B For your end users: Running and saving searches on the Web

This section describes how to save and run searches on the web.

The following topics are provided:

Types of searches

The following types of searches are available on the Web:

- **Saved searches**—Searches that you can create and save for a form.
- **Recent searches**—Searches that you have executed recently.
- **Defined searches**—Searches defined by your administrator.

Running searches

You can save searches in a browser and run them at any time by selecting Searches from a toolbar menu in a form. You can also make recent searches and defined searches available in a browser. You can load each type of search criteria into a form, and update the search criteria before you execute a search. You can run all searches across multiple sessions.

The Searches button opens a menu for you to save and open searches.

Figure B-1: Searches button in toolbar

You can run a search using any combination of the following methods:

- **Finding a request by example**—The easiest way to specify search criteria is to fill in fields and select choices and option buttons to match the requests that you want to find. You can specify values for more than one field. The more fields that you fill in, the more specific your search becomes. The system searches for requests that meet all the criteria and displays them in the Results pane. For more information, see "Finding a request by example" on page 139.

- **Advanced search bar**—You can use the advanced search bar to define a more complex set of search criteria. For example, you can search for all requests with two different values in the same field. You can use the search bar together with fields in a form to specify search criteria.

  The advanced search bar appears at the bottom of the browser window when you click the Advanced Search button on the toolbar. For more information, see "Using the advanced search bar" on page 142.

- **Parameters**—Enter a parameter enclosed in dollar signs ($) in the field. For example, so that you can specify the submitter each time that you run the saved report, enter the prompt text `$Enter User Name$` instead of a specific name in the Submitter field.

  When you click Search, you are prompted to enter a sample value for this parameter.

  A parameterized search works best when it is saved. Saving the search enables you to enter different values each time a search is performed.

▶ **To run a search**

1 Open a form in Search mode.

2 Enter the search criteria in the form fields, in the advanced search bar, or a combination of both.

3 Click Search.

Finding a request by example

Finding a request by example enables you to enter information directly into the form to use as a search.

1 In Search mode, open the form for which you want to find requests.

2 In the appropriate fields, specify the search criteria that the requests must match.

   You cannot specify search criteria for attachment fields.

   You can enter values for more than one field, creating a logical `AND` for the search criteria. The more fields that you fill in, the more specific your search becomes.

3 Click Search.

   You can modify the requests, or you can run a report. For more information, see Appendix C, "For your end users: Creating reports in a browser."

Search styles in character fields

Each character field on a form is assigned a specific search style that determines how it finds matching requests. Your administrator will set these for you. Three search styles are available:

- **Equal**—Searches for exactly what you entered in the field. For example, if you enter `Bob Smith` in the Created By field, you find all requests created by Bob Smith, but none created by Bob Smithe.

- **Leading**—Searches for the entered sequence of characters only at the beginning of the field, ignoring any subsequent characters. The search will return every request with this field that contains the first characters exactly as you entered plus any following characters.

For example, if you enter `Bob` in the Created By field, you find all requests created by Bob Smith, as well as those created by Bob Smithe and Bobby Jones. You will not find any created by Jill Bobbington. (The characters `Bob` in the name Jill Bobbington are not *leading* characters.)

■ **Anywhere**—Searches for the entered sequence of characters anywhere in the field.

For example, if you enter `Bob` in the Created By field, you find all requests created by Bob Smith, as well as those created by Bob Smithe, Bobby Jones, and Jill Bobbington.

Equal and Leading searches are faster than Anywhere searches because Anywhere searches compare each character in the field while Equal and Leading searches do not.

Overriding the predefined search style

To override the default search style for a character field, enter exactly what you are searching for in the field, and include a relational operator or wildcard character.

For example, you can use an equal sign (=) to search for an exact match even if the field has a search style of Anywhere. Thus, if you enter `=Bob Jones` in the Created By field of a form, the search will find all the requests created by Bob Jones. The search will not find requests created by Bob Joneson.

You can also use the advanced search bar to override a field's search style. For example, to override the Created By field in the previous example with a Leading search, you would specify the following criteria in the advanced search bar:

```
'Created By' LIKE "Bob Jones%"
```

Using relational operators in a search

Relational operators are useful in nontext fields (such as date and time fields) when you want to search for a value within a numerical range.

You can use the following relational operators as leading characters in fields in a form and in the advanced search bar.

Table B-1: Relational operators

Operator	Action
<	Matches contents that are less than the value.
>	Matches contents that are greater than the value.
<=	Matches contents that are less than or equal to the value.
>=	Matches contents that are greater than or equal to the value.
=	Matches contents that are exactly equal to the value.
!=	Matches contents that are not equal to the value.

For example, to search for all requests created after a certain date, use the greater than (>) relational operator and specify a date and time format. For example, `>` "`July 5, 2008`" in the Create Date field finds all requests created after July 5, 2008. (Leaving out the time defaults the search criteria to 0:00:00, the start of the day.)

Using wildcard symbols in a search

When you specify search criteria to find requests, you can use the following wildcard symbols anywhere in a form to indicate one or more characters.

___NOTE___

Square brackets and the symbols associated with them do not work with Oracle® or Informix databases.

Table B-2: Wildcard symbols for searches

Wildcard	Function
% (Percent)	Matches any string of 0 or more characters. For example: `J%son` matches Jackson, Johnson, Jason, and Json.
_ (Underscore)	Matches any single character. For example: `B_b` matches Bab, Bob, and Bub.
- (Hyphen)	Indicates a range. Always use within square brackets ([ ]).
[ ] (Square brackets)	Matches any single character within a specified range or set. For example, `[a-f]` matches the range of characters a through f, and `[abcf]` matches the set of characters a, b, c, or f.
[^] (Square brackets with caret)	Matches any single character not within a specified range or set. For example, `[^a-f]` matches all characters except the range a through f, and `[^abcf]` matches all characters except a, b, c, or f.

Use the percent symbol (%) to include leading or trailing characters in your search. For example, to find all requests submitted by Jill Bobbington, Bobby Fenton, and Bob Comptonson with an Anywhere search, enter `Bob%ton` in the Submitter field. The search returns all requests for which the Submitter field contains the strings "Bob" and "ton" in that order with any number of characters leading, trailing, and in between.

When used in a form, the percent sign (%), underscore (_), and open bracket ([) symbols always function as wildcard symbols except as follows, where they function as explicit characters:

■ When you specify a relational operator (for example, > or =).

■ When the field's default search style is Equal and you do not use a leading or trailing percent sign (%).

— NOTE —

You can override a field's search style by using a leading percent sign. For example, if the field's search style is Equal and you enter `%Rob` into the Submitter field, your search finds Robert Smith and Jim Robertson (not only equal matches to %Rob). However, if you use a leading percent sign, you lose any faster search times that would result from using the Equal or Leading search styles. See "Search styles in character fields" on page 139.

Using wildcard symbols as explicit characters in a form

To search for the actual characters that serve as wildcard symbols, you must force the system to interpret these wildcard characters as explicit characters. For example, you might need to search for all instances of the percent sign instead of using the percent sign as a wildcard symbol.

To search for the percent sign (%), underscore (_), or open bracket ([) as an explicit character, enclose the character in square brackets. For example, if you enter the percent sign in square brackets ([%]), the system searches for instances of the percent sign instead of using it as a wildcard character.

The close bracket (]) functions as a wildcard only when it is accompanied by an open bracket ([). The hyphen (-) functions as a wildcard character only when preceded by an open bracket ([) or an open bracket with a caret ([^).

Using the advanced search bar

You can use the advanced search bar to define a more complex set of criteria than you can specify by using only fields in a form. For example, you can search for all requests with two different values in the same field. Thus, you could search for all requests that have a status of Fixed or Closed.

To show or hide the advanced search bar, click the Advanced Search button in a search window. When visible, it appears at the bottom of the browser window.

When you specify search criteria in the advanced search bar, you can use the same operators as in the form, and several more. See "Using relational operators in the advanced search bar" on page 147.

For more information, see "Examples of advanced search bar statements" on page 150.

— NOTE —

If you enter search criteria in the advanced search bar and then hide the advanced search bar, the criteria is still used to find matching requests. If you have entered criteria in the advanced search bar and then decide not to use it, you must clear the advanced search bar before you hide it.

▶ **To build an advanced search**

1 Click the Advanced Search button in a search window.

2 Define a search statement in the Advanced Search bar.

If you use relational operators, observe the appropriate operator precedence. (See "Using relational operators in a search" on page 140.)

3 Click Search.

Advanced search bar conventions

The easiest way to build your search in the advanced search bar is to select the fields, status history fields, keywords, values, currency codes, currency field subvalues, and selection field values directly from the Fields menu to the right of the bar. When you choose items directly from this menu, the correct syntax is automatically entered.

You can also type the information directly into the advanced search bar. If you choose this option, observe the conventions listed in the following sections.

Fields

Enclose field labels in single quotation marks. For example:

`'Short Description'`

If a field name contains a single quotation mark (such as an apostrophe), add another single quotation mark next to it. For example, if the field is named Submitter's Phone Number, enter it as `'Submitter''s Phone Number'`.

To search on a field that does not have a label, see your administrator for the field ID. Use this ID instead of the name enclosed in single quotation marks.

— *NOTE* —————————————————————————

Instead of entering the field label and the quotation marks into the advanced search bar, click the field's label in the form, or select the field from the Field List dialog box. The field name is automatically added, with the correct syntax, to the search statement.

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Status history fields

Status history fields must have *all* of the following information enclosed within single quotation marks:

■ The name or ID of the status history field followed by a period.

■ The name or index of the status value that you want to match followed by a period.

■ The keyword `USER` (for the user who changed the request to that status) or `TIME` (for the time last changed to that status).

The following example uses names:

`'Status History.Fixed.TIME' < "07/01/08"`

Currency fields

For currency fields, you must enclose *one* of the following items in single quotation marks:

■ The name or ID of the currency field. For example:

```
'Currency Field' = $NULL$
```

■ The name of the currency field, followed by a period, followed by a specific portion of the currency field's value, such as the date or a functional currency value. For example:

```
'Currency Field.VALUE' < 5000
```

Keywords

You can use keywords anywhere that you can enter character values.

You can use the $NULL$ keyword to search for requests that have *no* value in a field. For example, to search for requests that have not been assigned (requests with no value in the Assigned to field), enter 'Assigned to' = $NULL$.

The most commonly used keywords are: $DATE$, $NULL$, $TIME$, $TIMESTAMP$, $USER$, and $WEEKDAY$.

--- *NOTE* ---

Keywords are case-sensitive. Use only UPPERCASE, as shown in the following table.

Table B-3: Keywords (Sheet 1 of 3)

Keyword	Substituted value
$APPLICATION$	The application name if the application is running; $NULL$ when no application is running.
$BROWSER$	The browser (Internet Explorer or Netscape) being used in the current session. If the browser is anything other than Internet Explorer or Netscape, Netscape is returned. For BMC Remedy User, an empty string ("") is returned.
$CLIENT-TYPE$	The client type of the API program. AR System administrators use this keyword.
$CURRENTWINID$	The window ID that uniquely identifies the current window in the client environment. AR System administrators use this keyword.
$DATABASE$	The name of the database on which the current form's data is stored.
$DATE$	In a character field, the current date is displayed. In a date/time field, the time defaults to midnight (00:00:00).
$DEFAULT$	The default value for the associated field (used only when assigning a value to a field).
$ERRNO	When an error is encountered, the number of the error that just occurred.

Table B-3: Keywords (Sheet 2 of 3)

Keyword	Substituted value
$ERRMSG$	The message for the error that just occurred.
$ERRAPPENDMSG$	The appended message, if any, for the error that just occurred.
$EVENTSRCWINID$	The window ID that uniquely identifies the event source window in the client environment. AR System administrators use this keyword.
$EVENTDATA$	The value that identifies the data of the event. AR System administrators use this keyword.
$EVENTTYPE$	The value that identifies the type of the event. AR System administrators use this keyword.
$FIELDHELP$	The field help text for the currently selected field.
$FIELDID$	The ID of the field that is currently selected. If the field is not selected, it returns NULL.
$FIELDLABEL$	The label of the field that is currently selected, If the field is not selected, it returns NULL.
$FIELDNAME$	The name of the field that is currently selected. If the field is not selected, it returns NULL.
$GROUPIDS$	The group IDs of which the current user is a member. If there are no groups, the keyword returns a value of NULL.
$GROUPS$	The groups to which the current user belongs.
$GUIDE$	The guide name if the guide is running; NULL if the guide is not running.
$GUIDETEXT$	Help text that provides instructions when a guide is running.
$HARDWARE$	The hardware platform on which the current process is running.
$HOMEURL$	The URL of the current page. This option is only valid on web pages. If it is used in BMC Remedy User, it will return a NULL value. AR System administrators use this keyword.
$INBULKTRANSACTION$	Indicates whether you are in a bulk transaction. This keyword is not supported and is reserved for future use.
$LASTCOUNT$	The number of matches found in the most recent search.
$LASTID$	The ID of the last successfully created request.
$LASTOPENEDWINID$	The Send Event keyword that resolves to the ID of the window that was last opened. AR System administrators use this keyword.
$LOCALE$	The language and country code for the specified locale, in the format *language_COUNTRYCODE*, for example, en_US.
$NULL$	A null value.

Table B-3: Keywords (Sheet 3 of 3)

Keyword	Substituted value
$OPERATION$	The current mode or operation being performed. One of the following values is returned: ■ CREATE—For a Create request operation. ■ DELETE—For a Delete operation. ■ DIALOG—When a form is opened as a dialog box. ■ GET—For a Get Entry operation. ■ MERGE—For a Merge operation. ■ QUERY—For a database search. ■ SET—For a Modify operation. ■ SET ALL—For a Modify All operation.
OS	The operating system under which the current process is running.
$ROLES$	For a deployable application, returns the list of roles that map to groups to which the current user belongs.
$ROWCHANGED$	Evaluates whether a row in a table field has changed in a table loop guide. ■ 0 = Not changed ■ 1 = Changed
$ROWSELECTED$	Evaluates whether a row in a table field is selected in a table loop guide. ■ 0 = Not selected. ■ 1 = Highlighted as the secondary selection. ■ 2 = Highlighted as the primary selection.
$SCHEMA$	The form on which you are currently operating.
$SCHEMA-ALIAS$	The singular alias used for a form.
$SERVER$	The AR System server on which the current form is defined.
$SERVERTIMESTAMP$	The current date, time, or both on the AR System server. The keyword is used with the following fields: ■ Date/Time ■ Time ■ Date
$TCPPORT$	The TCP/IP port of the local AR System server. AR System administrators use this keyword.
$TIME$	In a character field, the current time is displayed. In a date/time field, the date defaults to the current date.
$TIMESTAMP$	The current date/time stamp.
$USER$	The name of the user who is currently logged in.
$VERSION$	The version of BMC Remedy User. If the version includes a patch, it is also included.
VUI	The name of the view of the current active window.
$VUI-TYPE$	The views platform (such as Web or Windows).
$WEEKDAY$	The current day of the week.

Values

Enclose nonnumeric values (including time, selection, and currency values) in double quotation marks (for example, "07/01/08" for July 1, 2008).

Selection field values

Selection field values can be specified as text values in quotation marks or numeric values or indexes *not* in quotation marks. For example, if you have a Status field with the option buttons labeled Open, Fixed, and Verified, you can enter either "Open" or 0 to specify the value of Open, because Open is the first selection value in the selection field.

Currency field values

For currency fields, use the Currency Codes submenu to choose an available currency code. When you choose a currency code, the double quotation marks are automatically entered (such as "USD"). Add the currency value within the double quotation marks (for example, "100 USD").

If you do not specify a currency code, the primary allowable currency type is assumed.

Using relational operators in the advanced search bar

Relational operators are useful especially in nontext fields (such as date and time fields) when you want to search for a value within a numerical range.

You can use the following relational operators *only* in the advanced search bar. You cannot use them in a form. See Using relational operators in a search.

Table B-4: Operators (Sheet 1 of 3)

Operator	Action
( )	Use parentheses to control the order in which the expression is carried out. Operations found within parentheses are executed together as a unit.
	For example, in the operation 'Gross Income' ñ ('Unemployment Insurance' + 'Pension Plan Contributions' + 'Income Tax'), the items within the parentheses are added before they are subtracted from Gross Income.
AND &&	Logical AND of the result of two conditions. The result is true only if both conditions are true. For example, 'Status'="New" AND 'Assigned to'="Andy" finds all new requests assigned to Andy.
	You can use two ampersands (&&) instead of the word AND.
OR ||	Logical OR of the result of two conditions. The result is true if either condition is true. For example, 'Status'="New" OR 'Assigned to'="Andy" finds all new requests (regardless of who they are assigned to) and all requests assigned to Andy (no matter what their status).
	You can use two vertical lines (||) instead of the word OR.

Table B-4: Operators (Sheet 2 of 3)

Operator	Action
NOT !	Negates the condition that follows. If the condition is false, the result is true. For example, NOT 'Status'="New" finds all requests that are not new. You can use an exclamation point (!) instead of the word NOT.
LIKE	Performs a pattern search. For example, 'Submitter' LIKE "Bob%ton" finds all requests with a submitter name that begins with the letters Bob and ends with the letters ton—such as Bob Compton and Bobby Fenton. The LIKE operator is useful only with character and diary fields. Use square brackets and the LIKE operator for Sybase databases. Square brackets and the LIKE operator do not work with Oracle or Informix databases. See the *Database Reference*, "Using relational databases with AR System," page 13, and the *Workflow Objects Guide*, "Operators," page 216.
+	■ Adds two numerical values (integer, real values, or decimal). ■ Adds an integer interval to a date/time value. ■ Adds two character strings. For example, 'Create date' > $DATE$ + (8*60*60) finds all requests that were created after 8:00 a.m. today. (8*60*60 is the number of seconds in 8 hours.)
-	■ Subtracts two numerical values (integer, real values, or decimal). ■ Subtracts two date/time values (resulting in an integer). Subtracts an integer interval from a date/time value. For example, 'Create date' > $TIMESTAMP$ - (7*24*60*60) finds all requests that were created within the past week. (7*24*60*60 is the number of seconds in one week.) This is useful to include in a custom report of all requests created in that week.
*	Multiplies two numeric values. For example, 'Quantity' * 'Price' > 50 finds all requests where the contents of the Quantity field multiplied by the contents of the Price field is over 50.
/	Divides two numeric values. For example, 'Total Expenses' / 'Total Income' = 2 finds all requests where the total amount spent for expenses is twice the total amount of income.
%	Modulo of two integer values (the remainder of a division of the values). Because a percent sign is also a valid wildcard symbol, the context determines how it is interpreted. When used as part of a search statement, it is interpreted as a wildcard symbol; when used in the expression where an operator is expected, it is interpreted as modulo. **Note:** Use the modulo *operator* only with fields whose data type is integer. If you use this operator with fields that have other data types, such as Date/Time, an error occurs.
<	Matches contents that are less than the value. For example, 'Create date' < ($TIMESTAMP$ - 24*60*60) finds all requests created more than 24 hours ago. ([24*60*60] or 86400, is the number of seconds in 24 hours.)

Table B-4: Operators (Sheet 3 of 3)

Operator	Action
>	Matches contents that are greater than the value. For example, `'Create date' > "09/24/07 00:00:00"` finds all requests with Create dates that are newer than midnight September 24, 2007.
!=	Matches contents that are not equal to the value. For example, `'Status' != "Closed"` finds all requests that are not closed.
<=	Matches contents that are less than or equal to the value. For example, `'Salary' <= 30000` finds all requests where the contents of the Salary field are less than or equal to 30000.
>=	Matches contents that are greater than or equal to the value. For example, `'Create date' >= "09/30/07"` finds all requests with Create dates equal to or more recent than September 30, 2007.
=	Matches contents that are exactly equal to the value. For example, `'Status' = 0` finds all requests with a status value equal to the first selection value.

When you use multiple operators to construct qualification criteria, they are executed in the following order of precedence:

1 `( )`

2 `NOT (!) - (unary minus)`

3 `* / %`

4 `+ -`

5 `< <= > >= = != LIKE`

6 `AND (&&)`

7 `OR (||)`

If the qualification contains multiple operators of the same precedence value, they are executed in the order that they occur (from left to right). For example, in the expression `A + (B*C)`, the multiplication takes first precedence because it occurs within parentheses, which are of a higher precedence than addition.

Using wildcard symbols in the advanced search bar

When you specify search criteria to find requests, you can use wildcard symbols as shown in the following table to indicate one or more characters:

Table B-5: Wildcards (Sheet 1 of 2)

Use this wildcard:	To match these characters:
% (Percent)	Matches any string of 0 or more characters.
	For example: `J%son` matches Jackson, Johnson, Jason, and Json.
_ (Underscore)	Matches any single character.
	For example: `B_b` matches Bab, Bob, and Bub.
- (Hyphen)	Indicates a range. Always use within square brackets ([]).

Table B-5: Wildcards (Sheet 2 of 2)

Use this wildcard:	To match these characters:
[ ] (Square brackets)	Matches any single character within a specified range or set.
	For example, `[a-f]` matches the range of characters a through f, and `[abcf]` matches the set of characters a, b, c, or f.
[^] (Square brackets with caret)	Matches any single character not within a specified range or set.
	For example, `[^a-f]` matches all characters except the range a through f, and `[^abcf]` matches all characters except a, b, c, or f.

In the advanced search bar, wildcard symbols are interpreted as wildcards only when used with the `LIKE` operator; otherwise, they are interpreted as explicit characters. You must use the percent symbol (%) when you want to include leading or trailing characters in your search. For example, if you want to find all requests submitted by Jill Bobbington, Bobby Fenton, and Bob Comptonson, enter the following text in the advanced search bar:

```
'Submitter' LIKE "%Bob%ton%"
```

> — **NOTE** —
> Square brackets and the symbols associated with them do not work with Oracle or Informix databases.

Examples of advanced search bar statements

The following statements illustrate ways you can use the advanced search bar to build complex searches.

▶ **To find all requests that were created by someone other than the current user**

Enter

```
'Submitter' != $USER$
```

This example uses the *not equal to* operator (`!=`) to find instances where the value in the Submitter field is *not equal to* the user who is currently logged in. Notice the use of the `$USER$` keyword.

▶ **To find all requests that were created after 10:00 a.m. on the current day**

Enter

```
'Create date' > "10:00:00"
```

The example uses the *greater than* operator (`>`) to find requests where the value of the Create date field is greater than the current day at 10:00 a.m.

▶ To find all requests that have been created for any problem that involves printing

Enter

```
'Submitted Problem Type' LIKE "%print%"
```

The example uses the `LIKE` operator to perform a pattern search that finds requests with the word *print* anywhere in the Submitted Problem Type field.

▶ To find all requests with a status of released

Enter

```
'Status ' = "Released"
```

Notice the spaces after the word *Status* in the field specification. The spaces exist in the field label on the form being used. If you use the Field List dialog box by selecting the Fields button on the advanced search bar, the spaces (and single quotation marks) are added automatically.

___ *NOTE* _____

A search statement that includes a *not equal to* operator (`!=`) might return unexpected results because the advanced search bar complies with ANSI SQL standards. One of these standards distinguishes between fields that contain data and fields that have never contained data.

_____

For example, the following statement does not return requests where `CharacterField` is empty:

```
'CharacterField' != "one"
```

To include requests where `CharacterField` is empty, enter the search statement like this:

```
'CharacterField' != "one" OR 'CharacterField' = $NULL$
```

Saving searches

The following procedures detail how to save and run searches from a form viewed in a browser.

___ *NOTE* _____

You must execute a search before you can save it.

_____

▶ To save a search that you have created

1 Run a search. (See "Running searches" on page 138.)

2 From the toolbar, choose Searches > Save Search.

The Save or Redefine Search dialog box appears.

3 In the Search Name field, enter a name for the search, or select one from the list of existing saved searches.

This is the name that will appear in the saved search list. If the name you enter already exists, the search criteria under the existing name will be overwritten.
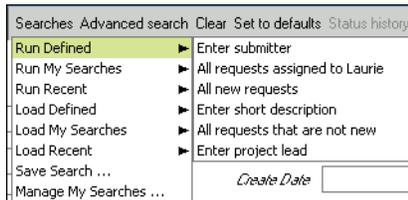
4 Click OK.

The new and refined search will now be available in the list of saved searches.

Running a saved, recent, or defined search

▶ **To run a saved, recent, or defined search**

1 From the toolbar, choose Searches > Run My Searches, Run Recent, or Run Defined.

Figure B-2: Searches menu

2 From the list of searches, choose a search to run.

The system executes the search and displays a results list.

Figure B-3: Search results
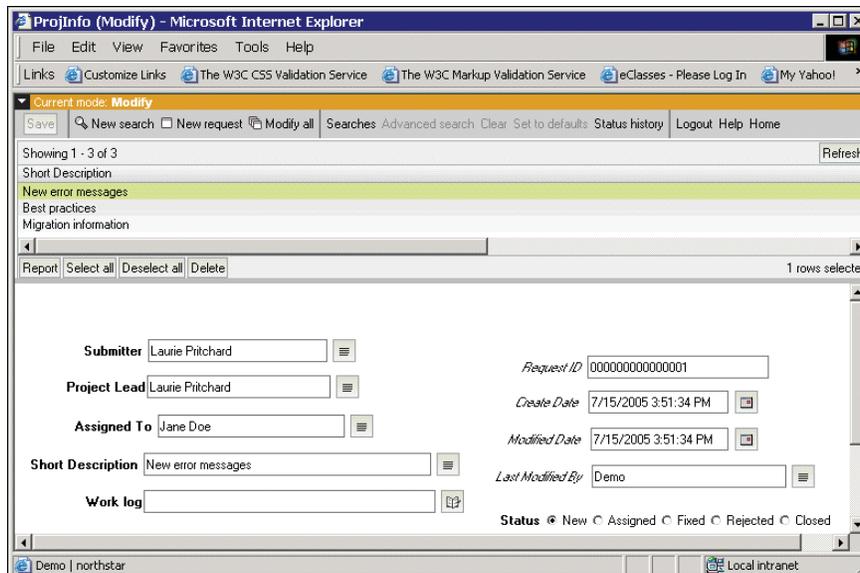
Loading search criteria without execution

You can load search criteria from saved, recent, or defined searches into a form without executing the search. You can then modify the search criteria, or execute the search as it is.

▶ **To load search criteria into a form**

1 Open a form in Search mode.

2 From the toolbar, choose Searches > Load My Searches, Load Recent, or Load Defined.

3 From the list of searches, choose the search you want to load into the form.

The search criteria is loaded into the form. You can execute the search by choosing Search from the toolbar, or you can modify the search criteria.

Managing saved searches

You can enable, disable, or delete existing saved searches. Disabling a search removes it from the list of searches, but keeps the search data.

▶ **To enable or disable a search**

1 From the toolbar, choose Searches > Manage My Searches.

Figure B-4: Manage Search dialog box

The label for this button changes depending on the currently selected search.

Click Delete to delete a search.
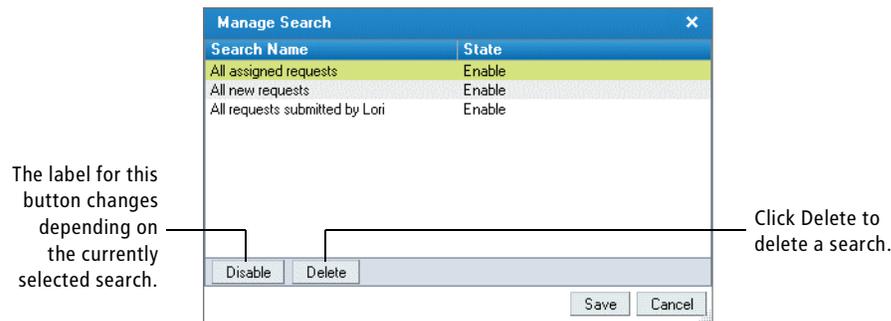
2 In the Manage Search dialog box, select the search you want to enable or disable, and click the Enable/Disable button.

If a search is not yet selected in the Manage Search dialog box, the default button label of Disable is displayed.

The state of the search changes to either Enabled or Disabled, depending on your action. If the search is disabled, it no longer appears in the search menu on the toolbar, but the search data is still stored in the AR System Searches Preference form.

3 Click Save to save your changes.

▶ **To delete a search**

1 Select the search you want to delete.

2 Click Delete.

3 Click Save.

The search is deleted from the list in the Manage Searches dialog box, from the search menu, and from the AR System Searches Preference form. To restore a deleted search, you must recreate and save it.

C For your end users: Creating reports in a browser

This chapter describes how AR System users create and run reports in a browser.

The following topics are provided:

- Reporting on AR System data (page 156)
- Running reports (page 159)
- Creating reports (page 167)
- Export file formats for AR System reports (page 183)

Reporting on AR System data

The AR System Report Console provides a single interface for all Web-based reporting functions. You can create and run ad hoc reports based on user-specified criteria, and can also run existing reports that are defined by others or installed with BMC applications.

To open the Report Console, click the AR System Report Console link in the Quick Links area of the home page, or click the Report button after running a form search in a browser. You can also open the Report Console by entering the correct URL to the AR System Report Console form. BMC Remedy applications provide additional links that open the Report Console.

About the AR System Report Console

The Report Console includes the report list, where you can select and run reports, and the report designer screen, where you can create and modify reports.

Figure C-1: The Report Console with the report list
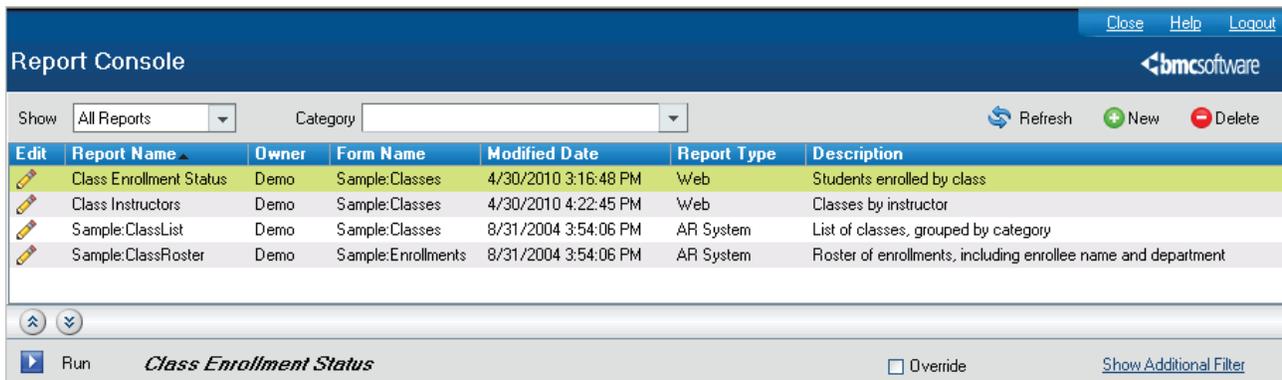
The links in the upper right part of the report list screen have the following functions:

Link name	Description
Close	Close the Report Console and return to the previous browser window.
Help	Open the Report Console help.
Logout	Log out of AR System.
Refresh	Refresh the list of reports.
New	Create a new report. See "Creating reports" on page 167.
Delete	Delete the selected report.

For information about using the remaining options in the report list screen to work with reports, see

■ "Finding reports" on page 159

■ "Running reports and saving the output" on page 159

- "Adding to or overriding a report query at runtime" on page 163
- "Reporting based on a search" on page 165

The report designer screen allows you use to create and edit Web reports. It displays the name of the current report in the upper left and indicates whether it is new or being edited.

The report designer screen includes the Report Definition area, where you define the report content, and the Filter By area, where you define an optional search query to select the records to be included in the report.

Figure C-2: The report designer screen of the Report Console

The buttons in the upper right of the report designer screen have the following functions:

Button name	Description
Preview	Preview the report
Save	Save the report
Save As	Save the report with a different name (make a copy)
Back	Return to the report list screen of the Report Console

For information about using the options in the report designer screen, see

- "Defining a Web list report" on page 168
- "Defining a Web chart report" on page 170
- "Using a query in a Web report" on page 173
- "Editing and deleting reports" on page 176

Report types

The options available for creating, running, and saving reports vary based on the report type. AR System includes these report types:

- **Web reports**—The Web report type provides browser users the ability to create nicely formatted reports. Results can be returned in the form of a list, many styles of charts, or a list and chart together. Web reports can contain links that allow you to drill down from the report to open AR System records and view the data upon which the report is based. Web reports can be saved in several standard formats, including Adobe PDF and Postscript, and Microsoft Word, Excel, and PowerPoint formats.

    Web reports are suitable to use in presentations, documents, email, and printing, and can transfer data directly to spreadsheet format. Also, because each row in the report output contains a link to the underlying data in the form, you can use Web reports to work interactively with AR System data.

    Web reports are not available in BMC Remedy User.

- **AR System reports**—You can use AR System reports to generate output in several standard formats, including XML, `.arx`, and comma-separated value (`.csv`). AR System reports are typically used to export data in the specified format for use in another application, for importing data into another AR System server, and to generate statistics based on the report data.

    For information about creating and running reports in BMC Remedy User, see the BMC Remedy User help. To locate existing reports in BMC Remedy User, use the ReportSelection form rather than the Report Console.

- **Crystal reports**—Some installations of AR System are integrated with the SAP BusinessObjects or Crystal Reports reporting tools. If your administrator has installed one of these products and has designed Crystal reports for use with AR System, you can run Crystal reports from the Report Console.

Running reports

This section describes how to use the Report Console to run existing reports. For information about creating reports, see "Creating reports" on page 167.

Finding reports

When you open the Report Console from the home page, all reports to which you have permission appear in the list. You can narrow the list to show only those reports you have created, or only reports belonging to a certain category, such as Incident Management.

When you click the Report button after running a search, the Report Console lists only those reports that are based on the form you searched. In this case, when you run the report, only the data you selected from the search results is included, and you cannot add to or override the report query.

Use any of the following methods to locate reports in the Report Console list:

- In the Show field, select Created by Me to list only reports you have created.

- If report categories are defined, select a category from the Category field menu to see only the reports assigned to that category.

- Sort the list by clicking any of the column headings. For example, click the Form Name column heading to sort the list by the associated forms.

- Use the expand and collapse buttons located below the list to see a longer or shorter view of the list, or to hide the list.

Running reports and saving the output

You can run AR System, Web, and Crystal reports from the Report Console. The available output formats and how you select them vary by the report type. (The type of report is listed in the Report Type column.)

In some cases, you can add an additional qualification to the report query at runtime, or override the built-in query with a new qualification.

— NOTE —

In order to run a report, you must have permissions to the form and to the fields included in the report. If you do not have permission to the form, the report does not appear in the list of available reports. If you have permission to the form but do not have permission to a field included in the report, that column is blank when you run the report.

Running a report

This section describes how to run reports of all types. You can run the report as is, or if the report definition allows, you can change the report results by adding to or overriding the built-in query.

▶ To run a report

1 Locate the report you want to run in the Report Console list.

2 (Optional) To narrow the report results by adding a query, click Show Additional Filter, and then follow the steps described in "To add a qualification at runtime" on page 163.

> ─ *WARNING* ──────────────────────
> If the report includes a primary and secondary form, the filter shows only fields that are included in the primary form.

3 (Optional) To override a built-in report query, click Override. See "Adding to or overriding a report query at runtime" on page 163.

4 For AR System reports only, select the output format before running the report. See "Exporting AR System reports" on page 163.

   Web reports run in HTML and you select the output format after running the report. See "Exporting and printing Web reports" on page 160.

5 Use one of these methods to run the report:

   ■ Select the report and click Run ▶ . In this case, the report appears in a viewing area below the list of reports.

   ■ Double-click the report entry in the list. In this case, the report appears in a separate window. This can be helpful if you need to compare two or more reports at a time.

6 If the Parameter dialog appears, enter the requested information to narrow the report results, and then click OK.

Working with report results

This section describes how to export or print the results of Web reports and AR System reports, and how to drill down from a Web report to open the underlying records.

Exporting and printing Web reports

You can export Web reports to Microsoft Excel, Microsoft Word, Microsoft PowerPoint, Adobe PDF, and Adobe PostScript formats. You can either save the result to a file in the selected format, or open the report in the selected application to work with the report data.

Although you cannot save a Web report directly to .csv format, you can still use this format to transfer the data from a Web report to another application. To do so, export the Web report to Microsoft Excel, and then use Excel functions to save the data in .csv format.

▶ To export a Web report

1 Run the report as described in "To run a report" on page 160.

2 In the report viewer, click Export Report .

3 In the Export Report dialog box, select the format for the exported report.

4 (Optional) Select which pages of the report to export. By default, all pages are selected.

5 (Optional) For PDF, PostScript, and PowerPoint formats, select Auto, Actual Size, or Fit to Page.

   These options help control how large reports are paginated in the selected output file type.

6 Click OK.

7 In the File Download dialog box, select whether you want to open or save the file.

   ■ Open—The report opens in the selected application, such as Excel. (You must have the application installed to use this option.)

   ■ Save—The Save As dialog box appears. Navigate to the appropriate location, enter a file name, and then click Save.

   If you select Open, you can then use menu options in the associated application to print, email, and search the report results.

   The links to the underlying records in a list report remain active when you export the report. This means that other users with access to the AR System server where the report was run can use the links in the report to drill down to the underlying records. However, if a user without access to the AR System server clicks on the link in the exported report, the user will see a browser "page not found" error.

— NOTE —
Chart drill-down is deactivated in an exported report. Only list report links remain active.

▶ To print a Web report

1 Run the report as described in "To run a report" on page 160.

2 In the report viewer, click Print Report .

3 In the Print Report dialog box, indicate which pages you want to print.

4 Click OK.

— TIP —

You can also export the report as described in "To export a Web report", and then print the report from the selected application.

Opening the records in the report

Web reports can contain links to the underlying data. This allows you to "drill down" by clicking the links to open the underlying records and work interactively with the data in the report.

In a list report, each row represents a single request and contains a link to that request. The link appears in the Request ID column if it is included in the report. If the Request ID field is not included, the link is created on the Short Description field, if included, or on the first field in the report (the left-most column). When you click the link, the request underlying that row of the list opens.

In a chart report, elements of the chart reflect a group of one or more underlying records. For example, the bars in a bar chart might represent the number of students enrolled in each class in the Sample applications. Clicking on a bar in the chart opens the form, and the records summarized in that bar of the chart are listed in the results list.

There are some restrictions on using the drill-down feature of Web reports. These include:

- The form must allow drilling down from a report. If the administrator has turned off the "Allow Drill Down from Web Report" form property, reports on that form do not allow you to drill down to the underlying requests.

- If the form is a vendor form, the associated plug-in must include the fields used in the report query. If not, AR System error `3355, "Illegal field encountered in the qualifier,"` appears.

- In a chart report, you cannot drill down in the following situations:

  - The report was run from a search results list or table field by selecting records and then clicking Report. In this case, the chart drill-down links are not available, because the records represented in the chart are already available in the search results.

  - The selected field is a field type that contains group IDs, including the Group List field on the User form, the Assignee Group field, or a dynamic field (field ID in the range 60000 - 69999). In this case, AR System reports "`No matching requests (or no permission to requests) for qualification criteria. (`ARWARN 9296`)."`

  - The field used for the Category axis contains records with a null value. In this case, AR System reports "`No matching requests (or no permission to requests) for qualification criteria. (`ARWARN 9296`)."`

  - The Category axis is based on a group field. This includes the Group List field in the User form (field 104), the Assignee Group field in any form (field 112), or any dynamic group field (field ID in range 60000 – 69999).

  - The chart is in an exported report.

Exporting AR System reports

You can export the results of an AR System report to the following file formats:

- AR System export (file extension `.arx`)
- AR System XML (file extension `.xml`)
- Comma-Separated Value (file extension `.csv`)

All of these formats can be used to import data to an AR System form with BMC Remedy Data Import. CSV files can also be imported to other applications, such as Microsoft Excel.

For more information about the AR System report file types, see "Export file formats for AR System reports" on page 183.

▶ **To export an AR System report**

1 Select the report from the list.

2 In the Destination field, select whether to send the report to the screen, to a file, or to a printer.

3 In the Format field, select the output format for the report.

4 Run the report as described in "To run a report" on page 160.

Adding to or overriding a report query at runtime

When you open the Report Console to run a report, AR System uses the report's built-in query to select the records included in the report. Two additional options allow you to add a qualification to narrow the report results (Show Additional Filter) or override the built-in query to widen or change the report results (Override).
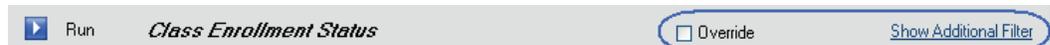
If the "edit" icon ✎ appears next to a report entry in the Report Console, you can open the report definition to examine the built-in query.

This section briefly explains how to use these two options, describes example situations to illustrate their use, and explains why they are sometimes unavailable or might produce unexpected search results.

Adding a qualification at runtime

A "qualification" is any query statement, such as "Number enrolled is greater than 0". When you enter an additional qualification using Show Additional Filter, and do not select Override, your qualification is added to the report's built-in query (using the AND operator). If you add a qualification and select Override, then your qualification replaces the report's built-in query. If you select Override but do not add a qualification, then the report's built-in query is ignored.

▶ **To add a qualification at runtime**

1 Open the Report Console and select the report to run from the list of reports.

2 Click Show Additional Filter.

> *— WARNING —*
>
> If the report includes a primary and secondary form, the filter shows only fields that are included in the primary form.

3 Build the additional qualification, using either the Simple Query Builder or the Advanced Query Builder, as described in "Using a query in a Web report" on page 173.

4 (Optional) Select Override to replace the report's built-in query with the added qualification.

If the Override check box is not available, overrides are disabled for this report. In that case you can only add your qualification to the report and cannot override the built-in query.

5 Click Run to run the report with the added qualification.

Example of adding a qualification to narrow a report

An example report named Class Registration, based on the Sample:Classes form, has a built-in query stating "Number enrolled is greater than 0". The report normally includes all classes for which at least one student is enrolled. An instructor, Peter Thomas, needs to see this list, but only for the courses he teaches.

Peter could use the Class Registration report and add a qualification before running the report, such as "Instructor is equal to Peter Thomas" or "Instructor is myself". His additional qualification is added to the built-in query, and the resulting report shows only those courses for which he is the instructor and at least one student is enrolled. In other words, he narrows the report results from all classes with enrolled students to only those he teaches that have enrolled students.

Examples of overriding a report query

A manager for the training program, on the other hand, needs to see a list of all classes, including those where the enrollment is zero. Instead of writing a new report, she could use the Class Registration report, but override the built-in query. By overriding the built-in query and adding no additional conditions, she eliminates the built-in query. Thus she widens the report results to include those classes that have no enrollees.

You can also use the Override and Show Additional Filter options together to replace any built-in query in the report. For example, to see a list of all classes in Madrid with or without students enrolled, the training program manager could use the Class Registration report, add the query "Location is LIKE Madrid%", and click Override. The additional query narrows the report to include only classes in Madrid, and the override causes the report to include classes with no enrollees as well as those with students enrolled.

Restrictions on modifying queries at runtime

Some reports do not allow modification at runtime. These options are unavailable in the following cases:

■ If you search a form and then use the Report button in the search results list to create a report, the records that you selected in the search results are passed to the Report Console as a predefined query. In this case, the Show Additional Filter and Override options are not available.

■ The administrator can configure a report to disallow overrides, additional qualifications, or both. In case, either or both options are unavailable.

Override does not override the "base qualification" used in AR System reports. A base qualification is defined by the administrator and is outside of the report definition. If the report contains a base qualification, your qualification is added to the base qualification. Base qualifications are not visible in the report designer screen.

Reporting based on a search

When you run a search on an AR System form or view a table in a browser, the Report button appears below the search results or in the table (assuming the form or table field is not configured to prevent this). The Report button allows you to generate a report based on the search results or table field contents.

Figure C-3: Search results with Report button

When you click Report, the following actions occur:

■ The Report Console opens, listing only those reports that are associated with the form you searched.

You can also create a new report definition based on this search. In this case the report is automatically associated with the current form. If you select the "Add default fields and sort order" option, the results list fields are automatically included in the report.

■ The records that are selected in the search results at the time you click Report, along with the sort order, are passed to the Report Console as a predefined query.

When you search a form, the first record in the search results is automatically selected. If you click Report without changing this selection, only the first record is included in the report. Use any of the following methods to select the records you want to include in the report:

- Select All—Selects all entries in the table.

- SHIFT-click—To select a range of entries, click an entry and hold down the SHIFT key. Click another entry above or below the original selection, and then release the SHIFT key.

- CTRL-click—To report on multiple entries, click an entry and then hold down the CTRL key. Continue to click the entries you want to include in the report while holding down the CTRL key. When you have finished selecting table entries, release the CTRL key.

- Deselect All—Clears all selections in the table.

If no entries in the table are selected when you click Report, the report includes all the entries in the search results.

Using the My Reports toolbar button

With the My Reports toolbar button, you can save the sequence that generates a report based on a search. Each named report in the My Reports list is unique per server, per form, and per user. The My Reports feature is helpful if you frequently generate reports based on the same search, but don't want to create a report definition.

▶ **To save a report to the My Reports toolbar menu**

1 Run a search on a form.

   See Appendix B, "For your end users: Running and saving searches on the Web."

2 Run a report based on the search results. See "Reporting based on a search" on page 165.

3 Close the report.

4 In the browser window containing the search results, choose My Reports > Save.

5 Enter a name for the report, and click OK.

▶ **To run a saved report from the My Reports toolbar menu**

1 Open the form associated with the report that you saved.

2 Choose My Reports > Run > reportName.

▶ **To manage reports from the My Reports toolbar menu**

1 Open the form associated with the report that you saved.

2 Choose My Reports > Manage.

   Saved reports appear in a dialog box.

3 Delete, disable, or enable reports as needed.

4 Click Save.

Creating reports

This section describes how to define a new Web or AR System report. (Crystal reports are pre-designed and must be installed by the administrator.)

Web reports are suitable for preparing formatted list reports, which are presented in a table, and chart reports, which allow you to select from various types of charts to illustrate the data. By using the preview feature, you can use Web reports to work interactively with the data in the form.

AR System reports are often used to export data in XML, `.arx`, or `.csv` format for use in another application or on another AR System server. In addition, you can use AR System reports generate statistical values based on the data. AR System reports are can be run on the Web and in BMC Remedy User.

Setting up a new report

When you click New to create a report, you must first define the type of report, its associated form, and the report name in the New Report screen.

Depending on the type of report you are creating, AR System then opens either the report design screen of the Report Console (for Web reports) or the ReportCreator form (for AR System reports).

▶ **To start a new report**

1 In a browser, click the AR System Report Console link on the home page to open the Report Console.

2 Click New ⊕.

3 In the Type field of the New Report window, select the Web or AR System report type. This field is required.

4 In the Form field, enter the name of the form to use for the report. This field is required.

- (Optional) To limit the list of forms to those that are already used in other reports, select Forms Used in Existing Reports. This can speed up retrieval of the list of forms, but any form that is not already used in some report does appear on the list.

- To find the form quickly, type the first few letters of the form name into the field. For example, type "Sample" to select from the list of forms related to the Sample application.

5 Select or deselect the "Add default fields and sort order" check box:

- Selected—Fields that appear in the form's results list after a search are automatically added to the report definition, along with the default sort order. You can remove or change these fields and sort order later if necessary.

- Not selected—No fields are added to the report definition automatically.

6 In the Name field, type a name for the report. This field is required.

The report name must be unique. The maximum length is 128 characters. Also, you cannot change the name of the report after you exit this screen, so use care in assigning a report name.

— NOTE —

Each report must have a unique Name/Locale combination. For example, two reports can both be name "Monday", if the locale for each report is different.

7 Click OK.

If you selected the Web report type, the Report Console report designer screen appears. Build the Web report definition using the following procedures:

- "Defining a Web list report" on page 168

- "Defining a Web chart report" on page 170

- "Using a query in a Web report" on page 173

If you selected the AR System report type, the ReportCreator form opens instead. See "Defining AR System reports" on page 177.

Defining a Web list report

List reports are presented in the form of a table, with one column for each field that you add to the report. One column of the report includes a link to the record in the underlying form (assuming the form properties allow this), so you can open the record and view the data underlying the report.

For example, a partial report based on the Sample:Classes form might list all class records in the form, showing the class title, location, instructor and number enrolled.

Figure C-4: Example list report based on the Sample:Classes form

A link to the underlying data appears in the report results, assuming the form properties allow this. The link is created on the Request ID if it is included in the report. If the Request ID field is not included, the link is created on the Short Description field, if included, or on the first field in the report (the left-most column).

▶ To define a list report

1 Follow the steps described in "To start a new report" on page 167.

2 (Optional) In the Report Definition area, add a brief description of the report in the Description field.

   This description appears in the list of reports in the Report Console. If you do not enter a description, it is identified as a "Web Report."

3 In the Content field, select List or Chart + List.

   ■ List—The report is presented as a table.

   ■ Chart + List—The report is presented as a chart, followed by a table. Use this procedure to define the list section of the report. To define the chart, see "Defining a Web chart report" on page 170.

4 (Optional) To share this report with other users who share at least one permission group in common with you, clear the Private check box.

   Other users must have also permission to the form in order to run the report, and they must have permission to the fields included in the report in order to see the data in the report.

5 In the Columns tab, select fields from the Available Fields list to include in the report, and then click Add, double-click, or drag them to the Column list.

   ■ You must add at least one field to the Column list to be able to save the report.

   ■ If you selected "Add default fields and sort order" when creating the report, the defined results list fields for the form are already in the Column list.

   ■ You can select multiple fields at a time from the Available Fields list. To add all fields to the report, click Add All.

   ■ You can include any field type except Diary fields in the report.

■ To remove a field from the report, select it in the Column list and then click Remove, double-click the field, or drag it from the Column list back to the Available Fields list. To remove all fields from the report definition, click Remove All.

___ *NOTE* ___

The available fields come from the standard view of the form or from the view defined as the Master View for the locale. If the fields that appear do not match the fields you see on the form, there might be a Web - Alternate view defined. Fields in a Web - Alternate view do not appear in the Available Fields list.

6 Use the Up and Down buttons next to the Column list to change the order of the columns in the report.

7 (Optional) In the Sorting and Grouping tab, select one or more fields on which to sort the report, and then click Add, or drag the selected field to the sorting list area.

■ If you selected "Add default fields and sort order" when creating the report, the default sort order for the form is already added to the report definition.

■ To change the sort order between ascending and descending, click the arrow in the Dir column for each field.

■ To group repeated values, click the Group check box.

8 (Optional) Define a qualification to identify the records that appear in the report. See "Using a query in a Web report" on page 173.

9 (Optional) To preview the report before you save it, click Preview.

A sample report runs and appears in a separate browser window. The Preview feature allows you to check and modify the report design until you are satisfied with the results.

You can also use the Preview feature in cases where you want a quick view of the data in a form. You can print the report or export data from the preview screen.

___ *NOTE* ___

When you preview a Report that has a base qualification, the base qualification is ignored. In this case, the report preview might include more records than when you run the report from the Report Console list.

10 To save the report for future use, click Save.

11 Click Back to return to the Report Console report list.

Defining a Web chart report

You can generate various types of charts and graphs to illustrate the report data. You can also generate a chart or graph together with a list report that shows the supporting data.

For example, a tube chart could give a quick visual summary of the number of students enrolled in each class in the Sample application, using the Sum aggregation type to calculate the total enrolled for all locations.

Figure C-5: Example chart report based on the Sample:Classes form
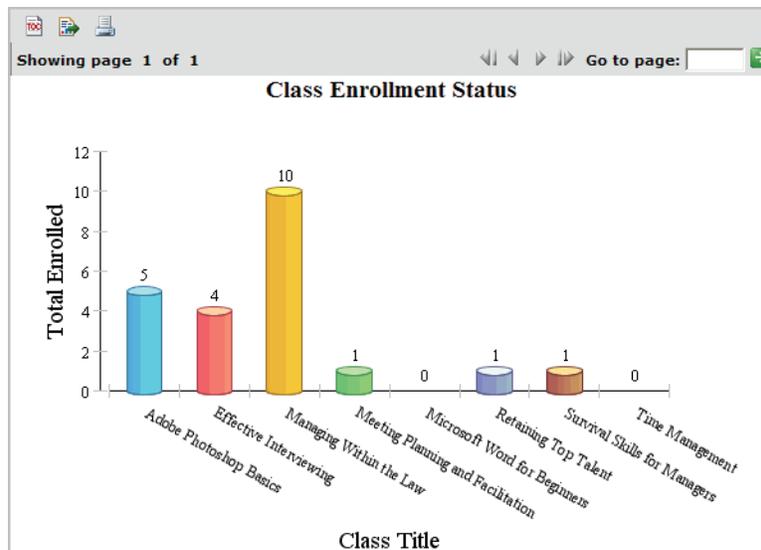
In ad hoc reports, you can click in the data area of the chart to open the form with a results list containing the underlying requests. This drill-down function allows you to work interactively with the data at the time you run or preview the report.

For example, to see more information about the students enrolled in the class "Managing Within the Law" in the Sample application-, the instructor can run this example report and then click the column labelled "Managing Within the Law" in the chart. The Sample:Classes form then opens with a results list containing the records for each student enrolled.

Type of charts

The following table describes the types of reports available from the Report Console:

Chart	Description
Pie	Pie charts are most often used to display a few components that are easily distinguishable. Typically, each slice of a pie chart displays statistics from one variable as a slice of the pie.
Bar	Bar charts are most often used for direct comparison of magnitude between categories. Bar charts can also be used to show time dependent data when the time interval is small.
Line	Line charts are most often used to display trends. Line charts display values along a common baseline, which allows quick and accurate comparisons.
Area	Area charts are used to display a limited number of related, continuous variables.

Chart	Description
Meter	Meter charts measure the most recent variable value from the variable associated with that meter. Meters can be configured to show increasing levels of severity.
Scatter	Scatter charts are used to analyze the relationship between two variables. One variable is plotted on the horizontal axis and the other is plotted on the vertical axis.
Tube	Tube charts are used to display a comparison of the quantity of each variable.
Cone	Cone charts are used to for direct comparisons of magnitude between categories in a cone shape.
Pyramid	Pyramid Charts display variables in a way that reveals hierarchical structure.

▶ **To define a chart report**

1 Create a new report as described in "To start a new report" on page 167.

2 In the Content field, select Chart or Chart + List.

■ Chart—The report is presented as a chart or graph of the type you select.

■ Chart + List—The report is presented as a chart, followed by a table. Use this procedure to define the chart section of the report. To define the list, see "Defining a Web list report" on page 168.

3 In the Chart Options tab, select the chart options:

■ Type—The type of chart you want to produce, such as a pie chart or a bar chart.

■ Category Field—Select the field to supply the category data for the chart.

In a pie chart, the values in the category field become the "slices" of the pie. In graphs, such as a bar chart, the values in the category field are plotted on the X-axis.

— *WARNING* —

Make sure that the category you selected includes values. A null value can inhibit the interactive drill-down functionality of the report.

■ Category Label—Supply a label to appear on the chart that describes the category data.

■ Aggregation—Select an aggregation method that makes sense for the data in the report.

■ Count—Reports the number of existing records for each unique value in the category field.

■ Sum—Adds the values in the series field for each unique value in the category field.

■ Average—Calculates an average of the values in the series field for each unique value in the category field.

- Minimum—Shows the minimum of the values in the series field for each unique value in the category field.

- Maximum—Shows the maximum of the values in the series field for each unique value in the category field.

- Series Field—Select the field to supply the category data for the chart.

   In a pie chart, the values in the series field are used to created each "slice" of the pie. In graphs, the values in the series field are plotted on the Y-axis.

- Series Label—Supply a label to appear on the chart that describes the series data.

For example, to produce a chart report based on the Sample:Classes form that shows number of students enrolled in each class, select the following chart options:

- Type—Tube Chart
- Category
   - Field—Class Title*
   - Label—Class title
- Series
   - Aggregation—Sum
   - Field—Number Enrolled*
   - Label—Total enrolled

4 (Optional) To preview the report before you save it, click Preview.

   A sample report runs and appears in a separate browser window.

5 To save the report for future use, click Save.

6 Click Back to return to the Report Console report list.

Using a query in a Web report

To control which records from the form will appear in the report, build a query to select the data when the report runs. The query is saved as part of the report definition.

You can use the simple query builder, the advanced query builder, or both. The simple query builder joins all query statements with the AND operator. Alternatively, advanced users can build the query using AR System query syntax with the advanced query builder. To use the operator types OR or NOT, you must use the advanced query builder.

Using the simple query builder

The Report Console includes a simple query builder that allows you to quickly construct a simple query. By default, the report designer screen opens with the simple query builder active.

Figure C-6: The simple query builder, with advanced query builder closed
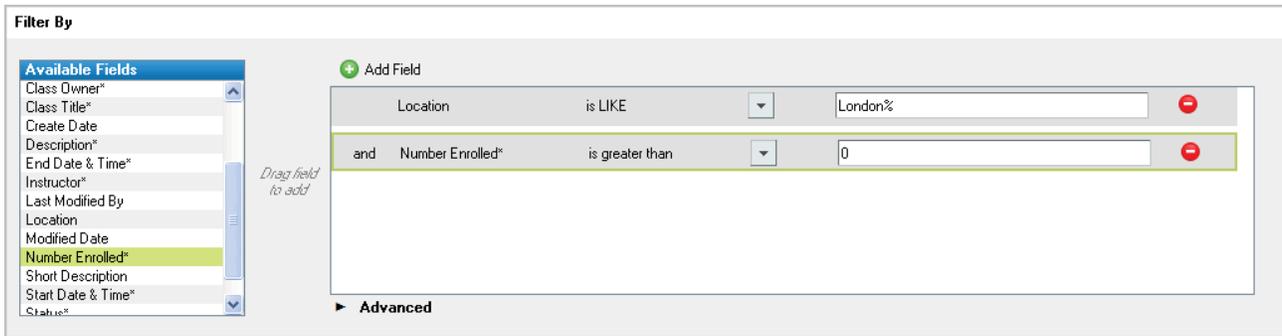
▶ **To build a query using the simple query builder**

1 In the Filter By area of the report designer screen, select a field from the Available Fields list.

2 Drag the field to the query area, or click Add Field.

3 Select the query operator:

- Is equal to—Selects records in which the value in the chosen field matches exactly the value entered in the query.

- Is not equal to—Selects records in which the value in the chosen field does not match the value entered in the query.

- Is empty—Selects records in which the chosen field is empty.

- Is not empty—Selects records in which the chosen field contains some data.

- Is myself—Selects records in which the value in the chosen field matches the current user's login ID.

- Is not myself—Selects records in which the value in the chosen field does not match the current user's login ID.

- Is LIKE—Selects records in which the value in the chosen field matches the string defined in the query.

  The LIKE operator requires that you use the percent (%) wildcard, which matches any string of 0 or more characters. For example, to get a report of classes for which Teresa Logan is the instructor, use one of the following search strings:

  - Teresa% matches all entries that begin with "Teresa"

  - %Logan matches all entries that end with "Logan"

  - T%eresa% would find entries that start with "Teresa" or "Theresa"

4 Type the value to search for in the blank field.

For example, to find Teresa Logan's classes that have students enrolled, you could use the simple query builder to construct the following query:
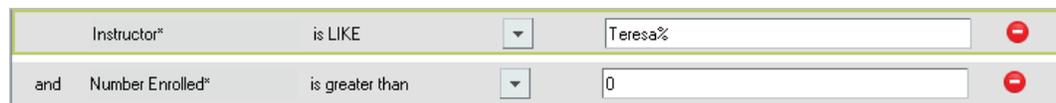
Using the advanced query builder

The advanced query builder is located below the simple query builder. By default, the advanced query builder is closed. Click the expansion arrow to open it.

Figure C-7: The advanced query builder, opened

To use the advanced query builder to find the same records (Teresa Logan's classes that have students enrolled), expand the advanced query builder and then add the following qualification:

```
'Instructor' LIKE "Teresa%"  AND 'Number Enrolled' > 0
```

To add fields, you can drag them from the Available Fields list, or select the field and then click Add Field. To cause the query builder buttons to appear, you must add a field or click in the query area.

It is possible to enter queries in both the simple and advanced query builders for the same report. If you do, these queries are linked with an AND operator when the report runs. If the advanced query builder is closed, but contains a query, the beginning of the query appears along with the Advanced expansion button:

— **TIP**

You cannot add elements in the middle of an existing query in the advanced query builder. If you need to modify an advanced query, you must add the modification on to the end of the existing query, or revise the entire query.

For more information about building AR System qualifications, see the *Workflow Objects Guide*, "Building qualifications and expressions," page 49.

You can also use these query builders to add a query to an existing report at runtime. See "Adding to or overriding a report query at runtime" on page 163.

Queries on selection fields

Selection fields include drop-down lists, radio buttons, and check boxes. In selection fields, the sort order is determined by the database value assigned to each selection. This value is not visible when you are constructing the query. Depending upon how the database value is configured, you might get unexpected results.

For example, a Priority field in which the user selects High, Medium, or Low might have the database values High=0, Medium=1, Low=2. In this case, the query "Priority is greater than or equal to Medium" will return records with priority set to Medium or Low, because in database terms qualification is seeking values greater than or equal to 1.

If this occurs, try revising the query to use the opposite operation, for example "Priority is less than or equal to Medium," and then re-run the search.

Defining a query

The following procedure begins in the Report Definition screen and assumes that you have already created the report itself as described in "To start a new report" on page 167.

▶ **To define a report query using the simple query builder**

1 In the Filter By area, select the first field that you want to use in the query from the Available Fields list.

2 Click Add or drag the field to add it to the simple query builder.

3 In the simple query builder, click the down-arrow and select from the list of operations.

4 Enter the value to search for.

    For example, to find classes for which Teresa Logan is the instructor, select the `Instructor*` field and the `is equal to` operation, and then type in `Teresa Logan`.

5 To add another item to the qualification, select the appropriate field from the Available Fields list, and then click Add or drag the field to the simple query builder.

    The second search criterion is added to the simple query builder with an AND search. In other words, a record must match both conditions in order to appear in the report.

    For example to find Teresa's classes that have at least one person enrolled, select `Number enrolled` and `is greater than`, and then type in `0`.

6 Click Save.

Editing and deleting reports

You can edit or delete any report that you created, and administrators can modify or delete any report. You cannot edit or delete reports created by others, but you can open them to view the built-in query and fields used in the report.

You can also create a copy of a report by using the Save As button to save the report with a new name. In that case, you are the creator of the new report and can edit it.

▶ To edit an existing report

1 Select the report in the Report Console.

2 Click the Edit Report icon 🖊 that appears to the left of the report name in the console.

3 Make any necessary modifications to the report as described in:

- "Defining a Web list report" on page 168
- "Defining a Web chart report" on page 170
- "Using a query in a Web report" on page 173
- (For AR System reports) "Defining AR System reports" on page 177.

4 Click Save to save your changes.

5 Click Back to return to the Report Console list.

▶ To delete an existing report

1 Select the report in the Report Console.
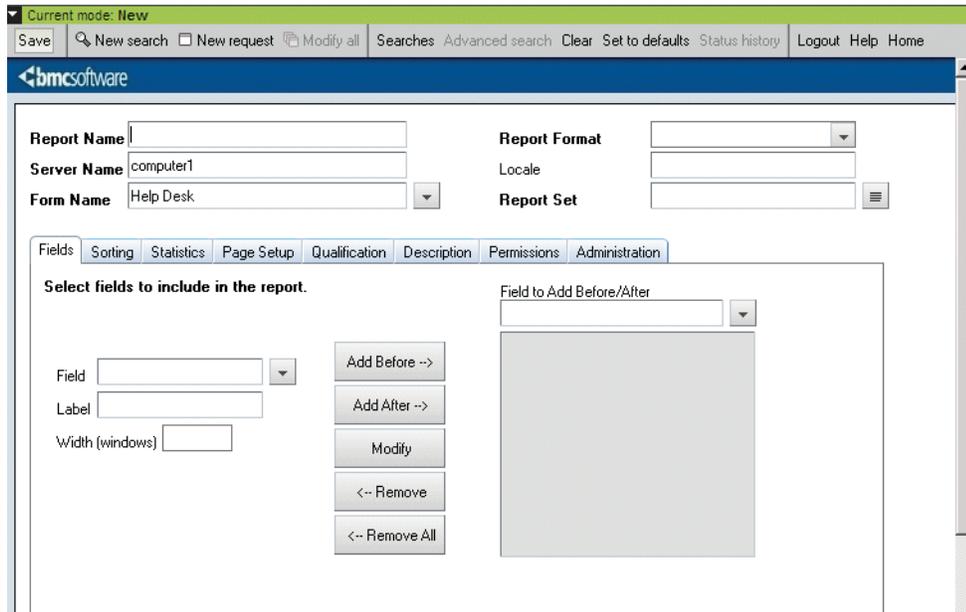
2 Click Delete ⊖.

Defining AR System reports

Create an AR System report if you need to export data directly to AR System export (`.arx`), AR System XML, or comma-separated value (`.csv`) format.

▶ To create an AR System report

1 In the Report Console, click New.

2 Select the AR System report type.

The ReportCreator opens in New mode.

Figure C-8: ReportCreator

3 In the Report Name field, enter a unique, locale-specific name for the report; for example, `MyReport-en`.

4 From the Report Format drop-down list, select one of the following choices for the format of the report:

- Record—Displays each field of the request on a separate line.

- Column—Displays each field as a column heading, and displays information from each request in a separate row.

- Compressed—Compresses the information with commas, white space, or any other specified character between the columns. In a browser, the compressed format is viewed in a column format.

5 (For administrators) In the Locale field, enter the locale of the report in the format *language_Country*, for example `pt_BR`.

The country portion of the locale code is optional, depending on whether you want to allow all country variations of a language to use the report. If you enter only the language portion, all country variations of a language can use the report. For example, an entry of `pt` would include all country variations of Portuguese, but `pt_BR` designates only Brazilian Portuguese.

For a list of standard choices for this field, check the Locale view property on any form in BMC Remedy Developer Studio.

6 In the Report Set field, enter a locale-independent description for the report.

The Report Set field is used to identify locale variants of the same report. The combination of Report Set and Locale must be unique.

7 Update each tab in the form as described in the following sections.

Entries that are specific to Windows reports are identified in each of the tabs. Those settings are ignored for Web reports.

8 Save the report.

Fields tab

In the Fields tab, define the fields on the form from which data is being reported to be included in the report.

▶ **To specify fields to be included in a report**

1 In the Field field, click the menu button to select which fields on the specified form will be displayed on the report.

2 In the Label field, enter the field name as you want it displayed on the report.

3 In the Field to Add Before/After field, select a field to use as a reference when clicking the Add After or Add Before buttons.

4 Click Add Before or Add After to set the positioning of fields in a report, with reference to the Field to Add Before/After field.

5 Click Modify to update the selected field label or width specification.

6 Click Remove to remove a selected field.

7 Click Remove All to remove all selections from the field list.

Sorting tab

In the Sorting tab, select fields to sort on and set the sort order and grouping for each field for the report. You can select up to five fields for sorting.

▶ **To specify sorting criteria**

1 From the first Field Name list, select the field on which you want to sort.

2 Select Ascending or Descending Sort Order for the selected field.

3 To group by a field, select the Group check box for the selected field.

4 Repeat steps 1 through 3 for the other fields on which you want to sort.

Statistics tab

In the Statistics tab, define expressions that will calculate statistics for the requests contained in the report. Use the Statistics tab to specify what type of statistics to include.

▶ **To include statistics in a report**

1 From the Operation field, select the appropriate operation:

- Count—Tallies the number of requests.

- Sum—Adds up specified fields or the arithmetic relationship among fields.

- Average—Calculates the average of specified fields.
- Minimum—Calculates the minimum value for a specified field.
- Maximum—Calculates the maximum value for a specified field.

Except for Count, these operations can be applied only to numeric and date/time fields. Each operation can apply to the whole report, or to a group of requests in a report. Groups are defined in the Sorting tab.

2 From the Expression field, select a field from the menu list to include as part of a statistic.

An expression is required for all statistical operations except Count. Whether you include an expression for a Count operation depends on how you want rows with null values to be counted.

If you are defining a Count operation that includes an expression, only rows with a value that is not null for the specified expression are counted when the report is run. If you are defining a Count operation that does not include an expression, all rows returned are counted, including those with null values.

The menu list displays all numeric or date fields in the form. Expressions can include any of the following values:

- **Numeric fields**
- **Date fields**
- **Status history fields**
- **Keywords**

  The most commonly used keywords are `$DATE$`, `$NULL$`, `$TIME$`, `$TIMESTAMP$`, `$USER$`, **and** `$WEEKDAY$`. **Keywords are case-sensitive and must be entered in all capital letters. For a complete list of AR System keywords, see the Workflow Objects Guide,** "Keywords," page 221.

  _____ *NOTE* _____

  For reports to run properly in a browser, you must add a backslash to the keyword in the Expression field, for example, `$\TIMESTAMP$`.

- **Numbers**

  You can type numbers directly into the Expression field, for example, 5.25, 33, and so on.

- **Arithmetic operators** (+, -, *, /, and %)

  You can type arithmetic operators directly into the Expression field, similar to the way they are entered in the advanced search bar.

3 In the Label field, type the label to identify a statistic on the report.

You can use text, keywords, or field values, and enter as many as 128 characters. To use keywords for the Label field, click the menu list and select the appropriate keyword. Include one of the following results formats:

`%*%`	Default format
`%#%`	Numerical format (total number of seconds)
`%:%`	Time format (hh:mm:ss; hours, minutes, and seconds)

On the report, the statistic will appear inside the label. For example, a label created as `Statistical result is %#% days` will appear on the report as `Statistical result is 123 days`.

You can also include any of the following control characters in a label field:

`\b`	**Backspace**
`\n`	**Return**
`\t`	**Tab**
`\\`	**Backslash**
`\nnn`	**ASCII character**

4 From the Compute On field, select the scope of a statistic.

You can determine whether a statistic is calculated for the entire report, or for defined groups within the report by selecting the appropriate setting in the Compute On field.

- Report—Calculates the statistic for all entries in the report. The statistic appears at the end of the report.

- Group *N*—Calculates a statistic for groups defined in the Sorting tab. The statistic appears below each group.

5 In the Layout field, for the Windows platform only, specify how you want the results to be displayed in the report by choosing one of the following options:

- Single—Displays all the statistical results on one line.

- Multiple—Displays each statistical result on its own line.

- Column—Displays the result for each value at the bottom of the column of the field specified in the Expression field. Column is valid only for a column-formatted report.

The Layout field setting works with the Compute On setting to determine where a statistic appears on a report.

Page Setup tab

In the Page Setup tab, you only need to specify the page configuration information in the General section.

▶ **To specify general page configuration information**

1 Enter the name of the report in the Title field. The report title appears at the top of the report.

2 Enter text in the Header field. The header appears at the top of every page.

3 Enter text in the Footer field. The footer appears at the bottom of every page.

To use keywords for the Title, Header, and Footer fields, click the menu list and select the appropriate keyword. The data in the Title, Header, and Footer fields must be a single line. Embedded carriage returns are not allowed.

The other sections on the Page Setup tab, marked "(windows)", are for use in BMC Remedy User only and are not required when creating an AR System report on the Web.

Qualification tab

In the Qualification tab, specify which records to include in a report. If a report is run from a results list, any qualifications defined in this tab are ignored. See the Workflow Objects Guide, "Building qualifications and expressions," page 49.

Description tab

In the Description tab, enter a description of the report.

Permissions tab

(For administrators only) In the Permissions tab, use the Assignee Groups field to define who has access to a report.

If the server is configured to allow multiple groups in the Assignee Group field, then this field will allow multiple groups to be specified, separating each group with a single space. If the server is not configured to allow multiple groups, then only one group can be specified in this field.

Leaving the Assignee Groups field blank allows only the submitter to view the report. Specifying Public allows anyone to view the report.

Administration tab

In the Administration tab of the Report Creator form, enter the user name of the person who is creating the report, and define the status of the report.

1 In the Submitter field, enter the name of the user creating the report.

2 In the Status field, select one of the following options:

- Active—Makes the report available in the Report Console.

- Inactive—Indicates a report that is no longer active.

- Pending—Indicates a report that is being reviewed.

If Inactive or Pending is selected, the report does not appear the Report Console list.

Export file formats for AR System reports

You can save or export AR System data to use in AR System forms, in a spreadsheet, or in other applications. You can also save or export non-AR System data from another application to use in an AR System form.

The file formats that you choose for exporting depend on the original data source and how you will use the data. File formats for AR System reports are explained in the following sections.

AR Export format

AR Export (`.arx`) is the default file type. It yields the cleanest results when data is exported and imported within AR System. The AR Export format properly formats data that you import into an AR System form by using BMC Remedy Data Import.

— NOTE

When an attachment is exported in AR Export format from a browser, a `.zip` file is created that includes the `.arx` file and the attachments.

AR XML format

AR XML (`.xml`) is a BMC Remedy XML standard derived from the W3C XForm standard, and it contains several elements that are required for AR System use. To import XML data into an AR System form by using BMC Remedy Data Import, your data must conform to the AR XML data specification. Data exported to the AR XML file type conforms to this specification. You can also convert XML data obtained outside AR System to the AR XML standard.

Conversely, you can export AR XML data, parse it with any tool that parses documents that conform to the XForm specification, and use the data outside AR System. For information about XForms, see the W3C website.

Attachments are handled in the same manner as in the `.arx` file type.

— NOTE

When you export AR System data from Crystal Reports to HTML 3.2, HTML 4.0, or XML, your default export directory depends on whether your computer is connected to a network. If your computer is connected to a network, and your login profile has a temporary directory setting under Windows, your default export directory will be `%USERPROFILE%\LocalSettings\Temp`. If your computer is not connected to a network your export will default to whatever temporary directory is set in your Windows environment settings, for example, `C:\Temp` or `C:\Windows\Temp`.

Comma-separated values format

You can use the comma-separated values (`.csv`) format if you plan to use the report data in other applications, such as Crystal Enterprise or in spreadsheets. For example, if you want to use the report data in a Microsoft Excel spreadsheet, export it as a `.csv` file, open Excel, and import the data into the Excel file.

— NOTE —

You cannot export the content of an attachment with a `.csv` file. If you export a `.csv` file with an attachment, only the file name of the attachment is exported.

Record, column, and compressed formats

When you select Record, Column, or Compressed format in the ReportCreator form in a browser, the report is saved as an HTML file (for example, `report.rep.html`).

Also, the compressed format is not supported in a browser. If you select Compressed as the report format, the report is displayed in Column format instead.