have a Help menu option where you can select Help About Window to display the help topic that pertains to that window or dialog is displayed.

You can also open this online help system from the main Windows Client menu by clicking the Help menu option and selecting CA SRM and CA Vantage Help Topics or by clicking the Help icon ( ) in the main Windows Client toolbar.

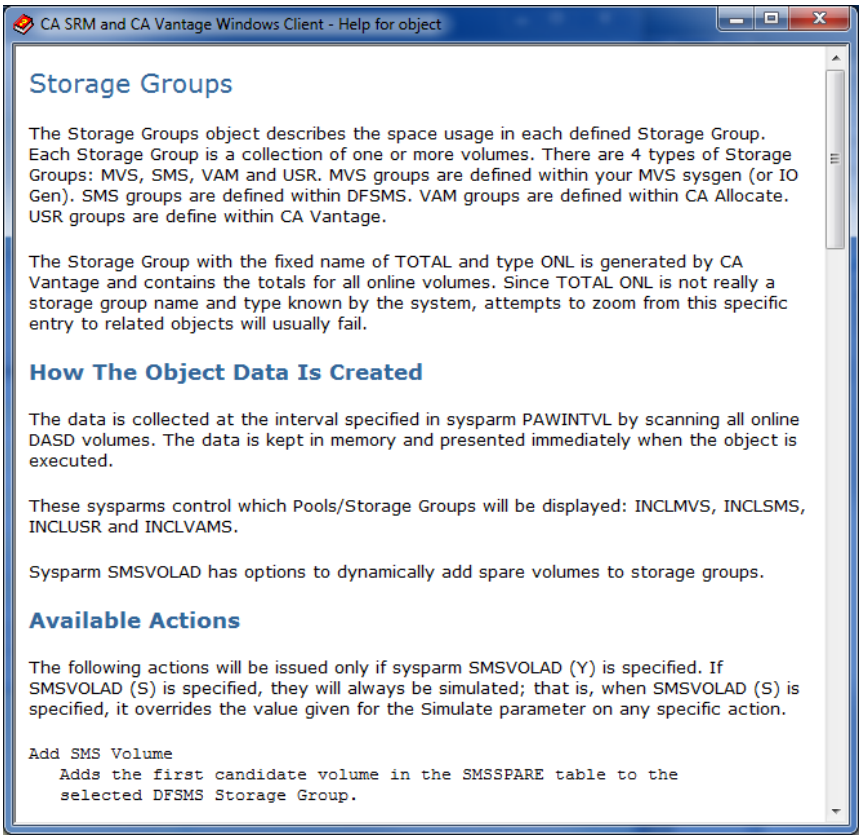
To access the Windows Client Help on Object (Help About Object) online help system

1. Right-click on an object in the Object Tree dialog.

   The Object pop-up menu appears.

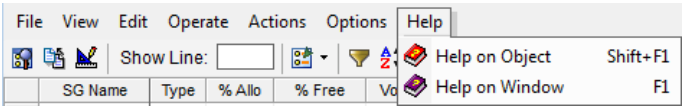
2. Click Help on Object.

   The Help on Object system appears showing the help page related to the object selected as shown in the following sample of the Help on Object for the Storage Groups object.



Example: Display help from an object view

You can also access the Help on Object (Help About Object) and the Help on Window (Help About Window) online help systems from the Help menu item in the object view Menu Bar as shown in the following sample of the an object table view Menu Bar.



Web Client

Navigation Online Help

Provides information on how to navigate the Web Client and use Web Client features. If you click Help then Navigation from a window, wizard, or dialog, the online Help topic displayed provides help about the opened window, wizard, or dialog. This online help system also has an index and a search facility.

Object - *object_name* - Help

Provides object specific information. It includes a description of the object, actions available, and information about the object data fields in the object.

Note: If the Object - *object_name* - Help for an object lists Actions, but the Actions menu option does not display any Actions, it is because your CAGMI license does not authorize you to use them.

To access the Web Client Navigation online help system

Click Help and then Navigation in the object Menu Bar, or in the opened window, wizard, or dialog. The help topic that pertains to that open window, wizard, or dialog is displayed. The help topic displayed when you click Help and then Navigation in the object Menu Bar is the Welcome page.

You can also open this online help system by clicking Help in the top line of the main Web Client window.

To access the Web Client Object - *object_name* - Help online help system

Click Help and then Object - *object_name* - Help on the object Menu Bar. The Object - *object_name* - Help appears showing the help page related to the displayed object.

Chapter 2: Setting Up CAGMI

This chapter explains how to set up CAGMI.

This section contains the following topics:

CAGMI Components

CAGMI consists of the following two components:

z/OS Server

Installed on the mainframe.

User-Interface (PC) Clients

The following user-interface clients are available:

Windows Client

This client is a Windows-based user-interface. This client provides full functionality and when you install the Windows Client you also install the Config Client and the CA Vantage GMI documentation set. You can use the Config Client to set CA Vantage GMI parameters.

Web Client

This client is a web-based user interface. The client can be used from any PC with internet access to the web client application server. You can access the CA Vantage GMI documentation set from the web client. The current web client provides partial functionality compared to the Windows client.

Note: Install the Windows client first and then the web client. The Windows client contains the Config client which you can use to set CA Vantage GMI system parameters.

3270-based interface (View 3270 Client)

This client provides partial functionality that is limited to:

- User-driven functionality of view and analysis
- Filtering and sorting, zooming
- Ability to initiate actions on selected entries

Note: The View 3270 Client is considered a character-based user-interface, not a graphic-based user-interface, so it is not discussed in this guide. For View 3270 Client installation and configuration information, see the chapter "Configuring CAGMI" in the *CA Vantage GMI Configuration Guide*. For more information about using the View 3270 Client, see the chapter "Navigating the View 3270 Client" in the *CA Vantage GMI User Guide*.

Install and Configure CAGMI

In order to use CAGMI you must install and configure both the z/OS component and at least one of the User-Interface (PC) Client components (you can use the Windows Client, the Web Client, or both).

Note: If you have already installed CAGMI components for one of the other CAGMI enabled products, there is no need to install the components again, however you must perform step 4 in the following procedure for the CAGMI qualified product. If you are installing the components for the first time, ensure that you have received the proper installation materials for the z/OS and the User-Interface (PC) Client components. If you do not have all the installation materials you need, then contact CA Support at http://ca.com/support.

To install and configure both components of CAGMI

Note: System software and hardware requirements for both components of CAGMI can be found in the *CA Vantage GMI Installation Guide*.

1. Install the z/OS server as described in the *CA Vantage GMI Installation Guide*.

   The z/OS server is installed on your z/OS system.

2. Install the Windows Client as described in the *CA Vantage GMI Installation Guide*.

   The Windows Client is installed on at least one PC.

   Note: When you install the Windows Client, you also install the CA Vantage GMI Config Client which you can use to set CA Vantage GMI system parameters. If you want to use the Web Client, we suggest you install it after you have completed step 8. However, you can install the Web Client after you have completed step 3 and to be able to use it to work with CAGMI enabled product objects you must complete step 4 for each CAGMI enabled product. For more information about installing, navigating, and using the Web Client, see the *CA Vantage GMI Web Client Guide*.

3. Configure the parts of the z/OS server that are common to all CAGMI enabled products as described in the chapter “Configuring CAGMI” in the *CA Vantage GMI Configuration Guide*.

   Common CAGMI parts of the z/OS server are configured on your z/OS system.

4. Configure the parts of the z/OS server that are specific to your CAGMI enabled product according to the chapter “z/OS Host Configuration" in this guide.

   Your CAGMI enabled product objects are defined for retrieving your CAGMI enabled product object data by the CAGMI user-interface.

   Note: If you want to use the Web Client you can install it now or after you complete step 8. For more information about installation, starting, navigation, and using the Web Client, see the *CA Vantage GMI Web Client Guide*.

5. Start the Windows Client according to the section Start and Log in to the Windows Client (see page 66).

   The Windows Client is up and running on your PC.

6. Define z/OS host connections as described in the section Define a z/OS Host (see page 70).

   At least one z/OS host is defined in your Host List.

7. Connect the Windows Client to a z/O host and login as described in the section Connect and Log In to the z/OS Host (see page 74).

   The Windows Client is connected and logged in to a z/OS host. You can start using it to view and work with object data.

8. Define the Windows Client data collection mode as described in the section Define the Data Collection (see page 75).

   Object data is automatically displayed in the object view when you open an object.

Note: The latest version of the CA Vantage GMI documentation set is available at http://ca.com/support. However, you can install the Windows Client first (with no configuration) and then access the CA Vantage GMI documentation set. To access the CA Vantage GMI documentation set from the Windows Client click Start, Programs, CA, CA Storage Resource Manager, Documentation, and then Manuals - z/OS, or from the Windows Client main menu Help drop-down menu click Manuals - z/OS. The CA Vantage GMI documentation set consists of the following documents:

- *CA Vantage GMI Best Practices Guide*
- *CA Vantage GMI Configuration Guide*
- *CA Vantage GMI Installation Guide*
- *CA Vantage GMI Message Reference Guide*
- *CA Vantage GMI Reference Guide*
- *CA Vantage GMI Release Notes*

- *CA Vantage GMI User Guide*
- *CA Vantage GMI Web Client Guide*
- *CA Vantage GMI Windows Client Guide*

Start and Log In to the Windows Client

If you want to use the Windows Client for your CAGMI session then you must start it.

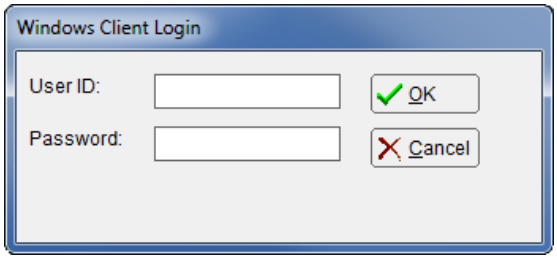
By default, when you start the Windows Client, you automatically log in as the ADMIN user (the default administrator), no Windows Client Login dialog appears, and the Windows Client Main Window appears. However, if this default was changed to require a specific user ID and password, the Windows Client Login dialog appears when you start the Windows Client and you must provide a valid user ID and password.

Note: For more information about creating and maintaining Windows Client logins, see the section User Manager in the *CA Vantage GMI Windows Client Guide*.

To start and log in to the Windows Client

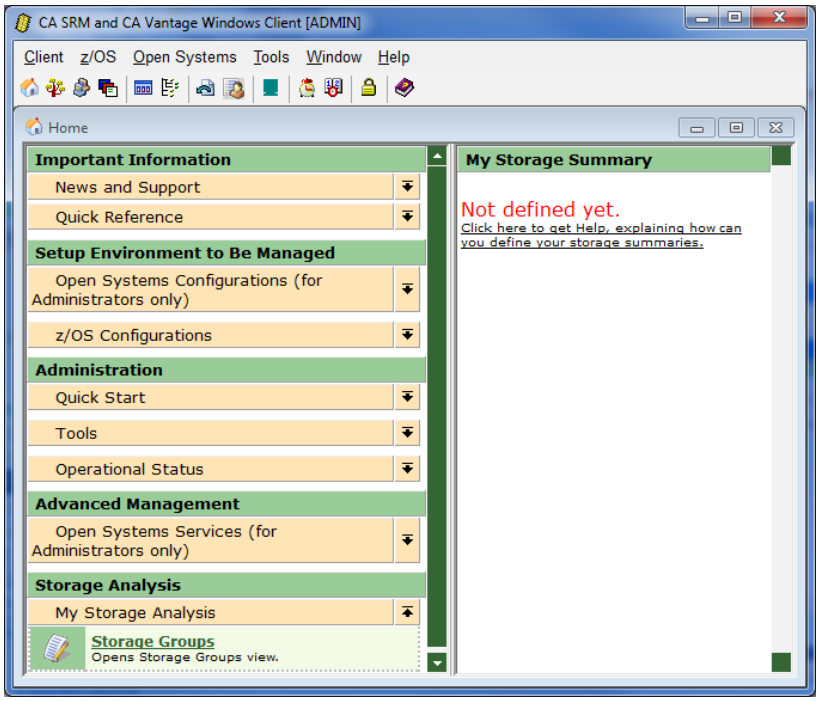
1. Click Start, Programs, CA, CA Storage Resource Manager, and select Windows Client.

   The Windows Client Login dialog appears as shown in the following sample.



2. Type in your Windows Client User ID and Password and click OK.

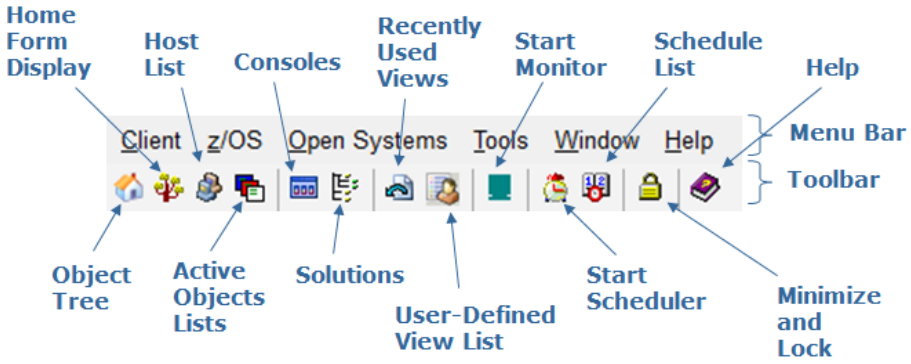
   The Windows Client Main Window appears with the Home Form dialog displayed as shown in the following sample.



To start the Windows Client, click Start, Programs, CA, CA Storage Resource Manager, and select Windows Client. If no Windows Client login is required, the Windows Client Main Window appears with the Home Form dialog displayed.

Windows Client Menu Bar and Toolbar Options

The top of the main window of the Windows Client has the following Menu Bar and Toolbar options:

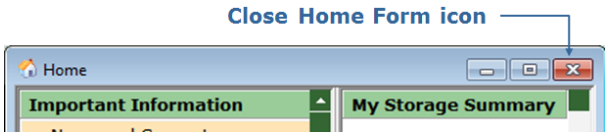


Note: For more information about the Windows Client Menu Bar and Toolbar options, see the *CA Vantage GMI Windows Client Guide* or click the Help icon on the Windows Client Menu Bar.

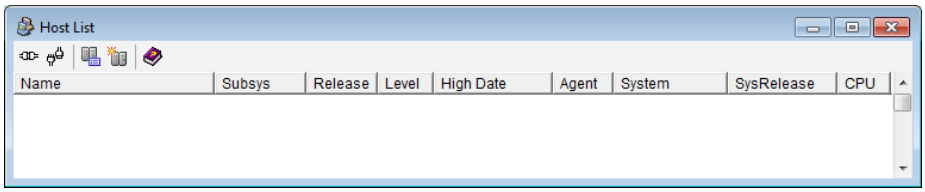
The Windows Client View

Many Windows Client users prefer to close the Home Form window and display the Host List and the Object Tree windows.

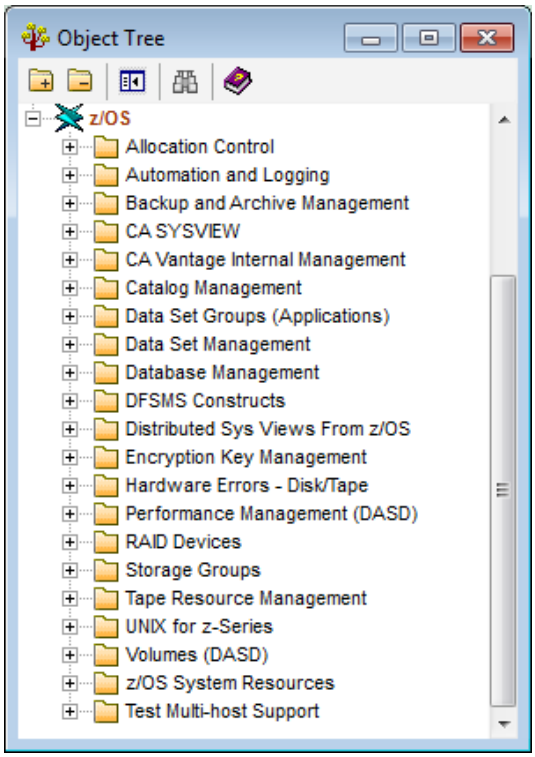
To close the Windows Client Home Form window click the Close icon located at the top right hand corner of the Home Form window, as shown in the following sample:



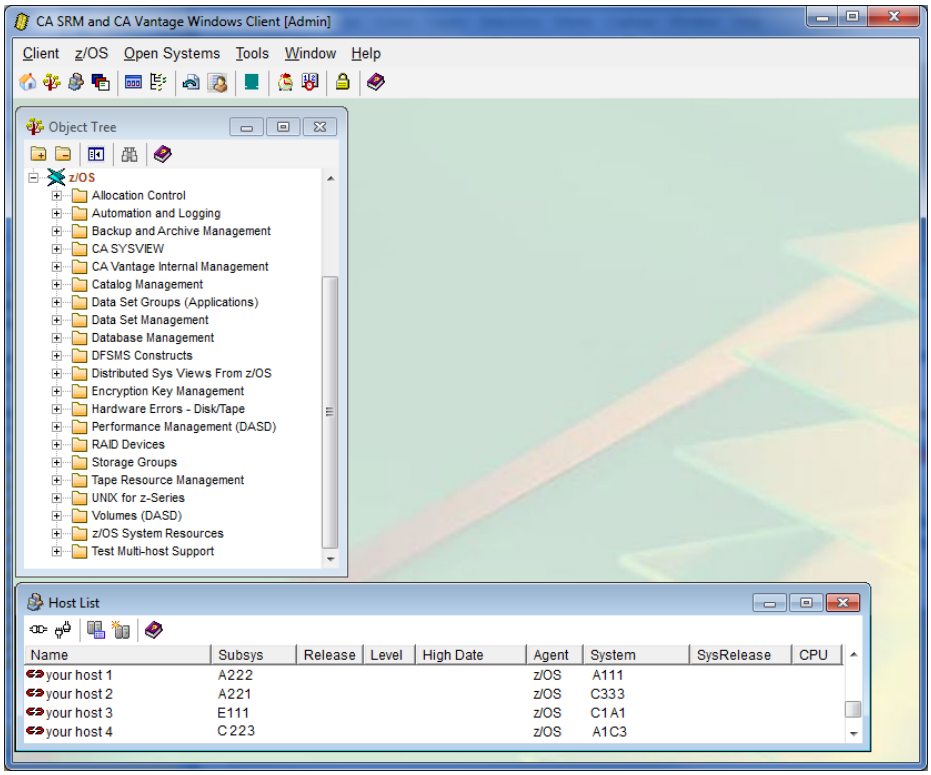
To display the Host List window click the Host List icon ( ) located in the Windows Client Toolbar. The following is a sample of an empty Host List window:



To display the Object Tree window click the Object Tree icon ( ) located in the Windows Client Toolbar. The following is a sample of the Object Tree window:



You can resize and move displayed windows in the Windows Client the same as you resize and move opened windows on your PC desktop. Arrange the Host List and Object Tree windows so they display as shown in the following screen capture sample.



Define a z/OS Host

After starting the Windows Client you need to connect the Windows Client to the z/OS server component. In order to connect the Windows Client to the z/OS server component, you must first define the z/OS server or servers that you plan to use. The Windows Client Host List feature is used to define z/OS server connections.

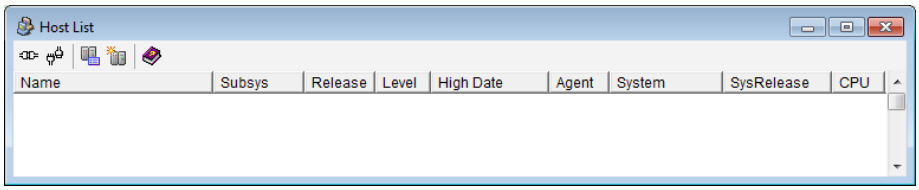
You can define as many z/OS servers as you want and you can simultaneously connect to as many z/OS servers as you want (as long you have installed and configured the z/OS server component on them).

To define a z/OS host

Note: The following procedure assumes you have started the Windows Client and the Host List window is not displayed. If the Host List window is already displayed then you can skip step 1.

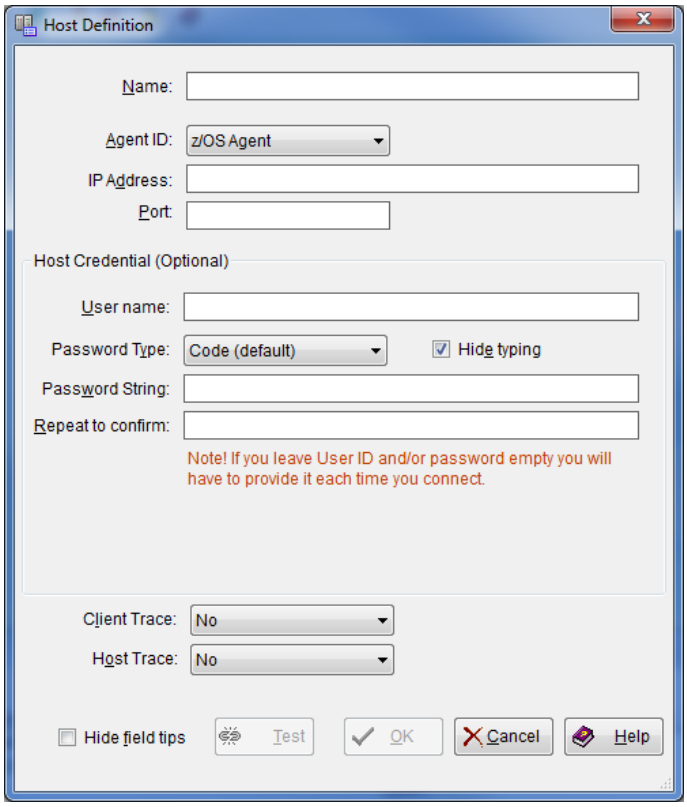
1. Click the Host List icon ( ) in the Windows Client toolbar.

   The Host List dialog appears as shown in the following sample.



2. Click the New Host icon ( ) in the Host List window toolbar.

   The Host Definition dialog appears as shown in the following sample.



3. Complete the Host Definition dialog, the field options are:

Name

Provides the Host Name displayed in the Host List dialog.

Agent ID

Provides the name of the agent that collects data from the host. Select z/OS Agent if it is not already displayed.

IP Address

Defines the IP address or server name of the z/OS host to which you are connecting.

Port

Defines the port number of the z/OS host to which you are connecting.

User name

(Optional) Provides the user ID, which is sent to the host in encrypted form. If you leave the user name, password, or both fields empty, you will have to provide them each time you connect to the host. However, if the host will be used in scheduled operations this information is required.

Password Type

Select the password type in the Password Type drop-down list. The host definition supports the following types of passwords:

Password Type

The password is and ordinary password of up to 8 characters.

Passphrase

The password is a passphrase between 9 and 100 characters.

Token+PIN

The password is a token + PIN combination.

Password String

(Optional) Provides the password string, which is sent to the host in encrypted form. If you do not specify a password string then you must enter it every time you try to connect the Windows Client to the z/OS host.

Note: You also have the option of providing the z/OS host user ID and not the password when setting up your Host Definition; this is often done at sites where security policies require Passwords to be changed periodically. If the host will be used in scheduled operations, the password string is required.

Confirmation

Renter the password string. If you provide a Password String then you must provide the same password string in the confirmation field.

Client Trace

(Optional) Indicates if the system should save the messages relating to host-client communication in a log file. For more information about this field click the Help icon. Normally you will only select this if requested to do so by CA Support.

Host Trace

(Optional) Creates a trace on the host of all the messages exchanged between the z/OS host and the Windows Client. For more information about this field click the Help icon. Normally you will only select this if requested to do so by CA Support.

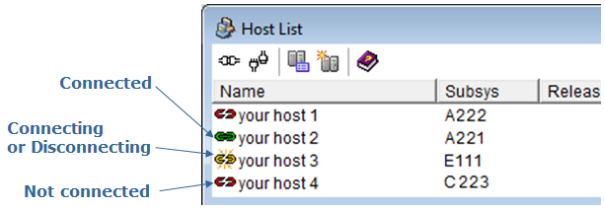
4. Click Test to test your connection information.

   The Windows Client advises you if your connection to the z/OS host is successful.

5. Click OK.

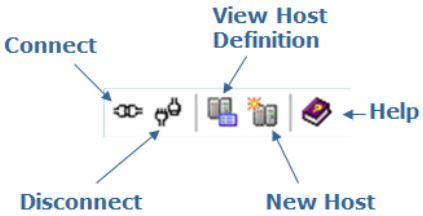
   The Windows Client stores the host definition. The new host definition appears in the Host List window. The Host List window displays all your defined hosts and their connection status.

   The following is a sample of the Host List window showing the different connection status icons.



Host List Dialog Toolbar Options

The Windows Client Host List dialog provides the following toolbar options:



Connect and Log In to the z/OS Host

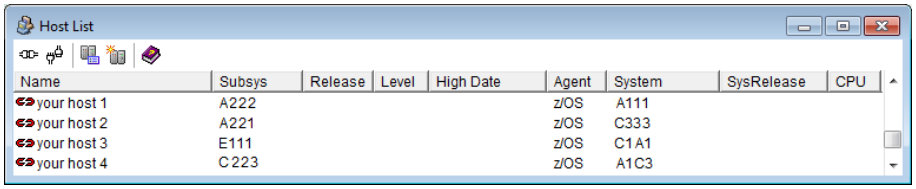
After you start the Windows Client and have defined z/OS host connections, you can then connect the Windows Client to a z/OS host and log in to the z/OS host. Once that is done you can start using CAGMI.

To connect and log in to the z/OS host

Note: The following procedure assumes you have predefined your z/OS hosts and they are displayed in the Host List window. If you do not have predefined hosts in the Host List window then see the section Define a z/OS Host (see page 70). If the Host List window is already displayed in your Windows Client window then skip step 1.

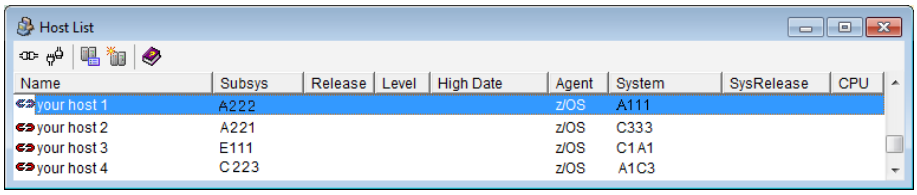
1. Click the Host List icon () in the main Windows Client toolbar.

   The Host List window opens. The following is a sample of the Host List window:



2. Select the host to which you want to log in to from the Host List window.

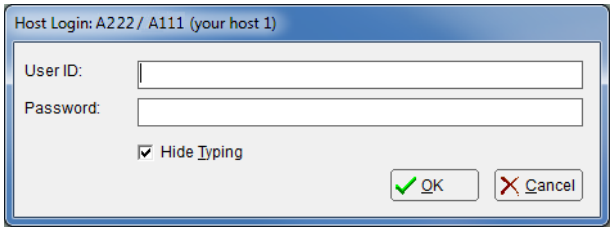
   The selected host definition is highlighted. as shown in the following sample.



3. Click the Connect icon ( ) in the Host List window toolbar.

   If your user ID and password were provided in the Host Definition dialog for the selected host, the Windows Client attempts to connect to the host. If the connection is successful then the connection status icon changes from the Not Connected icon ( ) to the Connected icon ( ). You can begin using CAGMI and you can skip step 4.

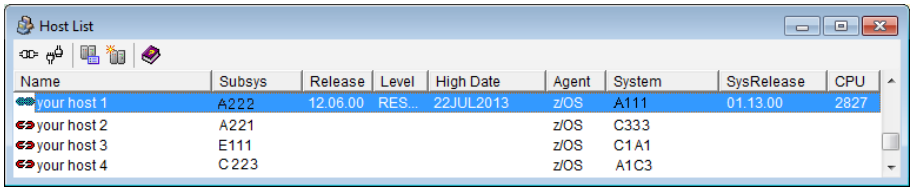
   If your user ID and password were not provided in the Host Definition dialog for the selected host, then the Host Login dialog appears as shown in the following sample dialog, and you must proceed to the next step.



4. Enter a valid user ID and password in the Host Login dialog, and click OK.

   The Host Login dialog disappears.

   The Windows Client attempts to connect and log on to the z/OS host. When the connection and log on is complete, the connection icon in the Host List window changes from the Connecting icon ( ) to the Connected icon ( ), as shown in the following sample, and you can begin using CAGMI.



Note: For more information about defining hosts and connecting to hosts, see the *CA Vantage GMI Windows Client Guide* or the online help.

Define the Data Collection Mode

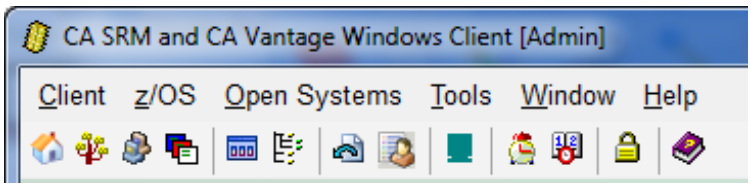
CAGMI can be configured to collect data in either Automatic or Manual mode.

- In Automatic mode, object data is collected automatically when you open an object.
- In Manual mode, object data is only collected by the Windows Client when you click the Execute icon ( ) in the open object view Toolbar.

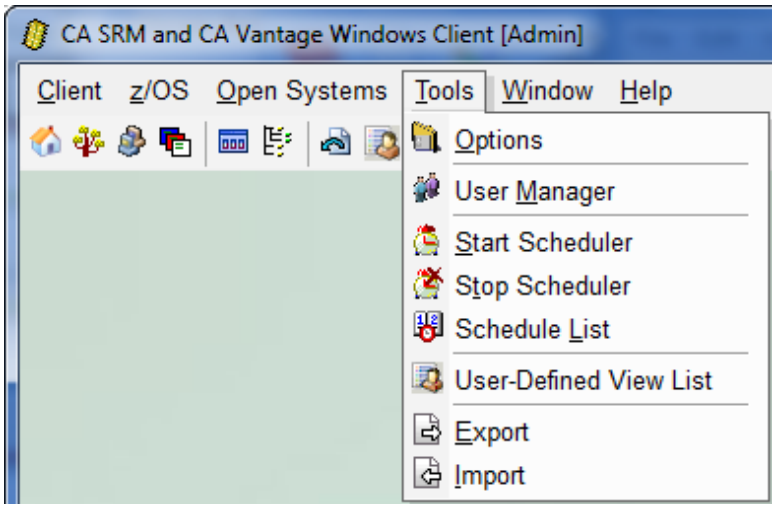
To define the data collection mode in the Windows Client

1. Click Tools in the Windows Client main window Menu Bar.

   The following is a sample of the Windows Client main window Menu Bar and Toolbar.



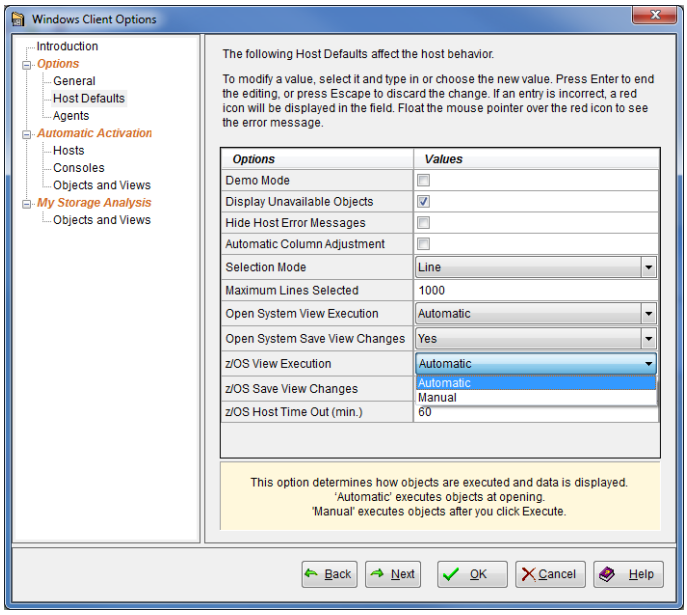
   The Tools menu expands to display available items, as shown in the following sample:



2. Select Options from the Tools menu drop-down list, to open the Windows Client Options wizard.

3. Select the Host Defaults page in the navigation tree in the left-side panel of the Windows Client Options wizard.

4. Select the drop-down arrow in the z/OS View Execution field, to display the options, as shown in the following sample:



5. Select the mode you want the system to use and click OK.

   The Windows Client Options wizard closes. When you select an object in the Object Tree the Windows Client will collect data based on the mode that you have selected.

   Note: The examples in this guide assume that Automatic mode is selected.

Closing the Windows Client

When you close the Windows Client it will log you off from your connected hosts. However, when you are finished working you should disconnect from hosts first then close the Windows Client.

To close the Windows Client

1. Select the host you are connected to in the Host List dialog.

   The selected host is highlighted.

2. Click the disconnect icon ( ) in the Host List dialog.

   The status icon of the selected host will change from connected ( ) to disconnected ( ).

3. Repeat steps 1 and 2 and close all host connections.

   All hosts displayed in the Host List dialog are displayed with the disconnected icon ().

4. Close the Windows Client by clicking the Close icon () in the top right hand corner of the Windows Client.

   The Windows Client is no longer displayed.

Chapter 3: z/OS Host Configuration

This section contains the following topics:

Before You Start

The instructions in this chapter assume that you have performed the first two steps described in the section Install and Configure CA GMI. Do not perform the instructions in this chapter before you have completed those steps.

After you have completed the instructions in this chapter, continue with the fourth step described in the section Install and Configure CA GMI.

Configure CA GMI for CA Disk

The following is an overview of configuring CA GMI for CA Disk.

To configure CA GMI for CA Disk

1. Follow the instructions in the section Identify the CA Disk file data sets or FILES database to CA Vantage GMI (see page 80).

   The CA Disk FILES data sets or FILES database are identified to CA Vantage GMI.

2. Follow the instructions in the section Configure and Activate the CA Disk Auto Restore Manager (ARM) for CA Vantage GMI (see page 82).

   The CA Disk ARM for CA Vantage GMI is activated, configured, and identified to CA Disk.

3. Follow the instructions in the section Configure Extended ARM Support for JES2 (see page 84).

   The extended ARM support for JES2 is active.

4. Follow the instructions in the section Accumulate CA Disk Messages and Populate the Messages Object DMSMSGAC (see page 90).

   The CA Disk messages object DMSMSGAC is available with CA Disk messages.

CA Vantage GMI and CA Disk are configured for users to run CA Vantage GMI.

Identify the CA Disk FILES Data Sets or FILES Databases

To view and analyze all the subfiles of your CA Disk FILES Data Sets or FILES Databases, you must identify them to CA Vantage GMI. If you have converted any of your CA Disk FILES Data Sets to FILES Databases, the name of the FILES Data Set is used to locate the associated FILES Database, that is, you only have to identify FILES Data Set names. The CA Disk system will dynamically determine the conversion status of the FILES Data Set and access the FILES Databases where appropriate. Specify all the names within a <FILELIST> section in the CONFIG member of PARMLIB. If the CONFIG member does not exist in your PARMLIB, simply copy it from the CCTUSAMP library.

To use <FILELIST>

1. Edit PARMLIB member CONFIG, and create a <FILELIST> section at the end.
2. Supply the names of your Files Data Sets.

   If the list is all unconverted FILES Data Sets or if it is all converted FILES Data Sets (FILES Databases), the list is processed in the order specified. If the list contains a mixture of unconverted and converted entries (FILES Data Sets and FILES Databases), the list is split into two internal lists with the FILES Databases being accessed first and the FILES Data Sets being accessed second. The order of each of those internal lists is based on the order of the original list. The list would look something like the following. A maximum of 255 are supported.

   ```
   <FILELIST>
   CA.DISK.FILES1
   CA.DISK.FILES2
   ```

3. Specify sysparm FILELIST (<FILELIST>) to activate the section. Use the Config Client to specify this system parameter, this system parameter can be found in the Config Client directory: Configure GMI Qualified Products, CA Disk, Files data sets, Typical parameters.
4. Set CA Vantage GMI sysparm SUDMS to Y, to activate the CA Disk objects. Use the Config Client to specify this system parameter, this system parameter can be found in the Config Client directory: Configure GMI Qualified Products, CA Disk, Files data sets, Typical parameters.

Alternatively, if you have no more than 15 FILES, you can use system parameters FILES1 to FILES15 to specify their names. But if you have more than 15, you must use the FILELIST option. The order of this list of FILES is handled just like the list created by using FILELIST. Use the Config Client to set the system parameters FILES1 to FILES15, these can be found in the Config Client directory: Configure GMI Qualified Products, CA Disk, Files data sets, Optional Parameters.

Note: For more information about Input Lists, see the chapter “Configuring Multiple Systems” in the *CA Vantage GMI Configuration Guide*, and the section Input List in chapter “Reference Topics” in the *CA Vantage GMI Reference Guide*.

Configure and Activate ARM

CA Disk provides a native Auto Restore function that initiates a started task, DMSAR, each time a data set under its archive control is referenced. The DMSAR task restores the needed data set while the requester (an online user or a batch job) waits. When the restore is complete, the DMSAR task terminates.

The Auto Restore Manager (ARM) enhances this process with two levels of support. Both are optional, but highly recommended.

- Basic ARM

  ARM can start one or more DMSAR servers, optionally dedicating them to either tape or disk restore work, and leave them active, that is, waiting for more work. These features increase auto restore performance.

- Extended ARM Support for JES2

  ARM also provides a JES2 Exit that makes batch processing more efficient when the batch JCL references archived data sets. Instead of letting the job tie up an initiator while the needed data sets are restored one-by-one, the JES2 Exit support holds the job, and routes all the needed restores to ARM at once (where multiple servers restore the data sets more efficiently by grouping the restores so that all data sets on an archive volume are processed together, reducing the number of required tape mounts and the time required). ARM then releases the job when all restores are completed.

Configure the Basic ARM

To configure the Auto Restore Manager (ARM):

1. Use the Config Client to specify the appropriate system parameters.

   The appropriate system parameters for ARM are available in the Config Client directory: Configure GMI Qualified Products, CA Disk, Auto Restore Manager.

2. Activate the Receiver-Dispatcher components.

   Uncomment the following statements in the CONFIG member of your PARMLIB, but do not change their order.

   ```
   *COMP=RCDSP UNCOMMENT IF ARM/ALLOMGR USED (SUARH=Y OR SUPLS=Y)
   *COMP=ARM UNCOMMENT IF ARM IS USED (SUARH=Y)
   ```

   When the above steps are completed, the Receiver-Dispatcher components and ARM will automatically be started when CA Vantage GMI (SAMS) is started on the host.

   Note: If you uncomment the COMP=ARM statement but fail to uncomment the COMP=RCDSP, auto restores will fail because the requests cannot be received, and a soft loop will occur at system shutdown, issuing the following message:

   ```
   VAN0902I Comp=ARM Shutdown in Progress. Waiting for Normal Completion or Forced Termination.
   ```

3. Activate and Manage ARM.

   ARM is automatically started as part of SAMS startup if the two steps above have been completed. If you want to restart SAMS now, use the following commands:

   ```
   F SAMS,STOP (to shut SAMS down)
   S SAMS (to start SAMS up again)
   ```

After ARM is up, perform the following procedures to manage its activity for special needs:

To Suspend or Resume ARM

The SUSPEND command suspends ARM processing of requests for a short period of time and frees the FILES data sets such that CA Disk IXMAINT jobs can perform maintenance. When this is needed, issue the command:

```
F SAMS,ARM,SUSPEND
```

When maintenance is finished, the RESUME command causes CA Vantage GMI to reallocate the FILES and resume processing of queued/pending restore requests. To resume ARM processing, issue:

```
F SAMS,ARM,RESUME
```

To Deactivate or Activate ARM

To deactivate ARM for a short period of time, issue the command:

```
F SAMS,ARM,DRAIN
```

To reactivate it again (after being drained), issue the command:

```
F SAMS,ARM,START
```

To deactivate ARM permanently:

Specify system parameter SUARH (N) and then stop and restart SAMS. That is, issue the commands:

```
F SAMS,STOP (to shut the system down)
S SAMS (to start it up again)
```

4. Identify ARM to CA Disk.

   If ARM is to be used, CA Disk must know this and be able to identify the appropriate system. To inform

   CA Disk that ARM is to be used, do the following:

   a. In the CA Disk PARMLIB, set system parameter SAMSYSNM to the name of the CA Vantage GMI subsystem.

      That is, ensure that the CA Disk system parameter SAMSYSNM has the same value as CA Vantage GMI system parameter SUBSYSN. The CA Vantage GMI default value is (SAMS). Because the name must be four characters long, use quotation marks if the last character is a blank.

   b. To identify the subsystem to the CA Disk catalog management hook, do the following:

      If the CA Disk auto restore hook is already active then issue the commands:

      S DMSAR,DMSAR=REMOVE

      S DMSAR,DMSAR=INSTALL

      If the CA Disk auto restore hook is not already active then issue the command:

      S DMSAR,DMSAR=INSTALL

The basic ARM is activated, configured, and identified to CA Disk.

Configure Extended ARM Support for JES2

If your installation uses JES2 instead of JES3, CA Vantage GMI supplies an exit program for JES2 Exit 6 which makes batch processing more efficient when the batch JCL references archived data sets. Instead of letting the job tie up an initiator while the needed data sets are restored one-by-one, the JES2 Exit 6 support holds the job, and routes all the needed restores to ARM at once. ARM can use multiple servers to restore the data sets, and do so more efficiently by grouping the restores so that all data sets on an archive volume are processed together, reducing the number of required tape mounts and associated wait time. ARM then releases the job when all restores are completed.

The supplied exit program is for JES2 Exit 6, and is implemented as a standard JES2 exit, allowing the scanning of internal text. Before installing the exit, see the IBM manual, System Programming Library: JES2 User Modifications and Macros, to read about JES2 exits and considerations for their use.

To configure the JES2 Exit

1. Determine if you must tailor the supplied exit program KNGED009.

   Normally there is no need to tailor this program.

   However, KNGED009 uses user-field DTEUSER3 in the Converter DTE to store and retain information that is needed between calls to the Exit. If this field is already being used by other installation exits on your system, you must change the source code for KNGED009 to use one of the other user-fields (1-4). Contact your JES2 systems programmer to determine if user-field DTEUSER3 is already in use, and if it is, to select an alternate field to use.

   If an alternate field must be used, do the following:

   Find the source code for programs KNGJX006 and KNGED009 in the CCTUSRC library.

   Modify KNGED009 to use the alternate user-field that was selected.

2. Assemble and link the JES2 Exit6 code.

   KNGJX006 is the small exit module loaded by JES2. KNGJX006 checks to see if CA Vantage GMI is active. If it is, KNGJX006 loads and calls KNGED009. KNGED009 is a larger module that performs the actual work.

   Verify that the SMP/E installation has assembled and linked the two exit programs without errors:

   - KNGJX006 into DSN=sys2.%%SMPPFX%%.CCTULINK
   - KNGED009 into DSN=%%SMPPFX%%.CCTULOAD
   - SMP/E jobs to do the reassemblies and links can be found in members KNGJX006 and KNGED009 in the CCTUSAMP library. You must run these again if you:
     - Tailored the source code
     - Changed the level of JES2 macros
     - Installed a new release of CA Vantage GMI

   If you have system parameter ARACALTR set to (Y), then review the description of this system parameter.

   Note: For a description of this system parameter, see the chapter "System Parameters" in the *CA Vantage GMI SRM Configuration Guide.* In addition, depending on how your security system is configured, modifications to the RACROUTE macro in KNGED009 may be required.

3. Ensure that the CCTULINK library is in your system's linklist (the appropriate LNKLSTxx member in SYS1.PARMLIB). Be sure that the CCTULINK library is APF authorized.

   Note: In prior releases you may have moved KNGJX006 into the JES2 LOADLIB or another linklist data set. If so, it is recommended that you find and delete the old copy. Executing the exit from the CCTULINK linklist library makes future upgrades through SMP/E easy and reliable.

4. Specify the new exit in the JES2 start-up parameters

   The default JES2 start-up parameters are in the data set pointed to by the //HASPPARM DD statement in the JES2 procedure in SYS1.PROCLIB.

   Add the following statements to your system's JES2 start-up parameters:

   ```
   LOADMOD (KNGJX006)
   EXIT006 ROUTINE=(KNGJE006),ENABLE
   ```

   If your installation already has a JES2 Exit6 installed, for example USER06, you can add the CA Vantage GMI Exit6 to the list, as in the following example:

   ```
   LOADMOD(USER06)
   LOADMOD(KNGJX006)
   EXIT006 ROUTINE=(USER06,KNGJE006),ENABLE
   ```

   The CA Vantage GMI JES2 Exit6 should be called last so that it sees changes to the internal text made by prior exits.

5. Activate the new JES2 Exit

   To do this, you must restart the JES2 system. Follow your installation procedures for restarting JES2.

   Observe the following:

   - Whenever you use SMP/E to assemble and link a new version of the exit into the CCTULINK library, it will not be active until you restart JES2.
   - The exit never invokes any restores until CA Vantage GMI is started (with ARM active).

6. Provide filters in PARMLIB member ARJES2XT to improve efficiency.

   The JES2 exit must potentially find all data sets referenced in the JCL, and check the catalog to see which have been archived. You can eliminate some of this checking by specifying filter lists in member ARJES2XT in the CA Vantage GMI PARMLIB. Create ARJES2XT by copying it from the CCTUSAMP library.

   You can reduce the amount of checking in the following ways:

   - You can skip entire jobs based upon pattern job names to include or exclude.
   - You can skip the checking for all data sets in a job step based upon pattern names for the program being executed.
   - You can skip the checking based upon pattern names for the data sets themselves.

In other words, you can customize the ARJES2XT PARMLIB member with include and exclude lists for JOBNAMES, PGMNAMES, and DSNAMES. The exit will check to see if a data set has been archived only if all three filter lists indicate it should be included for checking. That is, an exclude at any level; job, program, or data set name, results in the check being skipped.

Find the JOBNAME PROCESSING LIST, PGMNAME PROCESSING LIST, and DSNAME PROCESSING LIST within PARMLIB member ARJES2XT, and supply appropriate patterns to be included and/or excluded. Each entry can specify an explicit (complete) name or a pattern name. Follow the instructions within the member itself.

For a series of jobs that must run in sequence, it is usually best to ensure that all of the jobs are either included or excluded, but not mixed. If only some of the jobs in the series are included, the order may be affected.

Observe the following:

- PARMLIB member ARJES2XT contains a fourth list too. It contains the names of the pseudo-volumes CA Disk recognizes for archived data sets. Normally you will not need to modify this list. However, if you run CA Disk version 9.0 or higher, but also use DFSMShsm to migrate some data sets, remove MIGRAT from the VOLSER PROCESSING list in this member.
- You can use a member name different from ARJES2XT if you want to. If you do this, you must provide system parameter ARJESMBR(*mbrname*) to identify it to CA Vantage GMI.

7. Activate your new or changed filters in ARJES2XT.

   When changes are necessary, update the member and issue the following operator command:

   ```
   F SAMS,ARM,REFRESH
   ```

8. Jobs, Steps, and Data Sets Automatically Excluded (information only).

   The supplied JES2 EXIT6 code (programs KNGJX006 and KNGED009) automatically excludes certain jobs, job steps, and data sets from auto restore processing within the JES2 Exit. The following are descriptions for the automatic exclusions:

   Automatic Job Exclusions

   The exit does not process a job if:

   - TYPRUN=SCAN is used on the JOB statement
   - TYPRUN=COPY is used on the JOB statement
   - A ddname of ARNOJ2X6 is found within the job JCL

Automatic Job Step Exclusions

The exit does not process a job step if:

- COND=ONLY is used on the EXEC statement. (Such data sets are not needed unless a previous job step abends.)
- IEFBR14 is being executed with the COND keyword

Automatic Data Set Exclusions

The exit does not process a data set on a DD statement if:

- DISP=NEW is specified (Only data sets with dispositions of OLD, SHR, or MOD are processed.)
- DDNAME=, DYNAM, or SYSIN is specified
- DUMMY is the first parameter
- DSN=NULLFILE
- DSN=* (A refer back. The data set name will have been checked already.)
- VOL=SER is specified (Uncataloged data sets are not checked.)
- DISP=(,CATLG) or (,PASS) was specified in a previous DD statement. (The data set was cataloged or passed from a prior job step DD statement.)

Note: A data set referenced on a VOL=REF=*dsname* or DCB=*dsname* is not excluded from processing. These could reference archived data sets, so the catalog must be searched to determine whether they need to be restored.

Automatic Exclusions Due to Errors

The exit does not process any data set that is:

- Referenced by JCL in which converter errors that fail the job (JCTCNVRC) have been detected.
- Referenced by JCL in which other severe errors have already been detected by this JES2 exit.
- Referenced by JCL before any restart step specified by the job statement.

9. Test the JES2 exit.

   To test the installation of the CA Vantage GMI JES2 Exit, start CA Vantage GMI, and then submit a job that refers to an archived data set. Make sure that the job name, program name, and data set name are not excluded by the processing list.

   The following should take place:

   - The job is placed in hold status.
   - Either an existing DMSAR receives the restore request, or, if the maximum number of tasks is not already running, a new DMSAR is started.
   - After the data set has been restored, the job is released by CA Vantage GMI.

The extended ARM support for JES2 is active.

To Disable or Enable the JES2 Exit6 Interface

If the JES2 Exit is implemented, circumstances later can occur where you need to disable or enable the JES2 Exit.

You can disable the JES2 Exit6 processing in the following ways:

- Disable the exit within JES2 itself

  ```
  $T EXIT6,DISABLE
  ```

- Nullify (no-op) its processing

  Rename PARMLIB member ARJES2XT and restart CA Vantage GMI.

  If this member with your exclusion filters is not found, all processing within the exit is bypassed. (System parameter ARJESMBR provides the name of the member with your filters. It defaults to member ARJES2XT. If you use a different member, simply rename it, or change sysparm ARJESMBR to specify a non-existing member.)

To enable the exit again, reverse the process you used above:

- Enable the exit within JES2 itself

  ```
  $T EXIT6,ENABLE
  ```

- Activate exit processing

  Rename the member back to ARJES2XT and restart CA Vantage GMI.

  When the member is found, all processing within the exit will start.

Accumulate CA Disk Messages and Populate the Messages Object DMSMSGAC

CA Disk and CA Vantage GMI provide the ability to route CA Disk messages to CA Vantage GMI where they can be accumulated within a single object (DMSMSGAC) for viewing and analysis. Making use of this feature eliminates the need to search the output from all the CA Disk batch jobs, looking for important messages that may require follow-up work. Accumulating the messages in one CA Vantage GMI object makes them very easy to inspect.

The following provides an overview of how this feature works:

- CA Disk provides an exit point (SYSOUTEX) for its sysout records.
- CA Vantage GMI provides program VANSDM00 that can be activated for the CA Disk sysout exit. VANSDM00 sends all CA Disk sysout lines (CMDPRINT, MSGPRINT, SYSPRINT, headers, footers, and diagnostic information) to CA Vantage GMI.
- CA Vantage GMI provides usermod SAMUM06 to activate VANSDM00 as the CA Disk sysout exit.

  If a CA Disk sysout exit is already in use, and is to remain active in addition to VANSDM00, CA Vantage GMI provides:

  - Program VANSDMFE to serve as a front-end to both exit programs.
  - Usermod SAMUM07 to activate VANSDMFE as the CA Disk sysout exit.
- When activated, CA Disk messages are routed to the CA Vantage GMI subsystem.
- CA Vantage GMI filters the incoming messages as specified in PARMLIB(DMSTRIGS). You customize this member to include only the messages you want to accumulate.
- CA Vantage GMI script DMSMSGAC accumulates the filtered messages within object DMSMSGAC.
- You request object DMSMSGAC anytime you wish to inspect the accumulated messages from your various CA Disk batch jobs.

To accumulate messages from CA Disk

1. Copy script DMSMSGAC from the CA Vantage GMI CCTUSAMP library to the active script library as identified by system parameter AUTOSCR.

   If the script library does not exist yet, use job J02AUTO in the CCTUSAMP library to allocate it.

2. Create PARMLIB(DMSTRIGS) by copying it from the CA Vantage GMI CCTUSAMP library.

3. Update PARMLIB(DMSTRIGS) with filter statements to select appropriate CA Disk messages to accumulate.

   Records beginning with an asterisk are comments; all other records are triggers. The first 72 bytes of each filter record are tested against the first 72 bytes of the CA Disk message. The filter record triggers if every non-blank byte of the filter text matches the corresponding byte of the CA Disk message. Thus, a filter record of all blanks triggers the routing of every CA Disk message to CA Vantage GMI.

   The member copied from the CA Vantage GMI CCTUSAMP library does not have any early filters. It does contain a blank line which means that all CA Disk messages will be routed to CA Vantage GMI for analysis, even though only some may be processed.

   The following record triggers all CA Disk 2805 messages, which appears in column 10, if they also contain the text 'dummy' in columns 20-24.

```
1.......10.......20.....................................
         2805      DUMMY
```

4. Ensure exit program VANSDM00 is in your CA Vantage GMI CCTULINK library, and that the library is in your link-list. This allows CA Disk to find and execute the exit program.

5. If you are not already using a CA Disk sysout exit, you can activate VANSDM00 as the exit. To do this, run usermod SAMUM06 as found in member VANSDM00 in the CCTUSAMP library.

   If you are already using a CA Disk sysout exit that must also remain active, do the following:

   a. Customize the VANSDMFE source program (in the CCTUSRC library) as needed.

   b. Assemble and link-edit VANSDMFE into the CA Vantage GMI CCTULINK library. Note that the link-edit step must resolve the call to VANSDM00 and any other programs you call.

   c. Run usermod SAMUM07 as found in member VANSDMFU in the CCTUSAMP library, to activate VANSDMFE as the CA Disk sysout exit.

6. Use the Config Client to set sysparm AUTDMS (Y).

7. Activate the feature by doing one of the following:

   - Stopping and restarting CA Vantage GMI
   - Issuing the following commands:

```
F SAMS,REFRESH,VKGPARMS
F SAMS,ACT,DMSTRIGS
F SAMS,AUTO,START=DMSMSG
```

8. Whenever you make changes to DMSTRIGS and CA Vantage GMI is running, remember to refresh the active filters with the following command:
   ```
   F SAMS,REFRESH,DMSTRIGS
   ```

Note: For more information about the CA Disk SYSOUTEX sysout exit, see the chapter "User Exits" in the *CA Disk System Guide*.

Chapter 4: Using CA Disk Objects

This section contains the following topics:

Using the Windows Client to Access CA Disk Objects

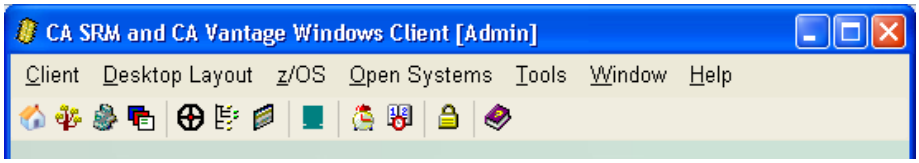
All CA Disk objects are included in the CA Disk folder of the Object Tree. This folder is a sub folder found under Backup and Archive Management.

Note: Before you begin, ensure that the z/OS host that you want to connect to is up-and-running. For procedures on defining a z/OS Host, see the chapter "Setting Up CAGMI."

To access CA Disk objects

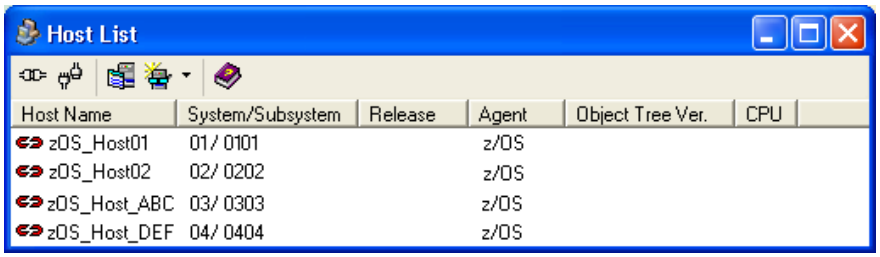
1. Click Start, Programs, CA, CA Storage Resource Manager, and select Windows Client.

   The Windows Client appears. The following is a sample of the Windows Client main window Menu Bar and Toolbar:



2. Click the Host List icon ( ) in the Windows Client main windows Toolbar.

   The Host List dialog opens. The following is a sample of the Host List dialog:



3. Select the z/OS host that you want to connect to and click the Connect icon .

   If your user ID and password were provided in the Host Definition dialog for the selected host, the Windows Client attempts to connect to the host. If the connection is successful then the connection status icon changes from the Not Connected icon to the Connected icon and you can skip to Step 4.

   If your user ID and password were not provided in the Host Definition dialog for the selected host, then the Host Login dialog appears and you must proceed to Step 4.

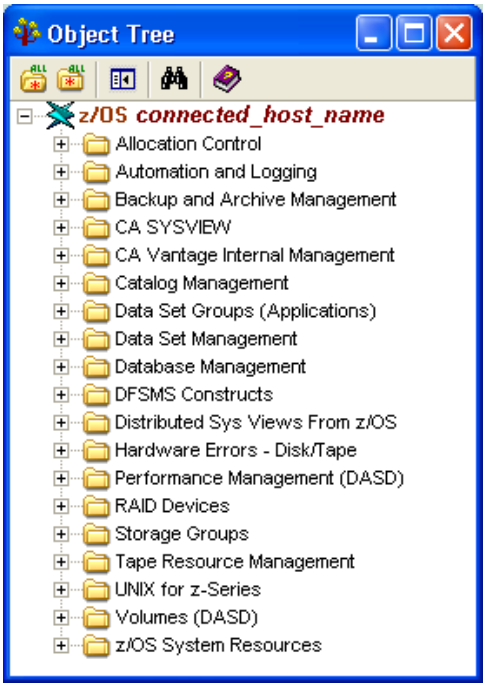
4. Enter a valid user ID and password in the Host Login dialog, and click OK.

   The Host Login dialog disappears.

   The Windows Client will attempt to connect and log on to the z/OS host. If the connection is successful then the connection status icon in the Host List dialog changes from the Not Connected icon to the Connected icon . CAGMI will collect information from the z/OS host that you have chosen to connect to.

5. Click the Object Tree icon ( ) in the Windows Client main windows Toolbar.

   The Object Tree dialog appears. The following is a sample of an Object Tree:

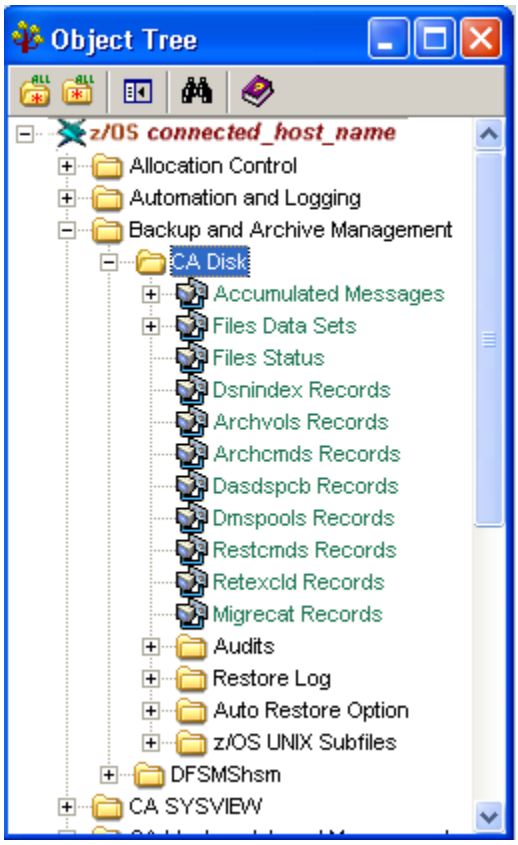


6. Click the plus sign next to the Backup and Archive Management folder.

   The Backup and Archive Management folder is expanded and displays the subfolders.

7. Click the plus sign next to CA Disk.

   The CA Disk folder is expanded and displays the objects in the Object Tree, as shown in the following sample:



Using Objects for Analyzing CA Disk Activity

The following sections explain how to use CA Disk objects to analyze your CA Disk information. The following CA Disk GMI objects are available in the Object Tree to CA Disk GMI customers:

Accumulated Messages

Displays all or selected CA Disk messages.

Files Data Sets

Displays a high-level overview of the space utilization within each FILES DS or FILES DB.

Files Status

Displays the details of space utilization within the subfiles of each FILES DS or FILES DB.

Dsnindex Records

Displays the details of all of the data sets that have been either archived or backed up using CA Disk.

Archvols Records

Displays the details of all of the archive and backup volumes that are under the control of CA Disk.

Archcmds Records

Displays the request queue to back up or archive data sets at a later time.

Dasdspcb Records

Displays a list of accumulated DASD space billing records for each data set.

Dmspools Records

Displays a list of all tape volumes that are defined to various tape pools.

Restcmds Records

Displays the request queue to restore data sets.

Retexcld Records

Displays a list of restored data sets and their grace periods.

Migrecat Records

Displays a list of sequential data sets that are moved and recataloged as stacked files on tape.

Accumulated Messages

Displays all or selected CA Disk messages. Monitoring the CA Disk messages in CA Vantage GMI eliminates the need to search through batch output for important messages. The standard Windows Client features for objects gives you the possibility, for example, to filter and sort these messages in one place which allows you to focus on success and error messages created for the CA Disk batch jobs. You also have the possibility to log these messages using the CA Vantage GMI logging feature, which you can use to review historical messages and manage trends.

Note: To populate the CA Disk Accumulated Messages (DMSMSGAC) object, see the instructions in the section Accumulate CA Disk Messages and Populate the Messages Object DMSMSGAC (see page 90).

Working with the Accumulated Messages Object

By monitoring the messages in CA Vantage GMI, you can route all or selected CA Disk messages to CA Vantage GMI where they can be accumulated for easy viewing.

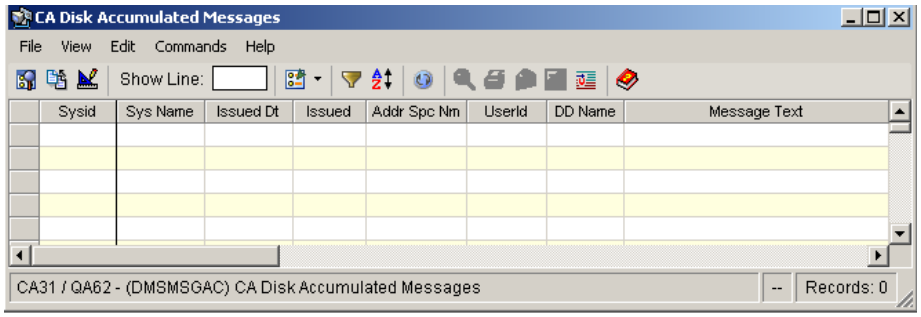
To display Accumulated Messages

1. Open the Object Tree so it is showing the CA Disk objects as described in the section Using the Windows Client to Access the CA Disk Objects (see page 93).

   CA Disk objects are displayed in the Object Tree.

2. Click the Accumulated Messages object in the Object Tree.

   The table view of the Accumulated Messages object appears, as shown in the following sample:



Note: Click the Help About Object tool bar icon ( ), to display a description of the field values displayed in the columns in the Accumulated Messages object.

Files Data Sets

Provides a high-level overview of the space utilization within each File. For Files Data Sets that have been converted to CA Datacom/DB databases, the overview describes the space utilization within the data and index data sets that contain the FILES data. Both FILES Data Sets and CA Datacom/DB databases are formatted with records of a physical blocksize. You can easily see how many of these blocks have been used, and how many blocks are still free.

Working with the Files Data Sets Object

The Files Data Sets Object helps you to monitor the space utilization within each file.

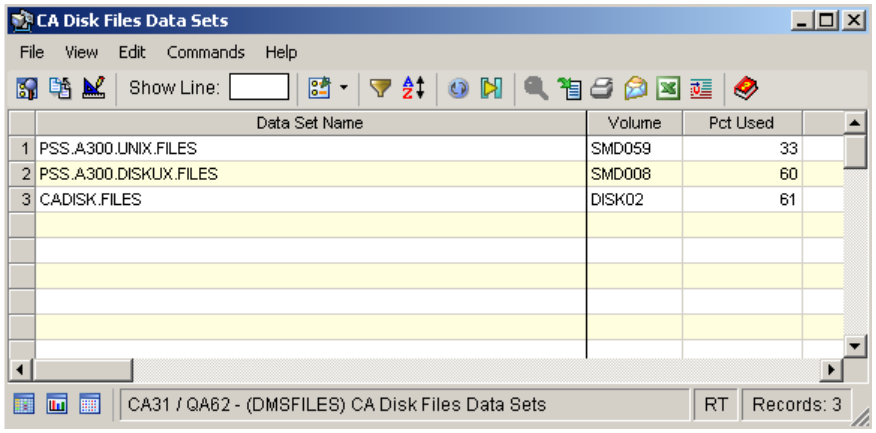
To display FILES Data Sets

1. Open the Object Tree so it is showing the CA Disk objects as described in the section Using the Windows Client to Access the CA Disk Objects (see page 93).

   CA Disk objects are displayed in the Object Tree.

2. Click the Files Data Sets object in the Object Tree.

   The table view of the Files Data Sets appears, as shown in the following sample:



Note: Click the Help About Object tool bar icon ( ), to display a description of the field values displayed in the columns in the Files Data Sets object.

Files Status

Provides the details about space utilization within the subfiles of each FILES data set.

Working with the Files Status Object

The Files Status object helps you to view and analyze how much of the capacity of each subfile has been used.

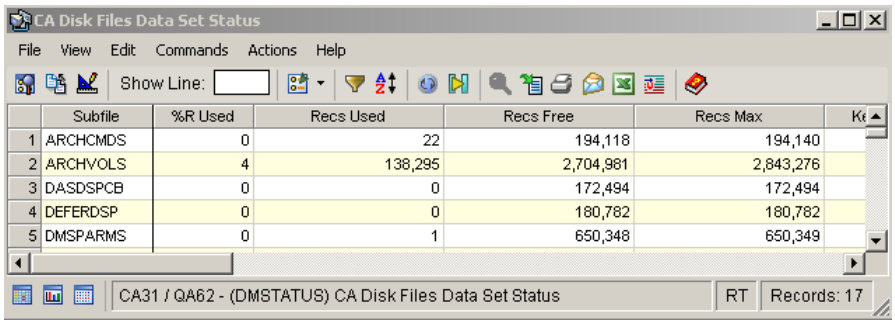
To display Files Status object

1. Open the Object Tree so it is showing the CA Disk objects as described in the section Using the Windows Client to Access the CA Disk Objects (see page 93).

   CA Disk objects are displayed in the Object Tree.

2. Click the Files Status object in the Object Tree.

   The table view of the Files Status object appears, as shown in the following sample:



Note: Click the Help About Object tool bar icon ( ), to display a description of the field values displayed in the columns in the Files Status object.

Dsnindex Records

Displays the details about all of the data sets that have been either archived or backed up using CA Disk.

Working with Dsnindex Records Object

The Dsnindex Records object helps you identify the archive or backup volumes on which the data sets reside, and other attributes of the data sets.

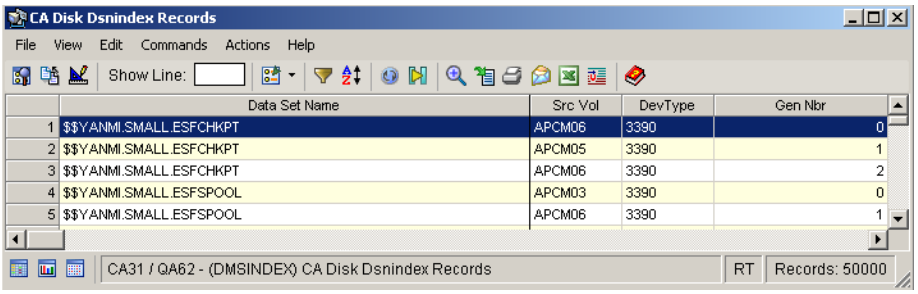
To display Dsnindex Records Object

1. Open the Object Tree so it is showing the CA Disk objects as described in the section Using the Windows Client to Access the CA Disk Objects (see page 93).

   CA Disk objects are displayed in the Object Tree.

2. Click the Dsnindex Records object in the Object Tree.

   The table view of the Dsnindex Records object appears, as shown in the following sample:



Note: Click the Help About Object tool bar icon ( ), to display a description of the field values displayed in the columns in the Dsnindex Records object.

Archvols Records

Contains information about all of the of archive and backup volumes under the control of CA Disk. The entries may represent physical tapes and cartridges, but may also be keys to logical archive volumes that reside on disk.

Working with Archvols Records Object

The Archvols Records object helps you identify the archive or backup volumes on which the data sets reside, and other attributes of the data sets.

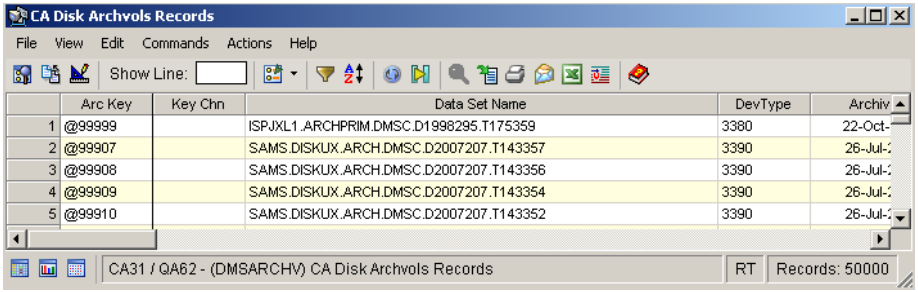
To display Archvols Records Object

1. Open the Object Tree so it is showing the CA Disk objects as described in the section Using the Windows Client to Access the CA Disk Objects (see page 93).

   CA Disk objects are displayed in the Object Tree.

2. Click the Archvols Records object in the Object Tree.

   The table view of the Archvols Records object appears, as shown in the following sample:



Note: Click the Help About Object tool bar icon ( ), to display a description of the field values displayed in the columns in the Archvols Records object.

Archcmds Records

Displays the request queue to back up or archive data sets at a later time.

Working with Archcmds Records Object

The Archcmds Records object contains ad-hoc requests to backup or archive data sets at a later time, that is, it is a request queue that can be processed later by CA Disk. This object displays those requests.

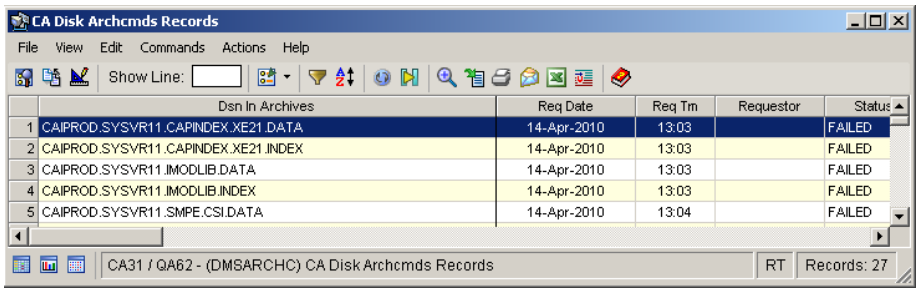
To display Archcmds Records Object

1. Open the Object Tree so it is showing the CA Disk objects as described in the section Using the Windows Client to Access the CA Disk Objects (see page 93).

   CA Disk objects are displayed in the Object Tree.

2. Click the Archcmds Records object in the Object Tree.

   The table view of the Archcmds Records object appears, as shown in the following sample:



Note: Click the Help About Object tool bar icon ( ), to display a description of the field values displayed in the columns in the Archcmds Records object.

Dasdspcb Records

Contains a list of accumulated DASD space billing records for each data set.

Working with Dasdspcb Records Object

The Dasdspcb Records object helps you to view the accumulated DASD space billing records for each data set.

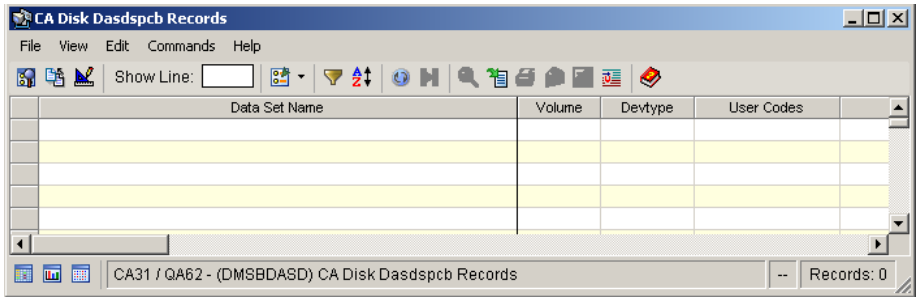
To display Dasdspcb Records

1. Open the Object Tree so it is showing the CA Disk objects as described in the section Using the Windows Client to Access the CA Disk Objects (see page 93).

   CA Disk objects are displayed in the Object Tree.

2. Click the Dasdspcb Records object in the Object Tree.

   The table view of the Dasdspcb Records object appears, as shown in the following sample:



Note: Click the Help About Object tool bar icon ( ), to display a description of the field values displayed in the columns in the Dasdspcb Records object.

Dmspools Records

Contains a list of all tape volumes defined to various tape pools. Each volume is marked as being either an available scratch tape or an in-use tape.

Working with Dmspools Records Object

The Dmspools Records object helps you to view all tape volumes defined to various tape pools.

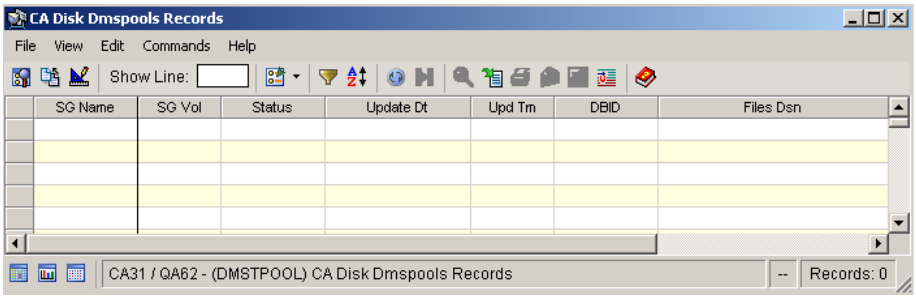
To display Dmspools Records

1. Open the Object Tree so it is showing the CA Disk objects as described in the section Using the Windows Client to Access the CA Disk Objects (see page 93).

   CA Disk objects are displayed in the Object Tree.

2. Click the Dmspools Records object in the Object Tree.

   The table view of the Dmspools Records object appears, as shown in the following sample:



Note: Click the Help About Object tool bar icon ( ), to display a description of the field values displayed in the columns in the Dmspools Records object.

Restcmds Records

Contains requests for restoring data sets, that is, it is a queue of *restore commands*. CA Disk updates the status of the requests whenever the queue is processed.

Working with Restcmds Records Object

The Restcmds Records object helps you to view all the requests for restoring data sets and delete selected deferred restore requests.

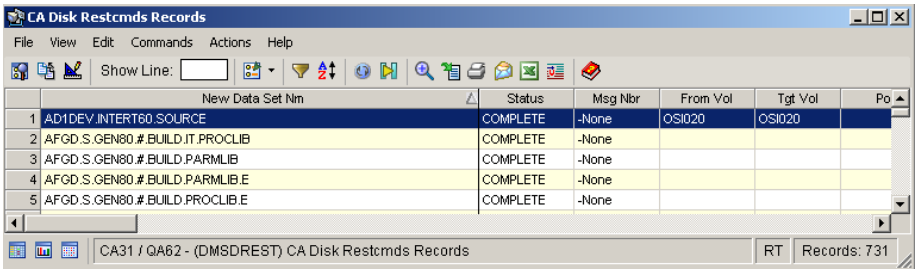
To display Restcmds Records

1. Open the Object Tree so it is showing the CA Disk objects as described in the section Using the Windows Client to Access the CA Disk Objects (see page 93).

   CA Disk objects are displayed in the Object Tree.

2. Click the Restcmds Records object in the Object Tree.

   The table view of the Restcmds Records object appears, as shown in the following sample:



Note: Click the Help About Object tool bar icon ( ), to display a description of the field values displayed in the columns in the Restcmds Records object.

Retexcld Records

Contains a list of restored data sets and their grace periods, that is, the length of time they are exempt from being re-archived.

Working with Retexcld Records Object

The Retexcld Records object displays a list of restored data sets and their grace periods.

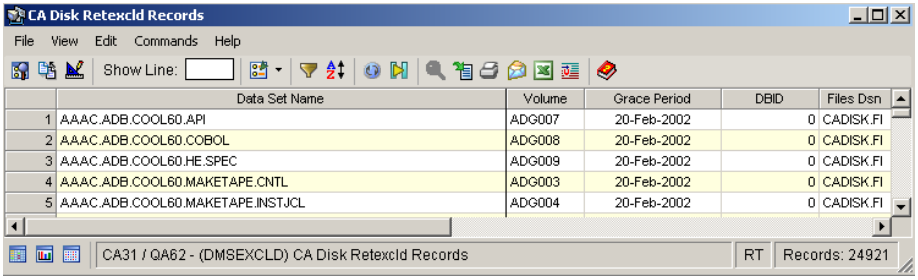
To display Retexcld Records

1. Open the Object Tree so it is showing the CA Disk objects as described in the section Using the Windows Client to Access the CA Disk Objects (see page 93).

   CA Disk objects are displayed in the Object Tree.

2. Click the Retexcld Records object in the Object Tree.

   The table view of the Retexcld Records object appears, as shown in the following sample:



Note: Click the Help About Object tool bar icon ( ), to display a description of the field values displayed in the columns in the Retexcld Records object.

Migrecat Records

Contains a list of sequential data sets moved and recataloged as stacked files on tape. Entries are placed in this subfile when a duplicate tape (for backup) is also created during the process.

Working with Migrecat Records Object

The MIGRECAT subfile can be used to recatalog the data sets from the primary tape to the backup tape if it becomes necessary to do so.

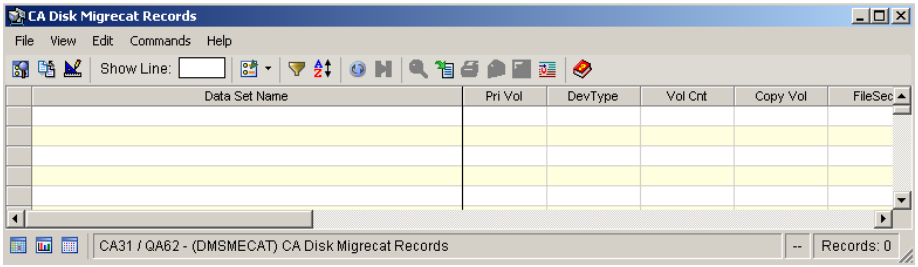
To display Migrecat Records

1. Open the Object Tree so it is showing the CA Disk objects as described in the section Using the Windows Client to Access the CA Disk Objects (see page 93).

   CA Disk objects are displayed in the Object Tree.

2. Click the Migrecat Records object in the Object Tree.

   The table view of the Migrecat Records object appears, as shown in the following sample:



Note: Click the Help About Object tool bar icon (), to display a description of the field values displayed in the columns in the Migrecat Records object.