Systems Enhancement and Defect Log

User Training Guide

Sections

Getting Started

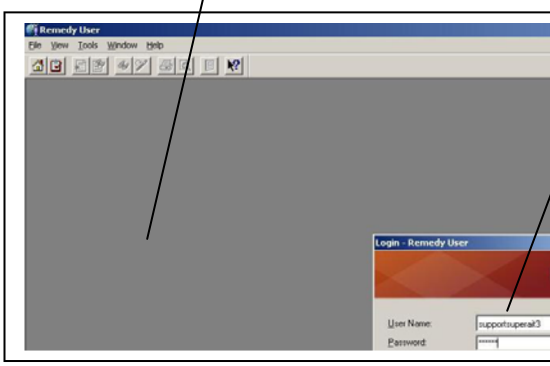
Steps: Launching the Remedy User Tool

Double-click the appropriate desktop icon that launches the AR System.

The AR System logo displays and the main window opens in the background. A Login dialog box appears on the monitor screen.

AR System Main Window

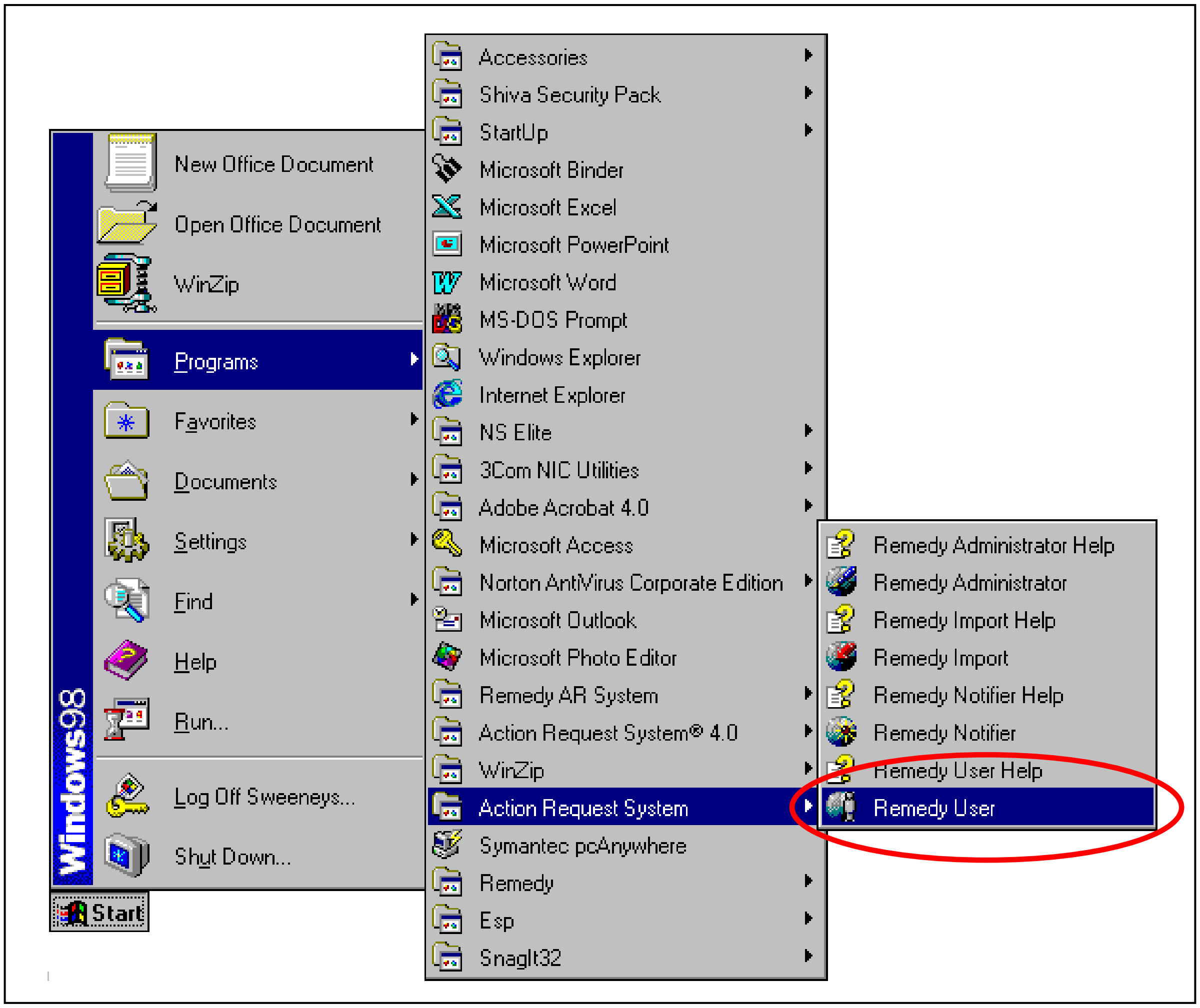
AR System Login Dialog Window



Alternatively, open the Start menu, and select Programs. *See Figure below.*

a. From the list of programs, select Action Request System.

b. Finally, select Remedy User. *The AR System logo displays and the main window opens in the background. A Login dialog box appears on the monitor screen, as seen in Figure above.*



Logging In - Launching the AR System causes a Login dialog box to appear. For security reasons, everyone who works with the AR System has a Remedy login name and a password — both are *case sensitive*. Therefore, remember to type them into the Login dialog box exactly as they are spelled.

The Login Dialog Box

Most of the ID's consist of a person's last name and first initial. Notice that the password appears as a row of asterisks.

Status Phase Transitions

A SEDL ticket has three statuses: **Open**, **Reopened**, **Closed**. Below is a list of valid phases, with definitions for each status:

Open

- **Unassigned** – the defect has not been assigned a resource.
- **Assigned** – the defect is assigned to a resource – development has not started
- **Active –** development is in progress.
- **Assurance –** the fix is being tested by ATG.
- **Verified** – confirm the fix resolves the defect.
- **Rollout** – the defect is assigned to a production release.
- **Postponed** – the defect is put on hold.
- **Monitor –** the defect is being observed for reoccurrence.
- **Duplicate** – the defect is a duplicate of an existing defect. Duplicates should not be removed from Remedy.

Reopened

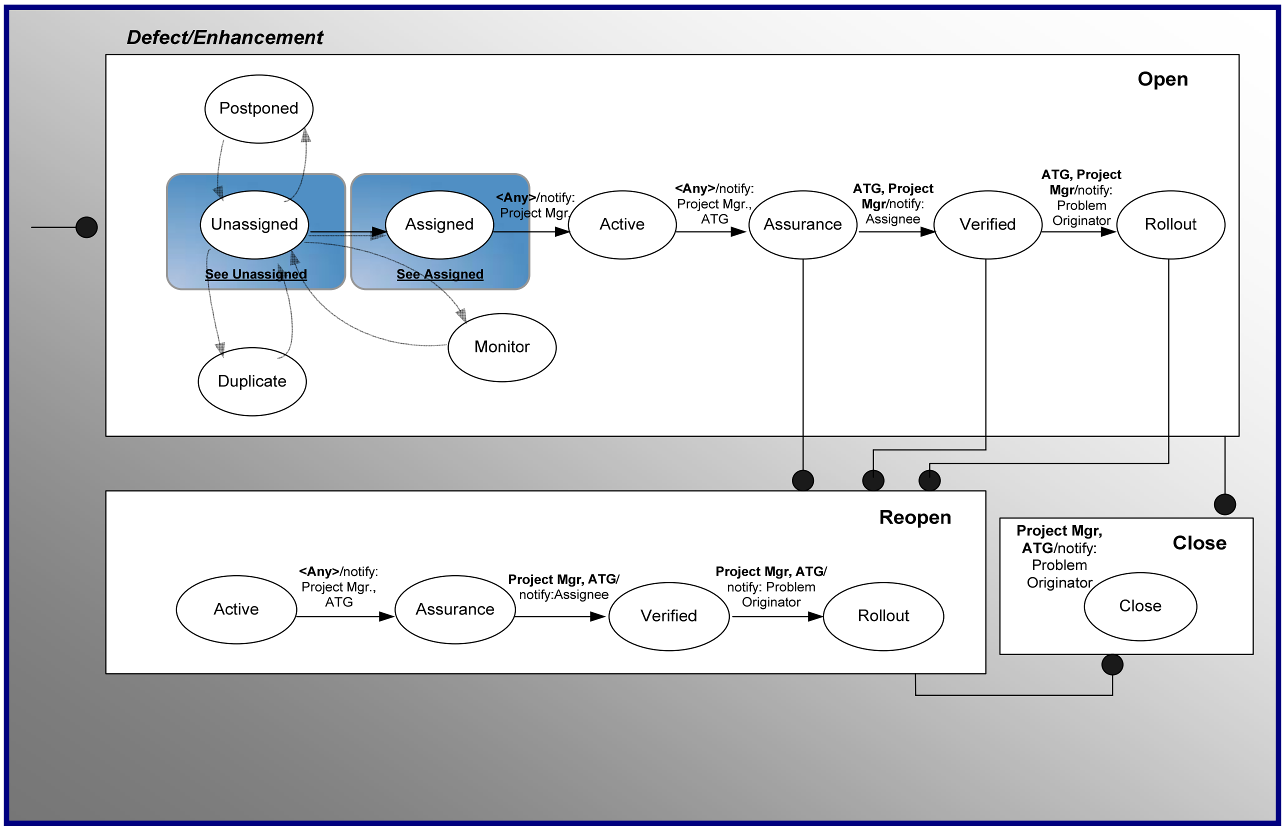
- **Active –** development is in progress.
- **Assurance –** the fix is being tested by ATG.
- **Verified** – confirm the fix resolves the defect.
- **Rollout** – the defect is assigned to a production release.

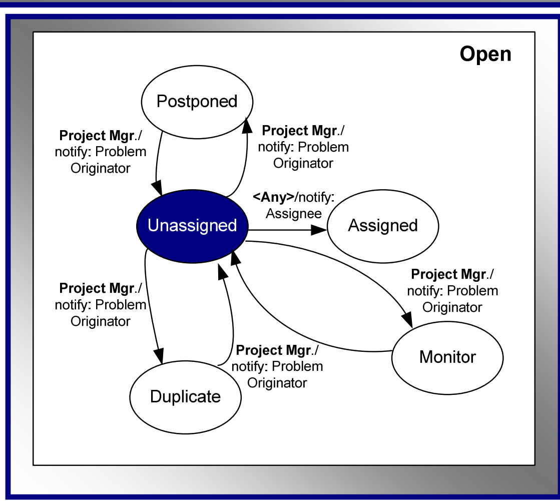
Closed

- **Closed** –the defect is finished.

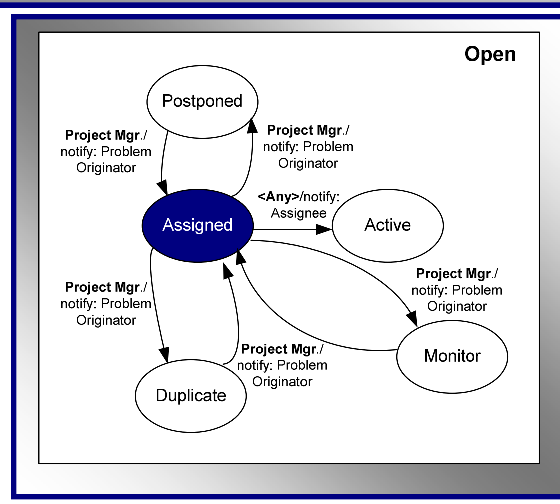
The following chart is a matrix or guide for each Status/Phase transition. During the lifecycle of a ticket only certain phase transitions are permitted. To move a ticket from one phase to the next, you must belong to either the ***SBT Support*** or ***Systems management groups***.

Note: Moving a defect or enhancement from **Assigned** to **Unassigned** is allowed.



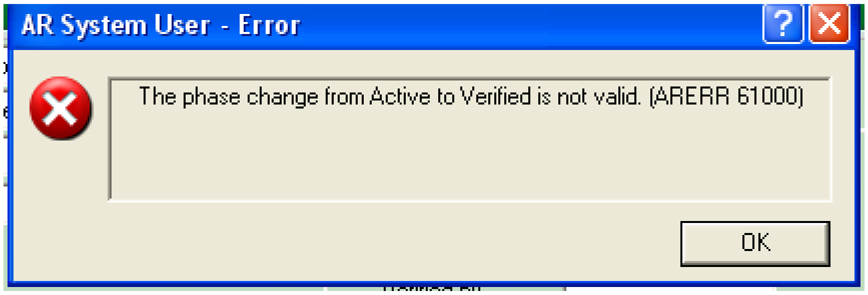


Unassigned



Assigned

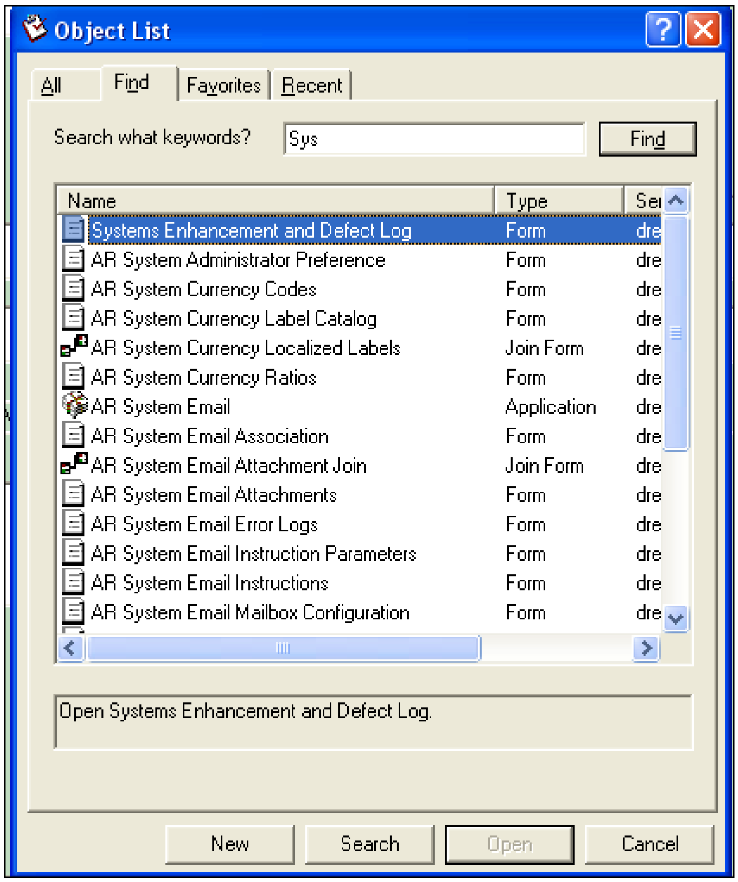
If a user tries to move a ticket to an illegal phase they will receive the following error message:



Creating a SEDL Ticket

Opening the Systems Enhancement and Defect Log (SEDL)

To open the SEDL form press the icon ,or select “File”> “Open”> “Object List” from the menu bar. The following dialog form will open:



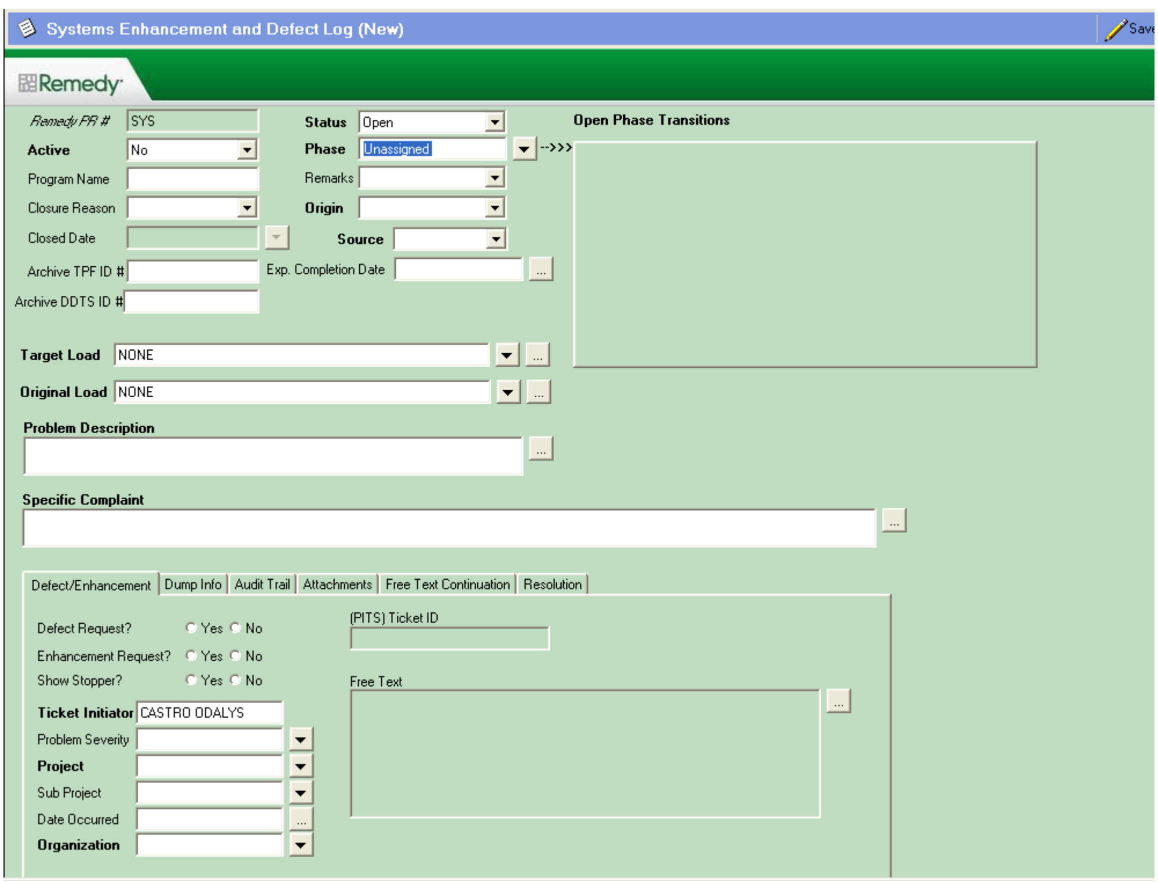
On the find tab, type in “Sys” and press the find button. Select the Systems Enhancement and Defect Log as seen above and press the “New” button at the bottom of the dialog window. This will open the SEDL form. When creating a new SEDL ticket the form must be opened in a green window as seen in the diagram on the next page. If you happen to open the form in the Search mode, the screen will be “Blue”. You can easily toggle to the “Submit” mode (green screen) by pressing the icon, on the icon menu bar.

Systems Enhancement and Defect Log (SEDL)

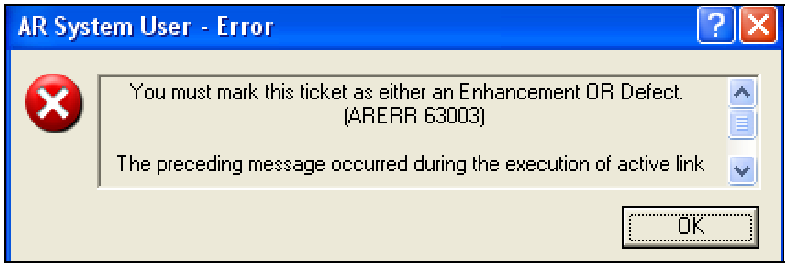
Any systems developer can enter a new Enhancement or Defect ticket. When a ticket is initially opened the ‘Status’ defaults to “**Open**” and the ‘Phase’ is set to “**Unassigned**.” Also the ‘Ticket Initiator’ will populate with the user that is currently logged onto the system. The user must fill in all the required fields (**bold fields**).

Other required fields are: “Origin”, “Load”, “Problem Description”, “Organization”, “Specific Complaint”, Project”, “Sub-Project” and “Problem Severity.”

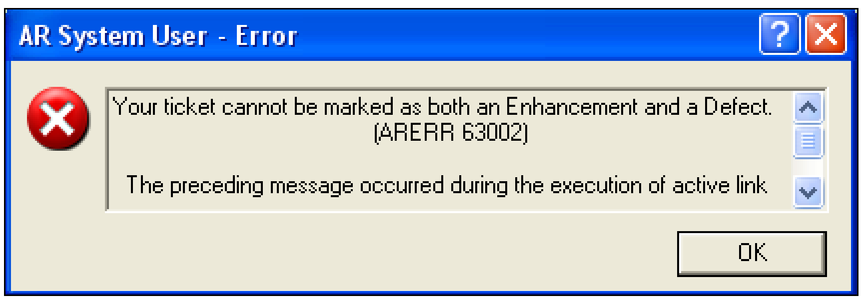
Origin – Where the problem originated, e.g., Production, Assurance, etc.
Source – The location where the problem originated, e.g., C1, C2, DR, etc.
Target Load – The application load where the issue will be fixed.
Original Load – The application load where the issue was discovered.
Problem Description – One line description of the problem.
Specific Complaint - Description of the issue that was reported.
Organization - Group name of the person who entered the issue.
Project – The system where the problem occurred.
Sub-Project – Required via workflow. The Sub-Project group is the initial investigator of the issue. Remedy sends e-mail notifications based on the “Sub-Project” groups.
Problem Severity – Request via workflow.



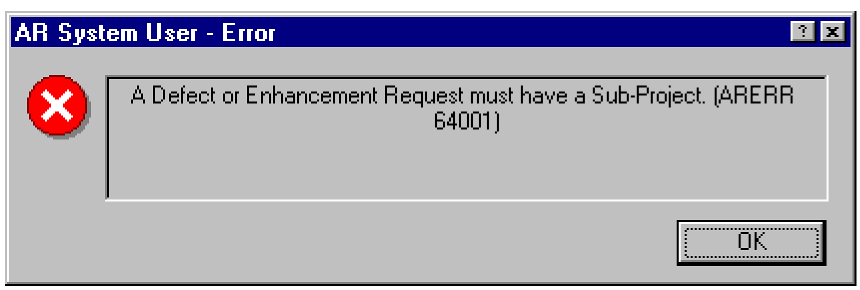
The submitter must indicate if the Request is a Defect or Enhancement by selecting “Yes”. If a Request is not marked “Yes” for either ‘Enhancement Request?’ or ‘Defect Request?’ the following error message will appear:



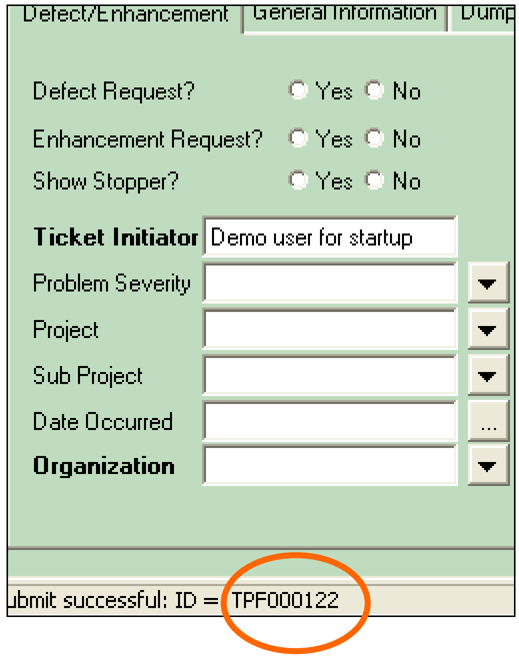
Note: A request cannot be marked as both a Defect and Enhancement at the same time. The following error message will appear:



All Enhancements and Defects must have a ‘Problem Severity’ and a ‘Sub-Project’. Even though the fields are not bolded, they are required via workflow. If they are not populated an error message will appear as seen below:



When the ticket has been Saved the system will present a ticket number at the bottom of the screen:



At this point, the defect/enhancement remains in Open status, Unassigned phase.

Flow of Events for the Systems Enhancement and Defect Log (SEDL)

Status: Open
Phase change: From Unassigned to Assigned

Systems management changes the defect/enhancement from Unassigned to Assigned for investigation.

- **'Assigned'** is selected from the Phase drop-down list. The system will unhide the **'Assigned'** tab.

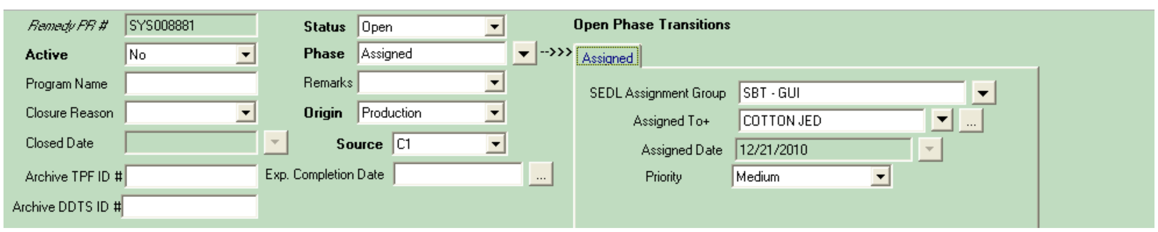
- A developer or Systems Planning staff is selected from the '**Assigned To'** field drop-down list to investigate the defect/enhancement.

  Note: Systems Planning investigates all SEDLs that may become new projects.

- When the ticket is saved, the system automatically populates the 'Assigned Date' field.

- E-mail notification is sent to the person assigned to investigate the defect/enhancement.

- The person assigned to the ticket will assign a 'Priority' and enter the amount of time spent analyzing the request in the 'Analysis Time (Hrs)' field.



Permissions

- Systems management

Notification

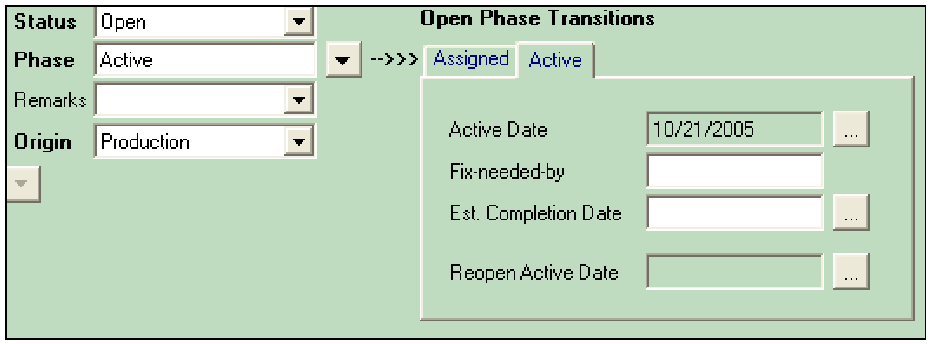
- Based on the 'Assigned To' field
- Based on the 'Sub-Project' field

Status: Open
Phase change: From Assigned to Active

The defect/enhancement is moved from Assigned to Active when development has begun.

- **'Active'** is selected from the Phase drop-down list. The system will unhide the **'Active'** tab.

- When the ticket is saved, the system automatically populates the 'Active Date' field.



Permissions

- Systems management
- Any systems developer

Notification

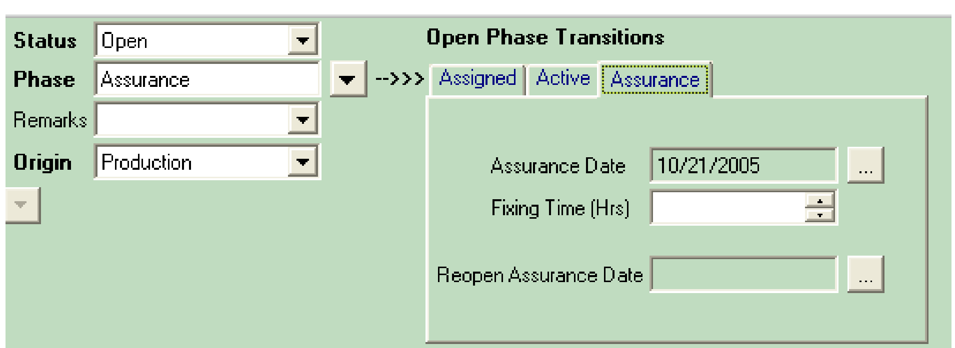
- Based on the 'Sub-Project' field

Status: Open & Reopen
Phase change: From Active to Assurance

The defect/enhancement is moved from Active to Assurance when coding is complete and the defect/enhancement is ready for assurance testing.

- When the ticket Phase moves from "Active" to "Assurance" the system will unhide the **'Assurance'** tab.

- When the ticket is saved, the system automatically populates the 'Assurance Date' field.



Permissions

- Systems management
- Any systems developer
- Assurance Test Group (ATG)

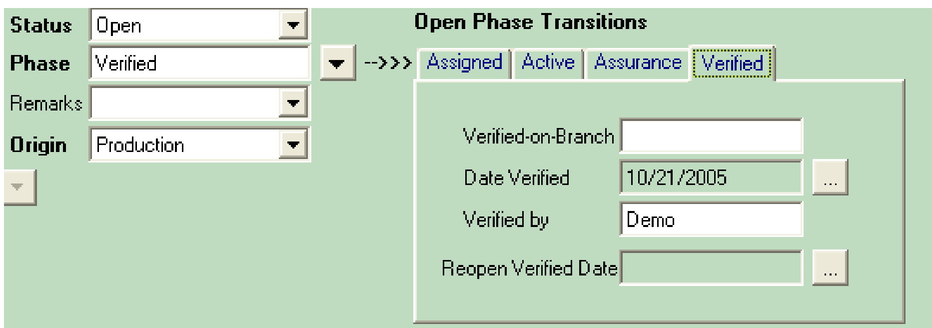
Notification
- Based on the 'Sub-Project' field
- Matt Danaher

Status: Open & Reopen
Phase change: From Assurance to Verified

When the defect/enhancement has completed assurance testing, confirming the defect/enhancement is fixed, it is moved to Verified.

- When the ticket Phase moves from "Assurance" to "Verified" the system will unhide the **'Verified'** tab.

- When the ticket is saved, the system automatically populates the 'Date Verified' and 'Verified by' fields.

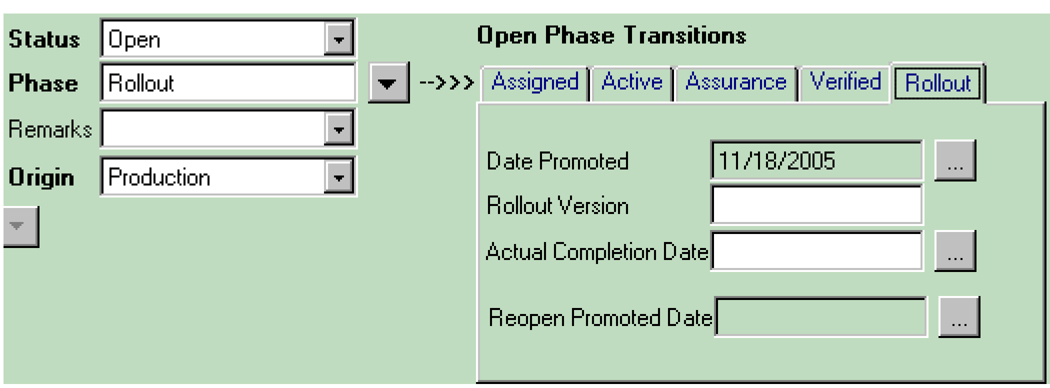


Permissions
- Systems management
- Assurance Test Group (ATG)

Notification
- Based on the 'Sub-Project' field

Status: Open & Reopen
Phase change: From Verified to Rollout

When a defect/enhancement is ready for a production release it is moved to the Rollout phase.



- When the ticket Phase moves from “Verified” to “Rollout” the system will unhide the **‘Rollout’** tab.

- When the ticket is saved, the system automatically populates the ‘Date Promoted’ field.

Permissions
- Systems management

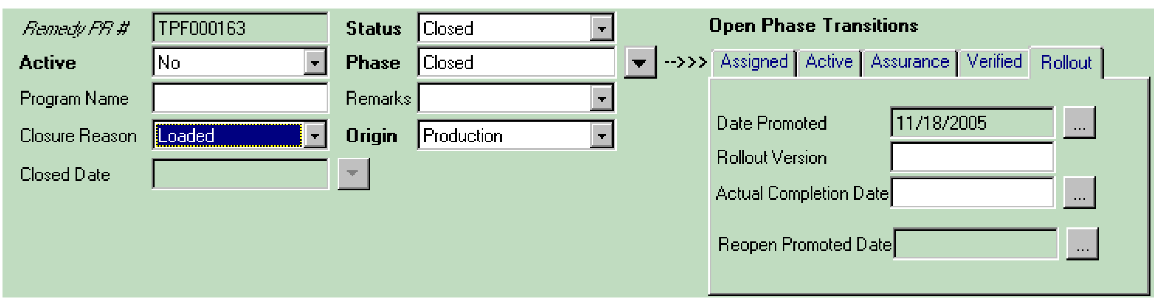
Notification
- Based on the ‘Sub-Project’ field

Status: Closed
Phase change: Rollout to Closed

When a defect/enhancement has been loaded or cancelled it is moved to the Closed status.

- Select ‘**Closed**’ from the Status drop-down list. The Phase field will automatically populate with “Closed“.

- Choose the **‘Closure Reason’** from the drop-down list and click Save. The ticket will be marked as ”Closed” in the system.



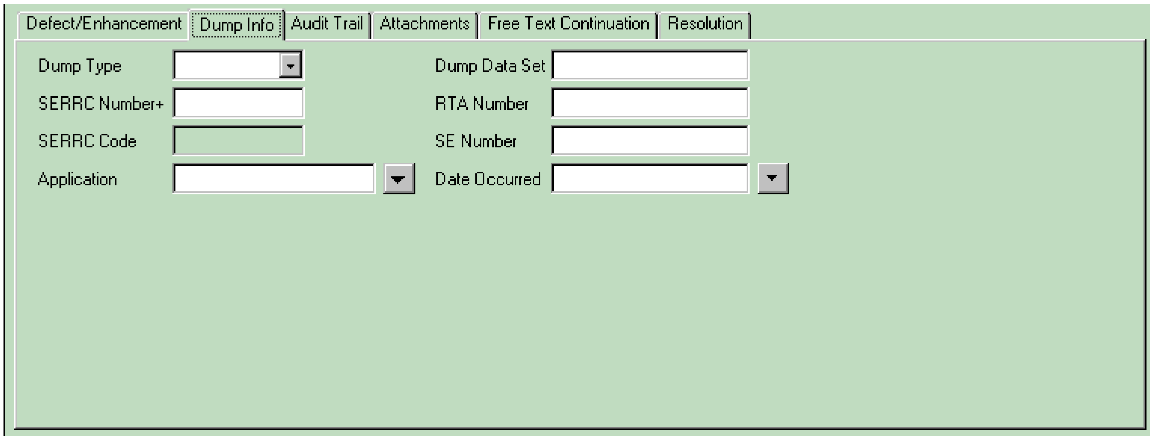
Permissions
- Systems management

Notification
- Based on the ‘Sub-Project’ field

Defect or Enhancement is in Re-Opened Status

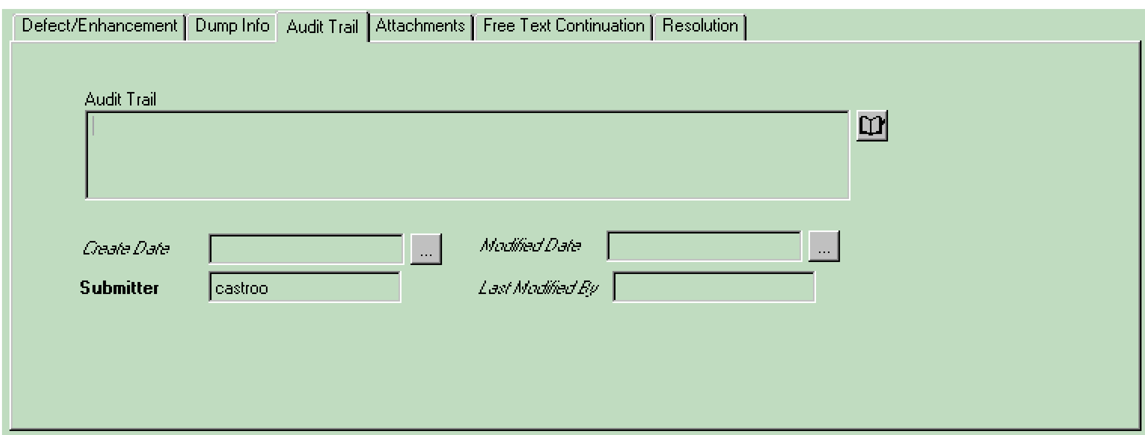
If a defect/enhancement is reproduced during the Assurance, Verified or Rollout phases, the defect/enhancement will be set to Re-Opened Status. The defect/enhancement will be Re-Opened at the Active Phase and workflow will proceed through the Closed Status.

Dump Info Tab

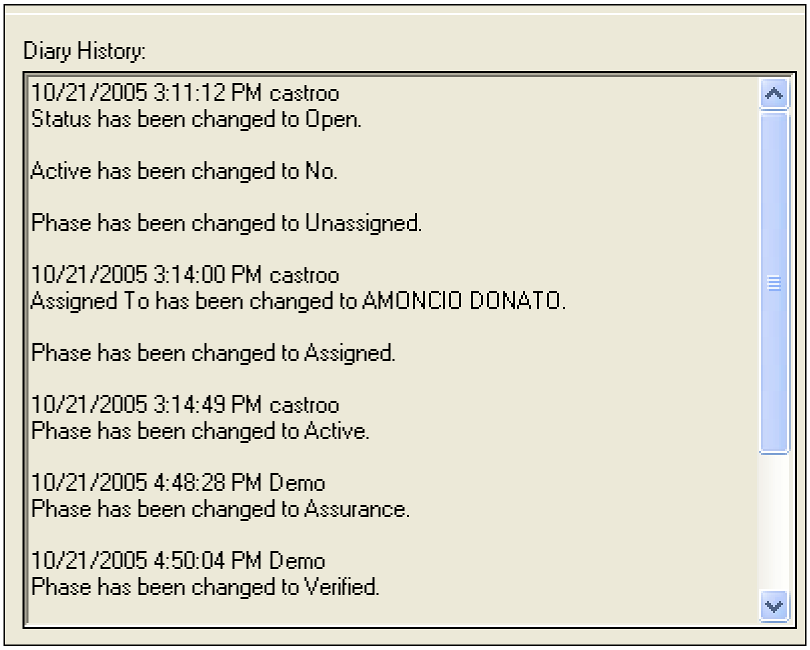


Audit Trail Tab

The audit trail tab is automatically populated by the system when there are changes made to a ticket. When the ticket is initially created the 'Submitter', 'Create Date', 'Last Modified by', and 'Modified Date' fields are populated.

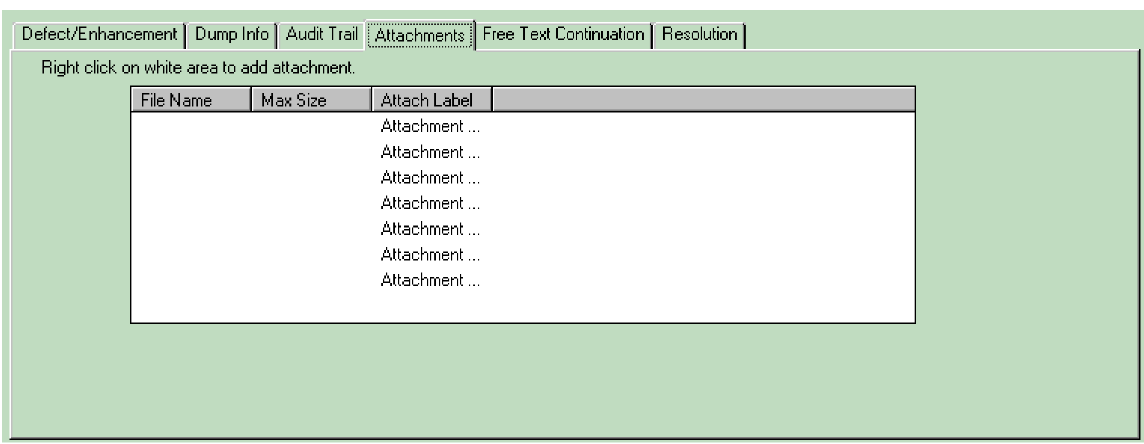


The ‘Audit Trail’ field is populated when various changes are made, see examples below:



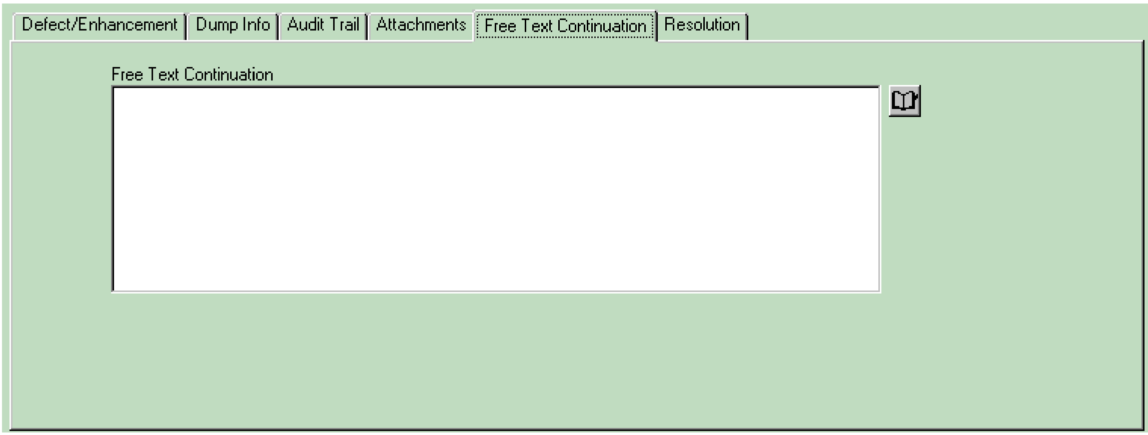
Attachments Tab

The ‘Attachment’ tab is where attachments can be saved. To add and attachment, move your cursor over the File Name column, right click on the mouse, and then select ‘Add’ and search for the file you wish to attach.



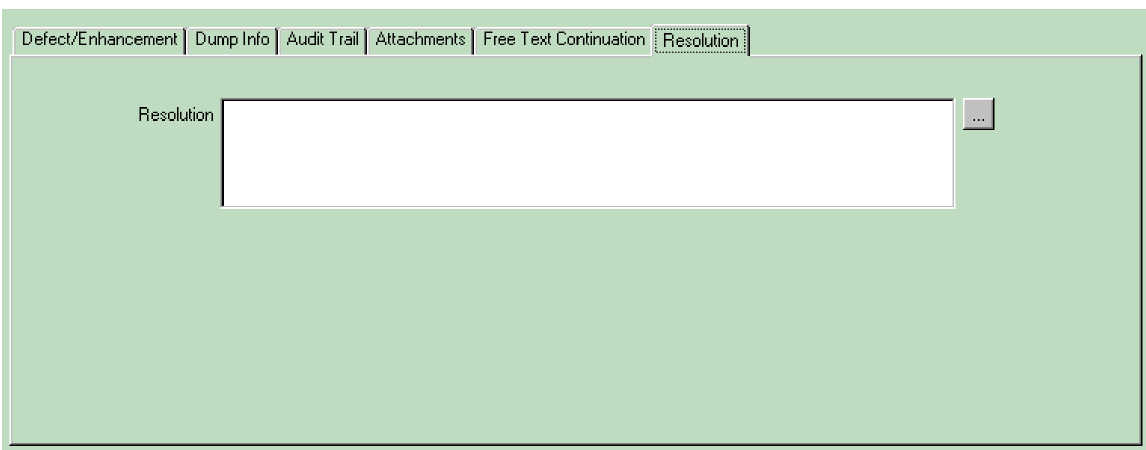
Free Text Continuation Tab

On the ‘Free Text Continuation’ tab is a diary field to be used to enter additional details of a ticket. This field should be used to enter the details of a defect or enhancement during the lifecycle of a request.



Resolution

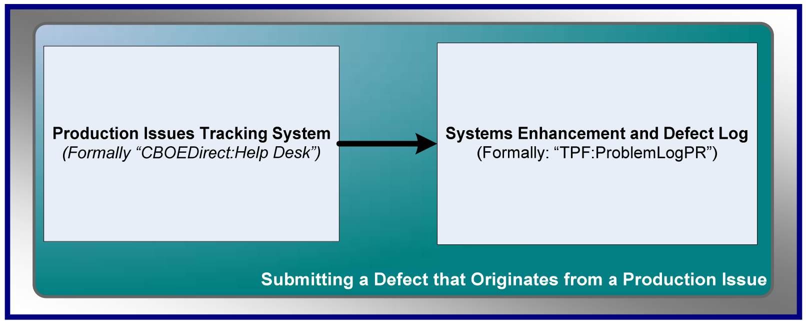
The Resolution’ tab contains the ‘Resolution’ field which allows a user to enter details of the solution.



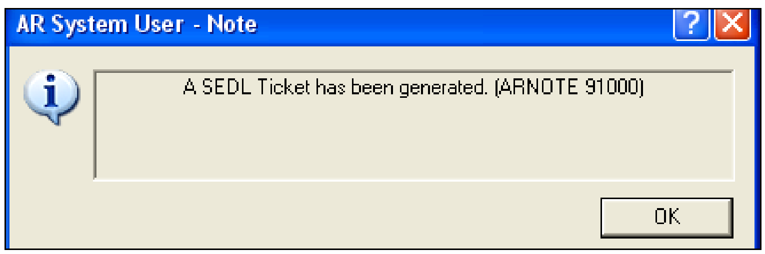
Creating a SEDL Ticket from PITS

Submitting a Defect that Originates from a Production Issue

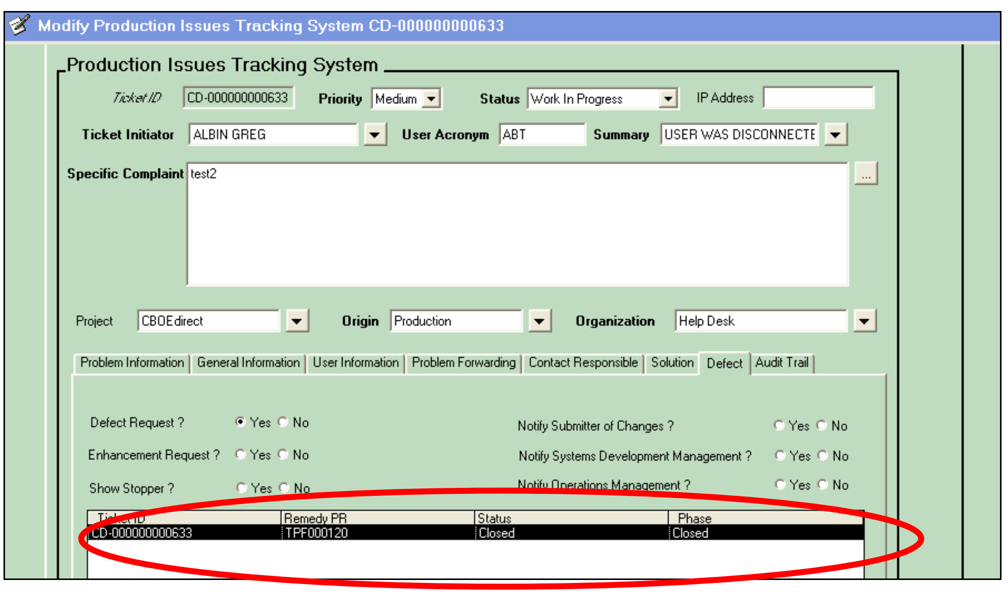
1. If a member of SBT Support or Systems management group determines a production issue (the Origin field is set to “Production”) is a defect, the Defect checkbox is selected on the Production Issues Tracking System (PITS) form.



On “Save” the following message will appear:



Once the SEDL ticket has been generated an entry fill display in table field below.



2. SBT Support or Systems management selects the appropriate Sub-Project group to notify. The issue is then forwarded to the Systems Enhancement and Defect Log (SEDL) form carrying over the fields: 'Ticket ID', 'Ticket Initiator', 'Organization', 'Origin', 'Sub-Project', 'Specific Complaint', 'Project', and 'Summary'.

3. Remedy sends e-mail notification to the Sub-Project group and the Ticket Initiator informing them that a defect has been submitted.

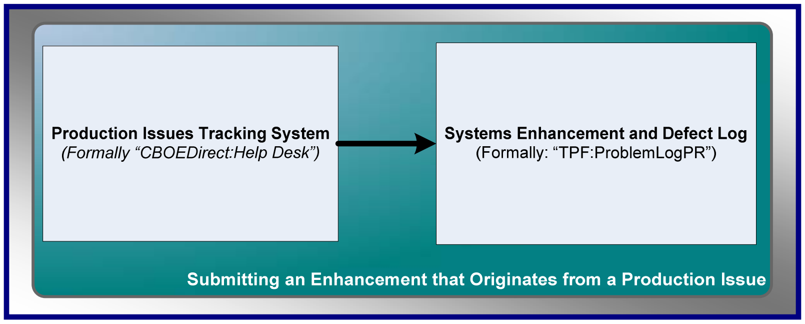
4. The Sub-Project group reviews the issue and assigns.

5. Remedy sends e-mail notification to the Ticket Initiator of the issue's status change.

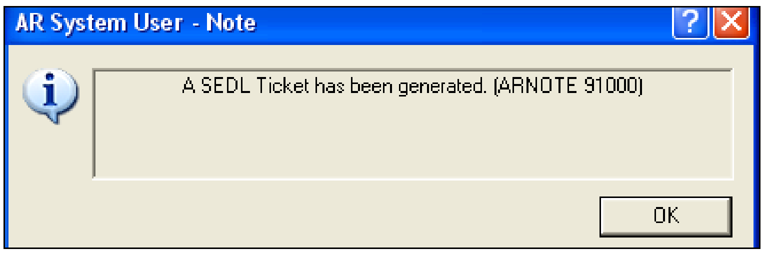
6. The defects flow of events will follow in the SEDL form. Refer to the section: *Flow of Events for the Systems Enhancement and Defect Log (SEDL)*

Submitting an Enhancement that Originates from a Production Issue

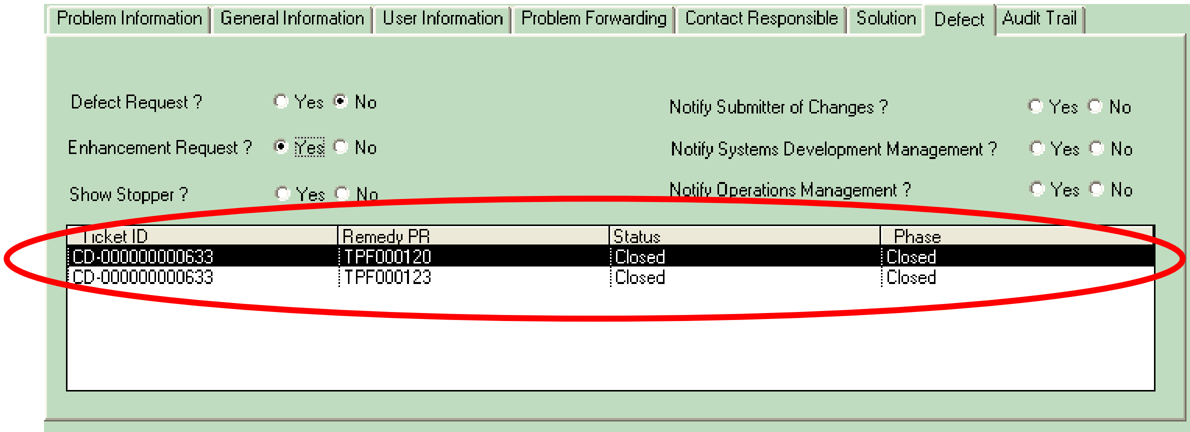
1. If SBT Support or Systems management determines a production issue is an enhancement, the Enhancement checkbox is selected on the Production Issues Tracking System (PITS) form.



On "Save" the following message will appear:



Once the SEDL ticket has been generated an entry fill display in table field below. There can be multiple enhancements and defects associated with a PITS ticket.



2. SBT Support or Systems management selects the appropriate Sub-Project group to notify. The issue is then forwarded to the Systems Enhancement and Defect Log (SEDL) form carrying over the fields: ‘Ticket ID’, ‘Ticket Initiator’, ‘Organization’, ‘Origin’, ‘Sub-Project’, ‘Specific Complaint’, ‘Project’, and ‘Summary’.

3. Remedy sends e-mail notification to the Sub-Project group informing them that an enhancement has been submitted.

4. The Sub-Project group reviews the issue.

5. Remedy sends e-mail notification of the issue’s status change.

6. The enhancements flow of events will follow in the SEDL form. Refer to the section: *Flow of Events for the Systems Enhancement and Defect Log (SEDL)*.

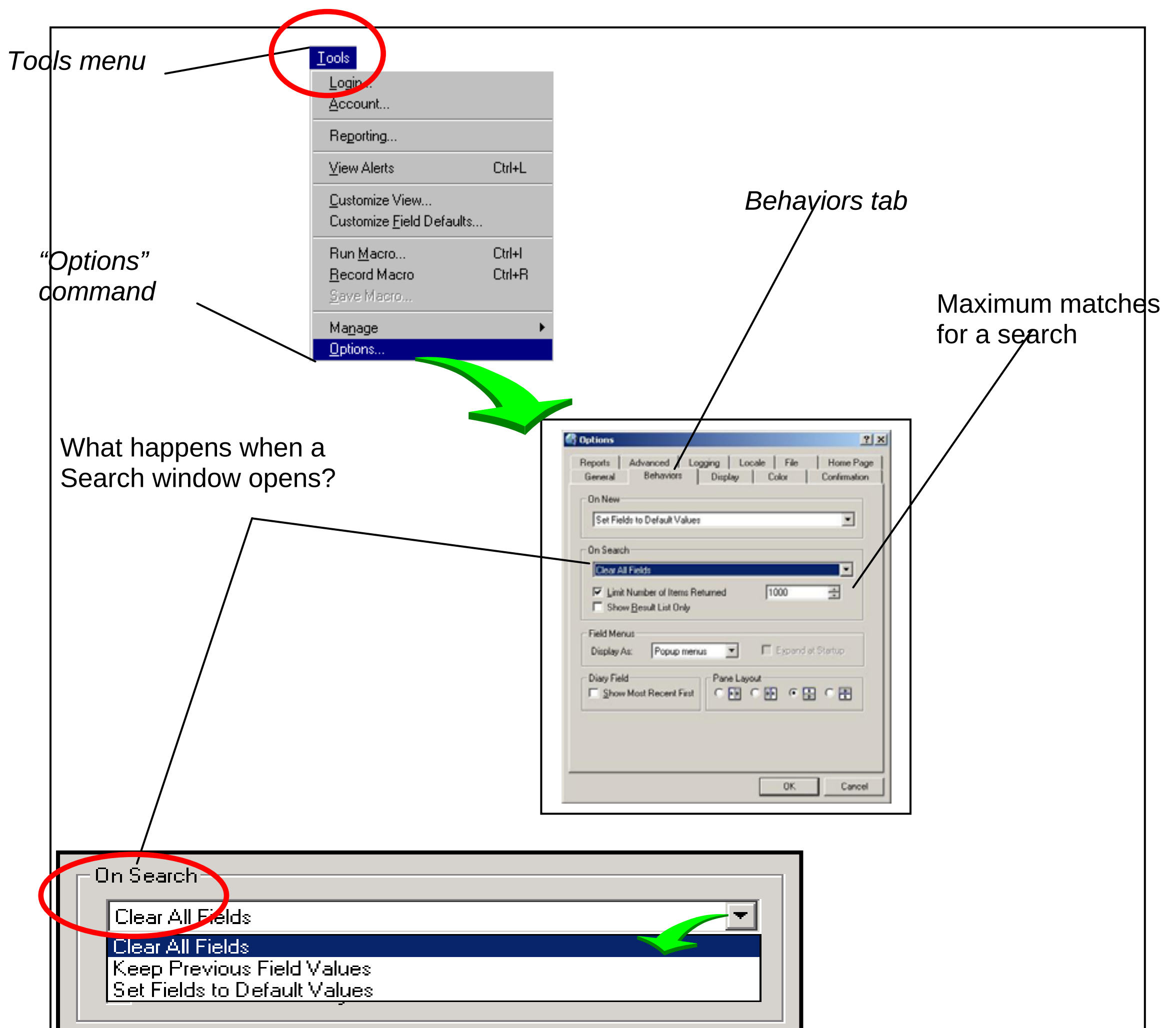
Search Features

Setting Search Options

The Action Request System® (AR System™) provides a number of option settings through the Options dialog box, which is accessed from the Tools menu. Many of the settings should not be changed. However, there are some that should be adjusted.

The figure below illustrates some common options associated with searching:

1. Does the support analyst want all field values to clear?
2. Would the support analyst rather have the previous search criteria display in the window? Or, should all default values display?
3. What record limit does the analyst want on search returns? (This cannot exceed the server setting limit.)



Default value is "Clear All Fields" for "On search" on the Behaviors tab

Setting Search Options

Search by Example

Search by Example simply means filling one or more fields in the Search window with appropriate values that match those cases one is interested in locating.

Some fields require that the value be typed, while others involve selecting a radio button or choosing from a drop-down menu. If multiple fields are used in the search criteria, the logical relationship between them is “AND” which means that *all conditions* must be true before a match is found. To produce more precise searches, include more fields in the search criteria.

Steps: Using the Search by Example Technique

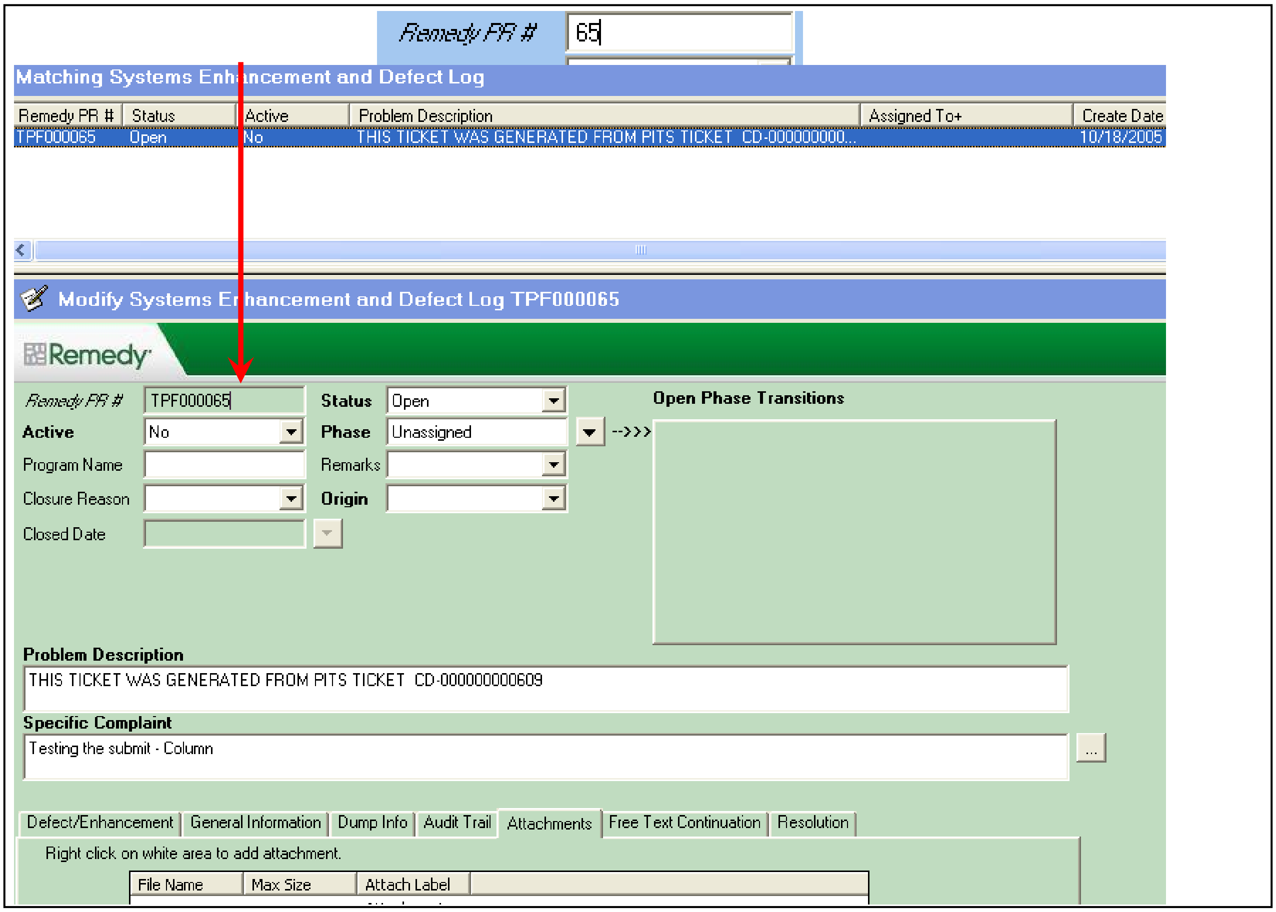
1. Open the Remedy User tool.
2. Open the desired form. *A Search window for the selected form displays.*
3. From the Edit menu, select “Clear All”, or press the CTRL+E keys to clear all data from all fields.
4. Type, or select, an appropriate value for one or more fields in the Search window.
5. Click the Search button. *If records matching the search criteria exist, they display in a search results pane. If there are no matching records, a message displays stating that fact.*

Common Searches

Tickets

To search for a ticket, type in the ticket number in the Remedy PR field. Press enter or the search button to open the ticket.

Note that the Remedy PR number is TPF000065 but that on a search, you only need to put in the number of the ticket **not** the full ticket number.

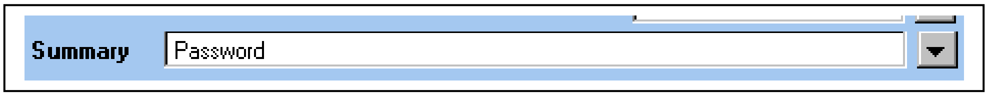


The particular ticket (TPF0000065 in this example) is displayed

Summary Keyword Searches

The contents of the Summary field are searchable by typing a case-sensitive keyword into the Summary field. The wildcard is understood in this search field. For Example: Type **Password** and the system interprets it as **%Password%.** This search returns all tickets that contain the word “Password” in the Summary field.

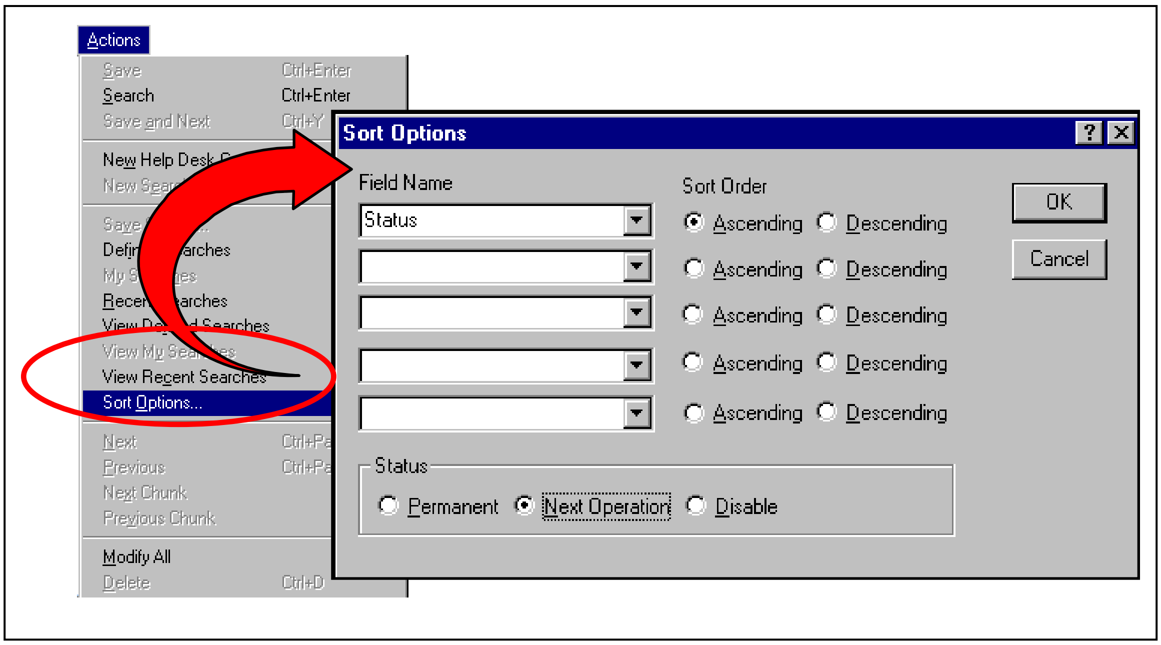
Note: Overall, you should assume that searches are case sensitive. However, a limited number of floating licenses exists which allow case-insensitive searches in both the Summary and Description fields. Whether your search is case sensitive depends on the available of a license when you initiate your search.



Sorting Search Results

Sort Options

The default sort order for all search requests is by the unique ID number assigned by the system to the form (i.e., the Remedy PR). However, using the Sort Options dialog box, you can specify a different sort order prior to executing the search. Up to five fields can be used in either ascending or descending order for each form. It is also possible to specify whether the sort should be permanent or apply only to the next operation. Permanent sorts can be disabled if necessary. They remain in effect until changed. If a sort order is set after a search is executed, the sort applies when the search is refreshed manually or automatically.



The Sort Options Dialog Box

Steps: Setting Sort Options

1. From the Actions menu, select “Sort Options”.
2. In the Sort Options dialog box, select each field to use in the sort, to a maximum of five, from the drop-down lists in the Field Name area.
3. Opposite each field name, select either “Ascending” or “Descending” as the sort order.
4. In the Status area, make an appropriate selection.
5. Click the OK button.

Steps: Removing a Permanent Sort

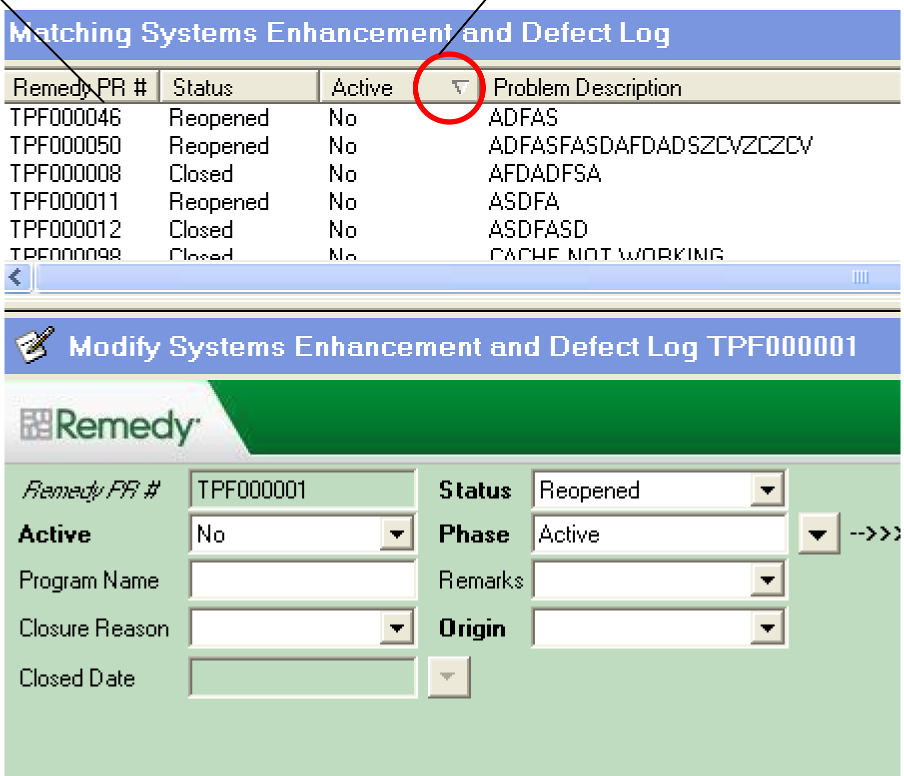
1. From the Actions menu, select “Sort Options”.
2. In the Status area, select “Disable”. *The system returns the sort to the default sort order by Case ID number.*
3. Click the OK button.

Sorting by Column Headers

Another method of sorting a list of records is to simply click the column header label in the list of matching records, after the search has been executed. This technique sorts records in ascending and descending order. Refer to the picture below where clicking the column "Status" sorts the records in ascending order. Clicking it a second time sorts the list in descending order.

Click the column header to resort a list of records

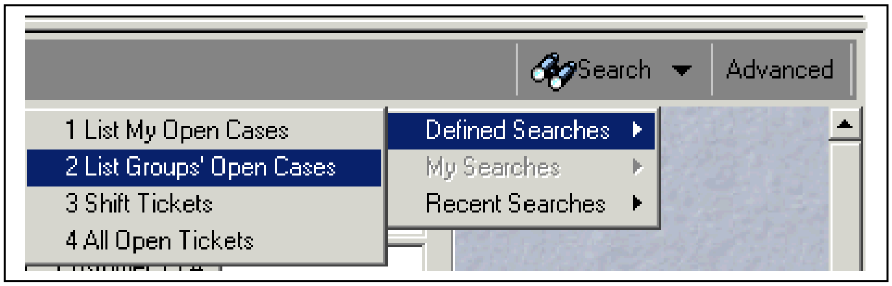
Arrow indicates ascending or descending sort



Sorting By Column Headers

Using Predefined Searches

Predefined searches appear as an item on a menu, a button, an icon on the Toolbar, a table listing records within a form, etc. In order to execute a search request that is predefined, simply locate the name of the search and click it with the mouse; or in the case of a table, refresh it manually to redisplay the search results. The picture below illustrates how to find all open cases for your group (based on your user account's group membership).



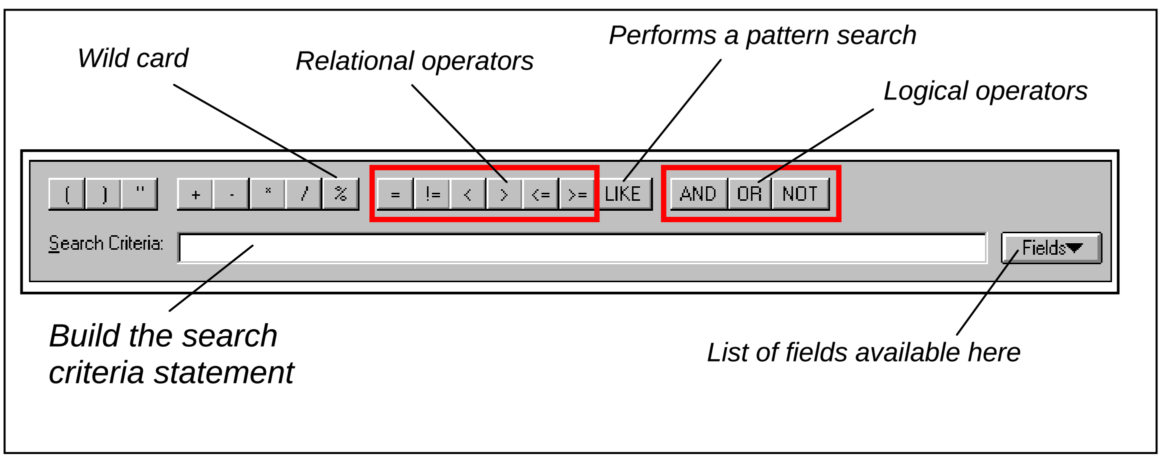
Advanced Search Features

Introduction

Although Search by Example is easy, it does not allow more complex types of searches. Only one value can appear in a field. It is not possible to search for more than one Status, for example, using the Search by Example technique. Although one can include an operator such as a greater-than-or-equal sign (see figure to the left), it is not possible to request records that fall within a specific date range. Thus, there are limitations using the Search by Example technique.

The second search technique—using the Advanced Search bar—provides more flexibility when building search criteria. The Advanced Search is activated by clicking the Advanced button found toward the top right-hand corner of a Search window, or by opening the View menu and selecting "Advanced Search Bar", while a Search window is open. The Advanced Search bar displays at the bottom of a Search window.

One may utilize both the Advanced Search bar and the Search by Example techniques to build effective searches. A logical "AND" joins the search criteria when both Search by Example and the Advanced Search bar techniques are used together.



The Advanced Search Bar

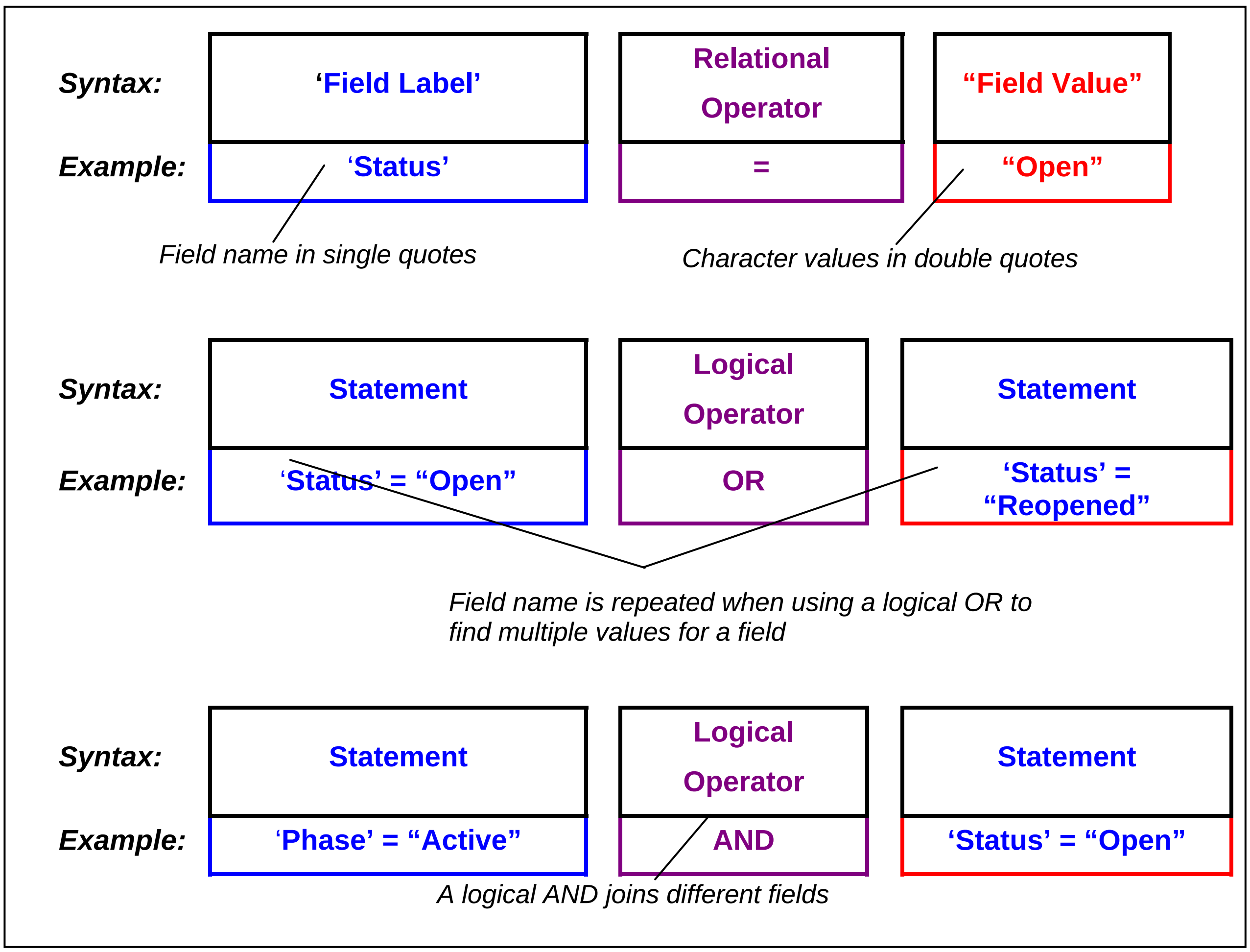
To Access the Advance Search Bar

Within the form search window, the Advance Search Bar can be accessed through the menu bar. Go to the menu bar and select **View → Advance Search Bar**.

Statement Syntax

Search criteria are defined in the Advanced Search bar by writing logical statements. Figure 6.2 shows the syntax for statements, along with a few examples. To build statements in the Advanced Search bar, use the following guidelines:

- Type field names inside single quotation marks (‘Status’).
- Type text character values in double quotation marks (“Open”).
- Type numeric values and operators without any quotation marks (3).
- Character values in double quotation marks are case-sensitive and space-sensitive.
- Repeat the field name when searching for multiple values in a field.

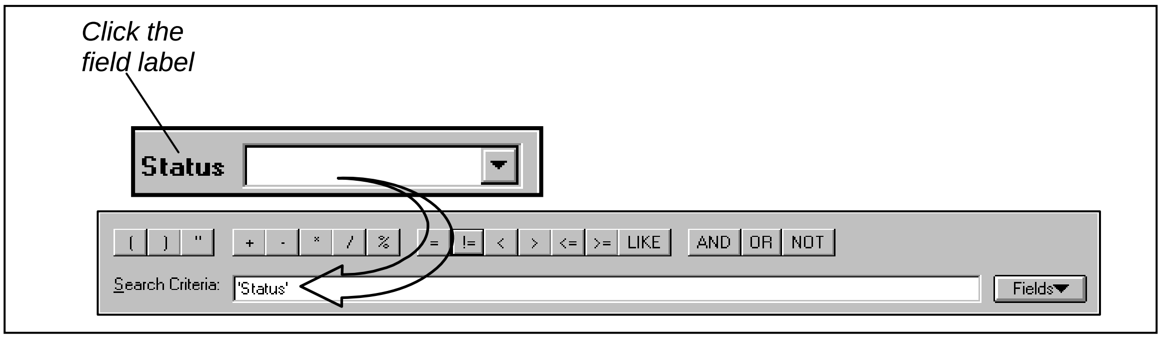


Statement Syntax and Examples for the Advanced Search Bar

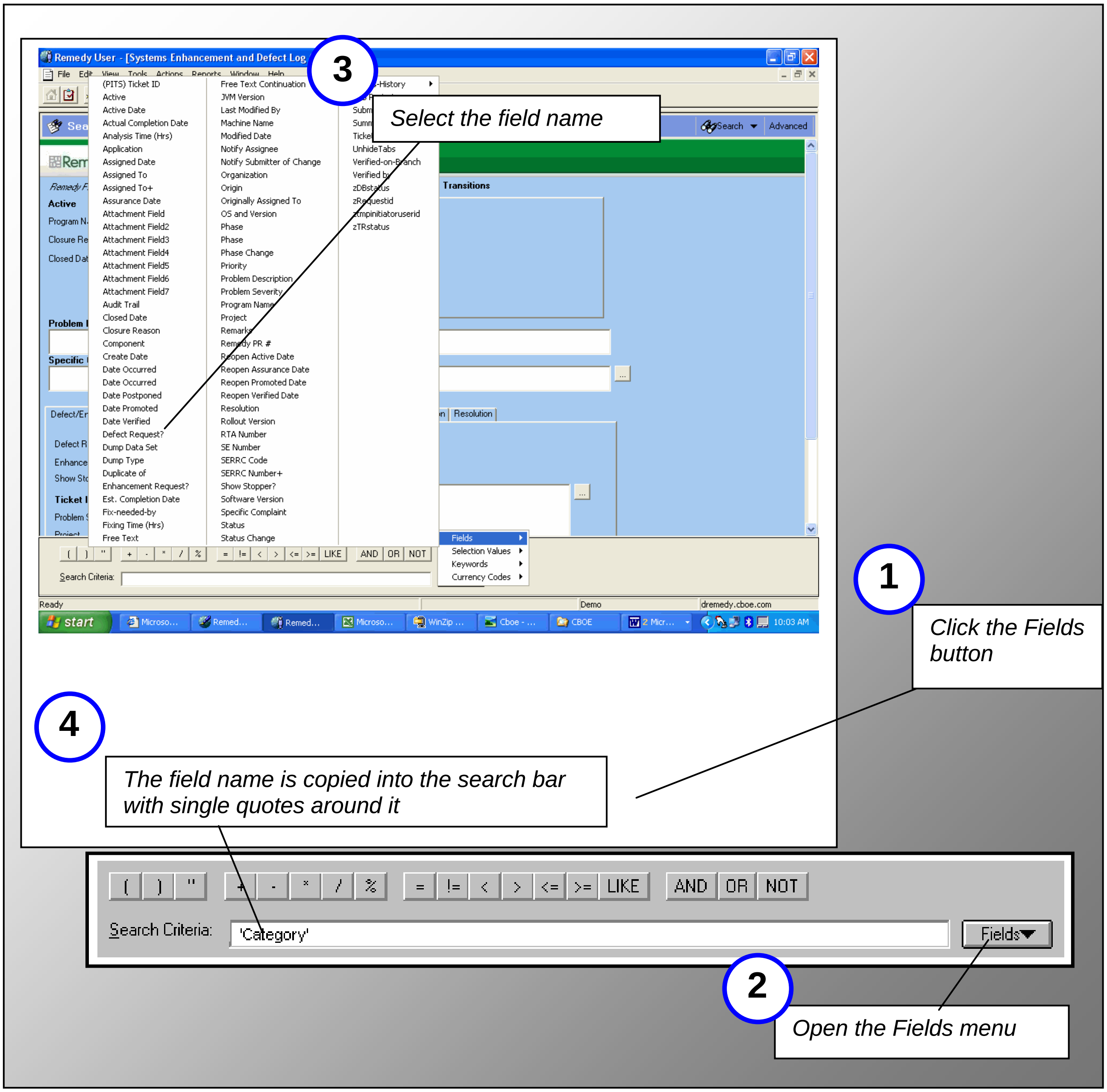
The Field Label

The field label appears within single quotation marks. There are three ways of getting the field name into the Advanced Search bar.

- Click on a field label in the Search window to insert the field name into the Advanced Search bar. The AR System automatically adds the single quotation marks.
- Alternatively, select the field name from the drop-down menu attached to the Fields button.
- Type the field name with single quotes around it.



Copying the Field Label into the Advanced Search Bar from the Form

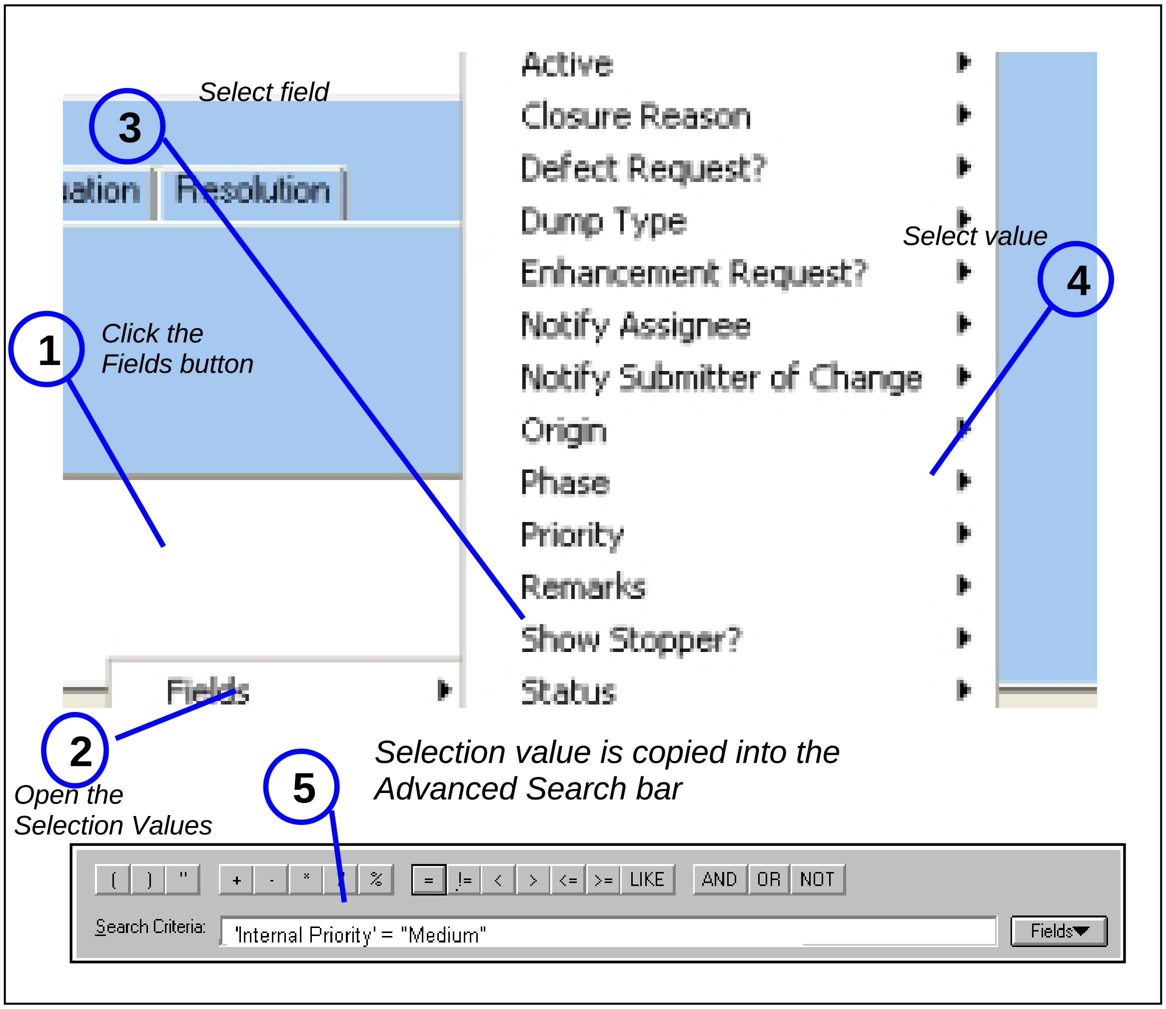


Copying the Field Label into the Advanced Search Bar from the List of Field Names

Field Values

A field value (depending on the field definition) can be text, a number or a keyword. To add the field value to a statement in the Advanced Search bar, use one of the following techniques.

- Type the value. Character values must be enclosed within double quotation marks (for example: "Open").
- If the field is defined as a *selection field*, you may select the value from the list of "Selection Values" on the Fields menu.



Copying a Selection Field Value into the Advanced Search Bar

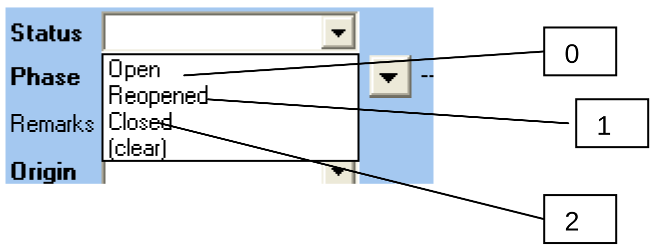
Typically, the field value must be typed into the statement. However, in the case of selection fields, the value can be selected from the menu, as demonstrated in the diagram above.

One advantage of selecting from a menu, whether it is a field name or a selection field value, is that it lessens the chance of typing errors. If field names or selection values are lengthy, it is also easier to select them from a menu, than to remember them.

Selection Field Values

The values in a selection field are assigned a numeric value in the database. This means that relational operators can be used with these fields in a search. Therefore, one has a choice of working with a selection field's character value, or its numeric equivalent.

The numeric assignments for values in a selection field begin with a zero (0). Therefore, to use the Status field in the SEDL as an example: "Open" is zero; "Reopened" is 1; "Closed" as seen below:



In the first two examples below, the result is the same, although the statements are written differently. The first statement searches for all records where the Status is *less than or equal to* (<=) "Reopened"—that is, all records that are not closed. The second statement searches for all records where the Status is *not equal* (!=) to "Closed", which means the same thing. The third statement searches for all records where the Status is *either* "Open" *or* "Reopened".

Example:	'Status' <= 1
Example:	'Status' != 2
Example:	'Status' = "Open" OR 'Status' = "Reopened"

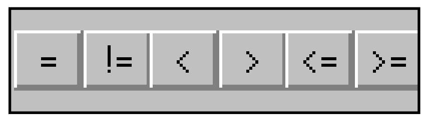
Operators

Operators perform a variety of functions. A *relational operator* defines the relationship between the field and its value. A *logical operator* defines a logical operation that is performed between two or more statements. An *arithmetic operator* performs a mathematical operation, and the LIKE operator performs a pattern search. These operators are explained later in this chapter. In the Advanced Search Bar, operators can be typed, or they can be selected from the various buttons located on the Advanced Search bar. Relational operators can also be typed into fields when using the Search by Example search technique.

Relational Operators

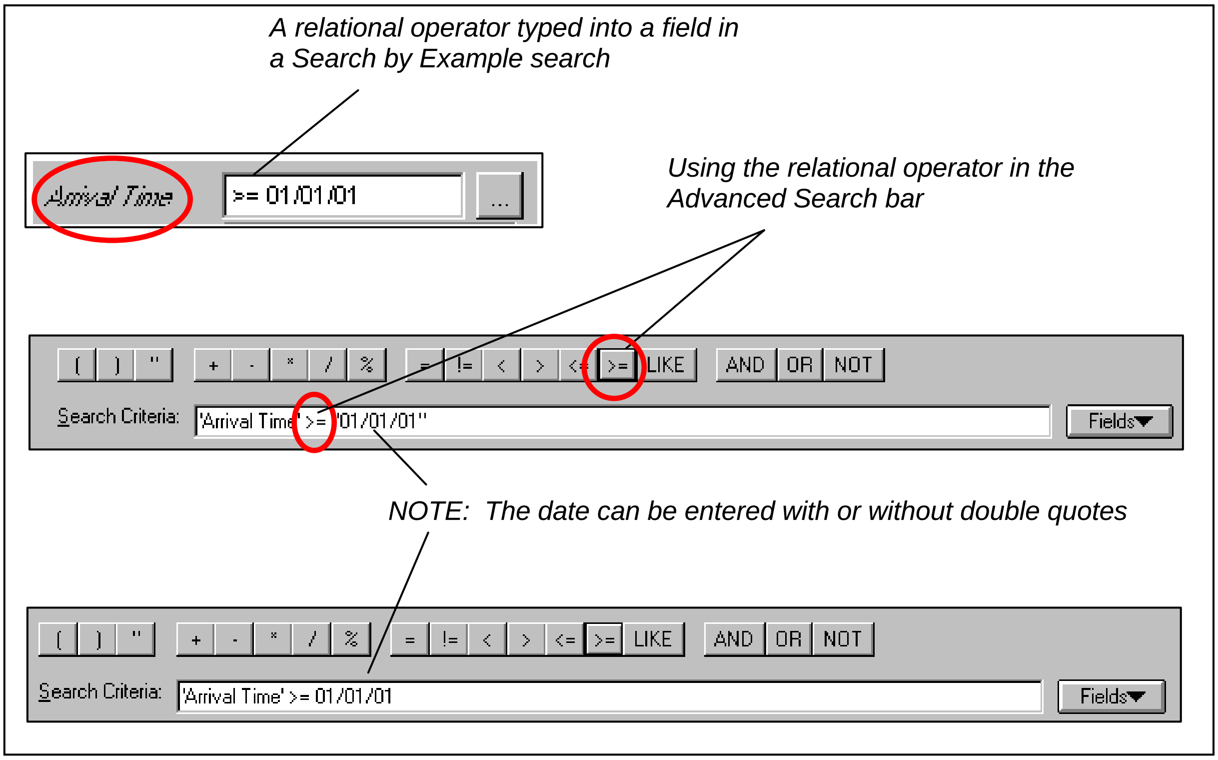
Relational operators are especially useful in non-text fields (such as date and time fields). To search for all requests created after a certain date, use the greater than (>) relational operator and specify a date and time format. For example, > "May 6, 2001" in the Arrival Time field finds all requests submitted after May 5, 2001. Leaving out the time defaults the search criteria to 0:00:00, the start of the day.

A relational operator can be typed, with a space on either side of it, or its button in the Advanced Search bar can be clicked to add it to a statement. The relational operators can be used in both Search by Example and Advanced Search bar searches.



Relational Operators	Descriptions	Examples
<	Match contents that are less than the value.	In a date field: < Dec 15, 2000
>	Match contents that are greater than the value.	In a date field: > Jan 31, 00
!=	Match contents that are not equal to the value.	In the Created By field: != bcrocker
<=	Match contents that are less than or equal to the value.	In a date field: <= May 15, 2001
>=	Match contents that are greater than or equal to the value.	In a date field: >= May 31, 01
=	Match contents that are equal to the value.	In the Created By field: = bcrocker

Relational Operators



Working with Relational Operators

The LIKE Operator

The LIKE operator performs a pattern search, and is used only in the Advanced Search bar. It is useful when searching for text in character and diary fields, and is often used in conjunction with a wildcard such as the percent sign (%).

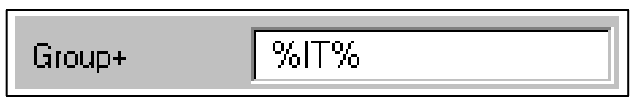
Like Operator in the Advance Tool Bar

In the above example, one is searching for any records where the Group+ field has some text that resembles “IT”. The percent signs at either end of “IT” indicate that the system should search for all characters that appear before or after the text “IT”. Therefore, the system will find records where Group+ contains “IT” or “IT-New Hire”.

In the example below, the system searches for values in the Ticket Initiator field where the name contains the characters “Swe”. Remember that the search is case sensitive.

Example:	**‘Ticket Initiator’ LIKE “%Swe%”**

If one wants to execute a similar search using the Search by Example technique, the operator cannot be used as part of the search because it does not work when typed in a field on a form. Instead, one simply types the expression with a percent sign at each end, as seen is this example.



Logical Operators

Logical operators are used *only* in the Advanced Search bar. Where expressions are joined by AND, *both conditions* on either side of the operator *must be true* before the system can resolve the statement and find the records that match the specified criteria. In the case of expressions joined by OR, *either expression can be true* in order for the system to resolve the statement and find the records that match the search criteria.

Logical Operators	Descriptions
AND &&	When a logical AND joins two conditions, the result is true only if both conditions are true. *Example:* ‘Status’ = “Work In Progress” AND ‘Category’ = “Hardware”
OR ||	When a logical OR joins two conditions, the result is true if either of the conditions is true. *Example:* ‘Priority’ = “Low” OR ‘Priority’ = “Medium”
NOT !	Negates the condition that follows. If the condition is true, the result is false. *Example:* NOT ‘Status’ = “Closed”

Logical Operators

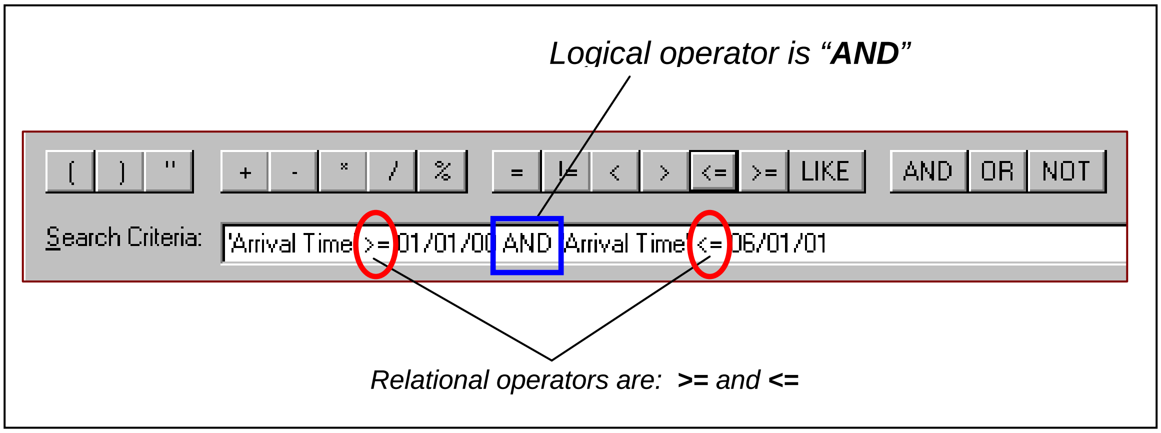
The logical OR operator cannot be used in the Search by Example technique; it can be used only in the Advanced Search bar. In the following example, the system searches for all requests where the Status is “Open” or “Reopened”.

Example: **‘Status’ = “Open” OR ‘Status’ = “Reopened”**

Handling a Date Range

To indicate a date range, use the statement in the following example. Notice that the start and end dates are joined by a logical AND operator. Observe closely the two operators that are placed before the dates.

Example:	**‘Arrival Time’ >= “Jan 15, 01” AND ‘Arrival Time’ <= “Jan 30, 01”**



Handling Date Ranges

In the above example, the system searches for all records with an Arrival Time that falls between January 1, 2000 and June 1, 2001. One must remember that when a time is ***not*** specified, the system assumes midnight, the beginning of the day. Therefore, in this example, records for June 1st would not be included in the search results list, if they existed in the database.

Arithmetic Operators

The arithmetic operators are the same for all calculations: a plus (+) sign for addition; a minus (-) sign for subtraction; a diagonal (/) for division and an asterisk (*) for multiplication.

Operators	Descriptions
+	• Adds two integers or real values. • Adds an integer interval to a time value. • Concatenates two character strings. • *Example:* 'Arrival Time' > $DATE$ + (8 * 60 * 60) finds all records that were submitted after 8:00 AM today. "8 * 60 * 60" is the number of seconds in eight hours.
-	• Subtracts two integer or real values. • Subtracts two time values (resulting in an integer). • Subtracts an integer interval from a time value. • *Example:* 'Arrival Time' > $DATE$ - (7 * 24 * 60 * 60) finds all records that were submitted within the last week. "7 * 24 * 60 * 60" is the number of seconds in one week.
*	• Multiplies two integer or real values.
/	• Divides two integer or real values.

Arithmetic Operators

Operator Precedence

When multiple operators are used in a search statement, they are executed in a specified order of precedence. If there is any doubt as to how the system will interpret a complex statement, be safe, and use parentheses to indicate which operations belong together. Statements inside parentheses are executed first.

In the example below, the parentheses group the date range so that there is no confusion as to what belongs together. The logical operator, AND, between the date range and the remaining part of the statement indicates that a record must meet both conditions before it is a valid match—that is, the Status must be "Reopened" *and* the Arrival Time must fall within the specified range.

Example:

AND

('Arrival Time' >= "Feb 10, 01" AND 'Arrival Time' <= "Feb 20, 01") AND 'Status' = "Reopened"

Working with Parentheses

Order of Precedence	Description
1	( ) parentheses
2	! NOT negative
3	* / multiplication and division
4	+ - addition and subtraction
5	< <= > >= = != less than; less than or equal to; greater than; greater than or equal to; equals; not equal to
6	AND
7	OR

Order of Precedence for Operators

Notice that an AND executes before an OR. Be careful using these operators. Ensure that the results expected are indeed the results one gets from a search. The expression can be interpreted two ways, depending on whether or not parentheses are used.

Examples:

1

‘Phase’ = “Active” **OR** ‘Phase’ = “Assurance” **AND** Priority = “Medium”

2

(‘Phase’ = “Active” **OR** ‘Phase’ = “Assurance”**)** **AND** Priority = “Medium”

Parentheses added

Interpreting an Expression Correctly

In the first example, the system searches ***first*** for records where the Phase is “Active” and the Priority is “Medium”. ***Then***, it looks for “Assurance” records—***all*** records for “Assurance”.

In the second example, however, the system searches for ***all*** “Active” ***and*** “Assurance” records that have a Priority of “Medium”. This second example is a very different search from the first example.

Working with Wild Cards

The most frequently used wild card is probably the percent sign (%). It generates a pattern search to match any string of zero (0) or more characters. For example, **T%son** matches Thompson, Tompson, Thornson or Terry Johnson. The next Table explains other wild card characters that can help to further refine search criteria. When working with wild cards in the Advanced Search bar, the LIKE operator must be used, otherwise the system interprets the wild card(s) as literal characters (refer to the section entitled "The LIKE Operator", which appears earlier in this chapter, for examples).

Wild Cards	Descriptions	Examples
%	Use the percent sign to match any string of 0 or more characters.	**T%son** matches Thompson, Tompson, Thornson
_	Use the underscore to match any single character.	**P_ _l** matches Paul, Phil, Pool
-	Use the hyphen to indicate a range. It is used only within brackets.	**[g-l]** matches all letters from "g" through to "l"
[ ]	Use square brackets to match any single character within a specified range or set. There must be an open and close bracket. Not all databases support the use of these square brackets.	**[g-l]** matches all letters from "g" through to "l", whereas [g,h,j,k] specifically matches a set of characters **-** "g", "h", "j' or "k"
[^]	Use this wild card to match any single character **not** within a specified range or set. There must be an open and close bracket.	**[^g-l]** matches all characters except those from "g" through to "l", whereas [^g,h,j,k] matches all characters except "g", "h", "j" and "k"

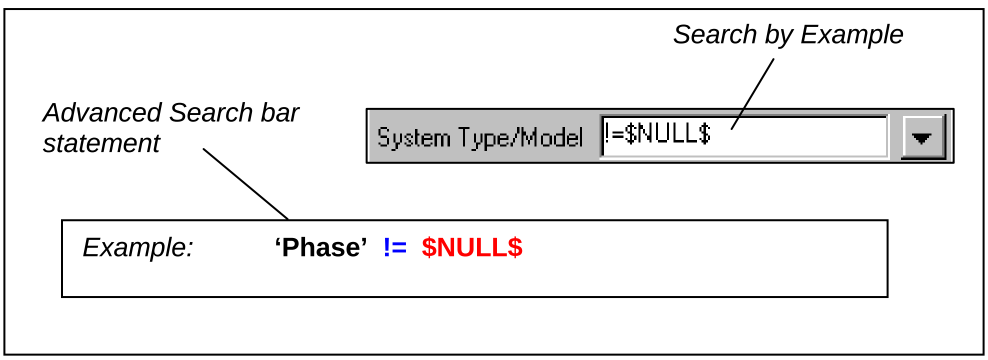
Working with Wild Cards

Using Keywords in a Search

Keywords can be used in a Search by Example or in the Advanced Search bar. They can also be typed wherever it is possible to type character values. Table 6.6 provides a list of typical keywords used in searching and their corresponding values. All keywords must be spelled in capital letters with a dollar sign ($) at the beginning and end of the word. They ***do not*** appear inside quotation marks.

Keywords	Descriptions
$DATE$	Current date. In a date/time field, the time defaults to midnight, at the beginning of the day
$NULL$	A null value.
$TIME$	Current time. In a date/time field, the date defaults to the current date.
$TIMESTAMP$	Current date and time.
$USER$	Name of the user currently logged into the AR System
$WEEKDAY$	The current day of the week.

Keyword Examples



Using a Keyword for the Search by Example and the Advanced Search Bar Techniques

In the first example above, the operator "!=" means "not equal to"; therefore, the expression "!=$NULL$" means "not equal to null"—in other words, the system will locate all records where the System Type/Model field has a value in it.

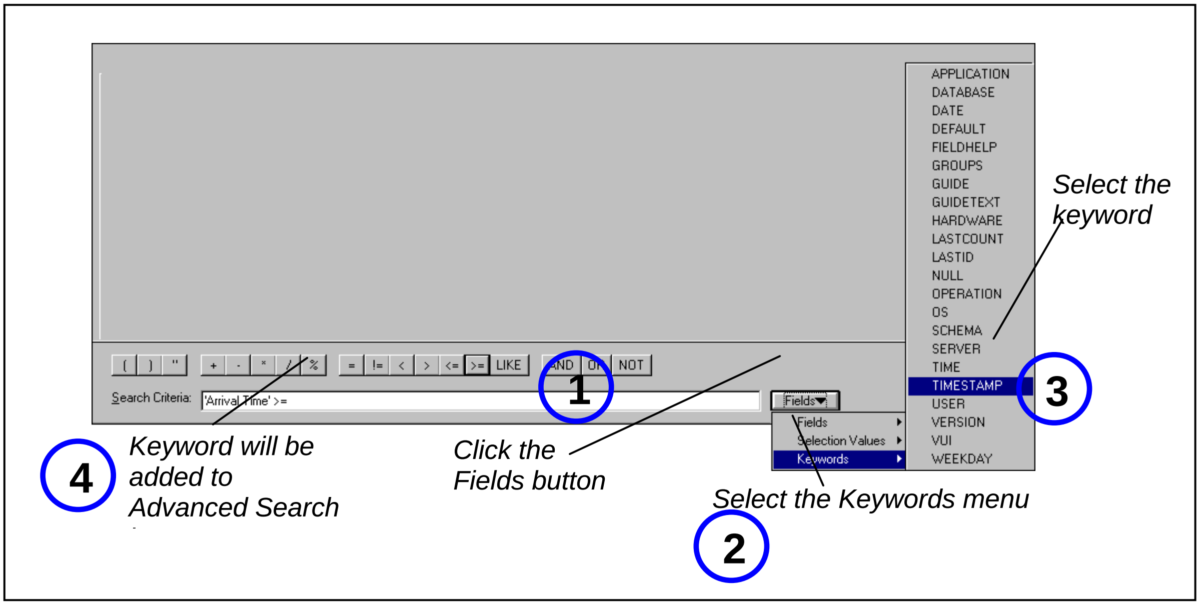
Example:	**'Submitted By' = $USER$**

The second example comes from the Advanced Search bar. The result of this search displays all requests submitted by the person currently logged into the AR System.

Example:	**'Arrival Time' >= $TIMESTAMP$ - (60*15)**

The last example illustrates searching for all requests that have been submitted to the database within the last 15 minutes.

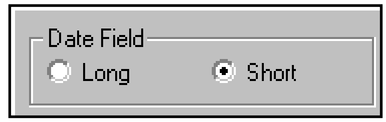
Selecting Keywords
The easiest way to get a keyword into an Advanced Search bar is to select it from the Fields menu.



Selecting a Keyword from the Fields Menu

Handling Date and Time Values

The table below illustrates how the date and time are entered into date/time fields in the AR System. Although the date must always be formatted as ***month-day-year***, there are a variety of options available for that format. When only a date is provided, the system assumes the time is midnight (at the beginning of the day—00:00:00). Once a form is saved, reopening it causes the date to display according to the format specified on the Behaviors tab of the Options window.



Description	Examples
Enter the date first when entering date and time.	April 9, 2001 10:25:36 AM
Enter the month as text or numbers.	April Apr 04 4
Enter the month in long or abbreviated form.	April 9, 2001 Apr 09 2001
The day and year can be separated with/without a comma.	April 9, 2001 Apr 09 2001
Enter the year as two or four digits (optional).	04/22/2001 04/22/01
To specify a time, provide hours. Minutes and seconds are optional. If minutes/seconds are left blank, they are assumed to be 0. If no time is specified, the system assumes the time is midnight (at the beginning of the day) — 00:00:00.	15:25:36 10:45 AM
Enter the time in either 24- or 12-hour format. Use AM/PM with the 12-hour format.	15:25:36 3:25:36 PM

Formatting the Date and Time

Working with Absolute Time

Time is expressed in the AR System either in *absolute* or *relative* terms. Absolute date/time is expressed as an explicit value.

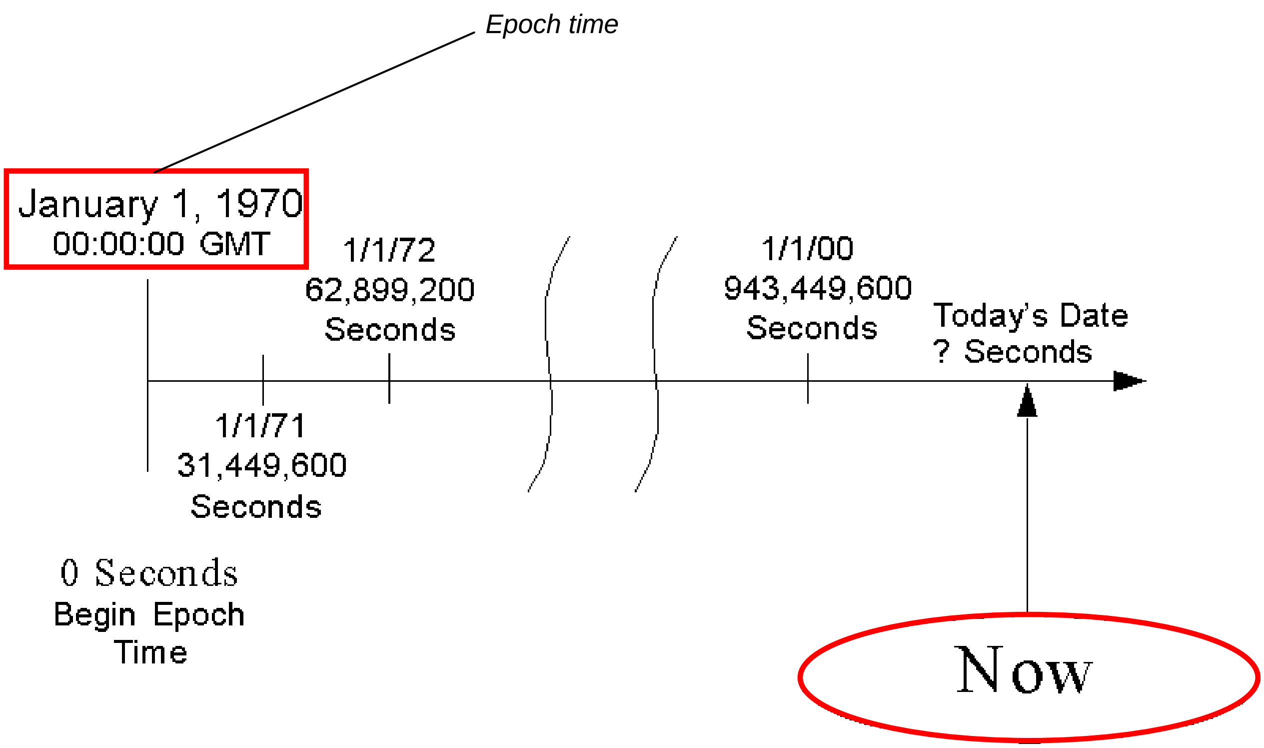
Examples: 'Create Date' >= "May 1, 2001"

'Create Date' >= "May 1, 2001 10:00:00 AM"

Understanding "Epoch" Time

Time in the AR System is based on the number of seconds since January 1st, 1970 at 00:00:00 Greenwich Mean Time (GMT). This date/time is referred to as *Epoch* time. Any moment in time can be captured as the number of seconds since the beginning of Epoch time. In the figure below shows a timeline, starting at the beginning of Epoch time. Each additional year represents approximately 31.5 million seconds.

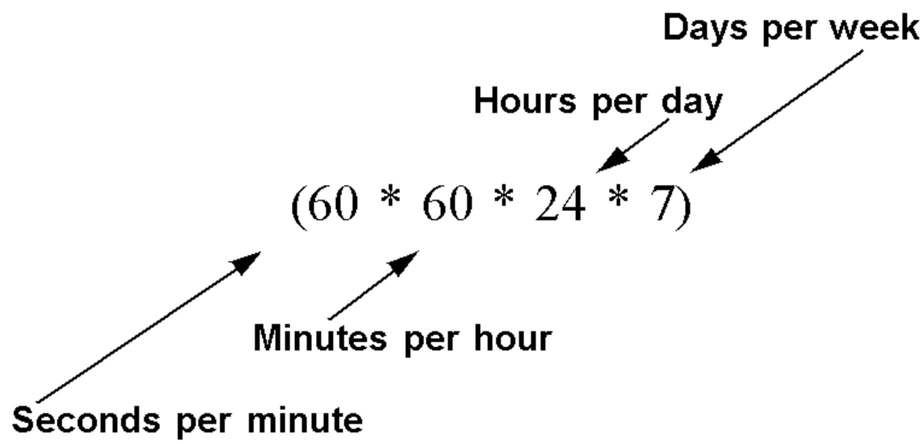
It is not possible to calculate differences between absolute date/time values. The AR System, therefore, translates any absolute date/time value into a specific numeric equivalent—in seconds, since Epoch time. Thus, comparisons can be made between date/time values, and calculations can be carried out on these date/time values.



Understanding "Epoch" Time

Working with Relative Time

When it is not appropriate to enter hard-coded dates and times (that is, specific dates and times), one can work with *relative* time. Like Epoch time, relative time is calculated as a number of seconds. In the figure below shows the format required for calculating relative time.

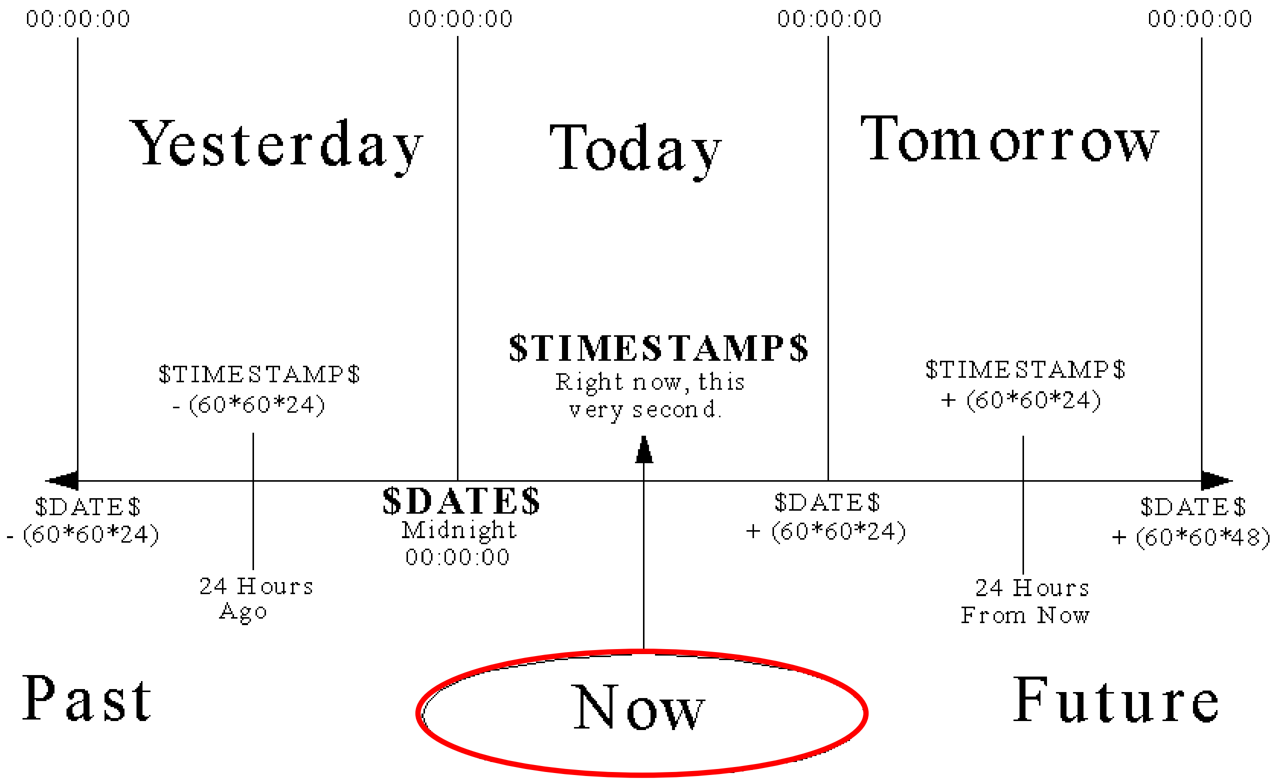


Calculating Relative Time

The above example calculates one week in relative time. The total number of seconds in one week, if this calculation is executed, equals 604,800. One can carry out mathematical calculations using a number like this one. One cannot carry out a calculation using absolute date/time values. Hence, there is the need to understand how to handle relative time in the AR System.

Using absolute time, one can create a successful search statement that looks for all records between two dates. However, if one wants all records created within the last 48 hours, for example, one must use relative time to build the search statement. Refer to Figure 6.16 later in this section for an example of the difference between using absolute and relative time in a search statement.

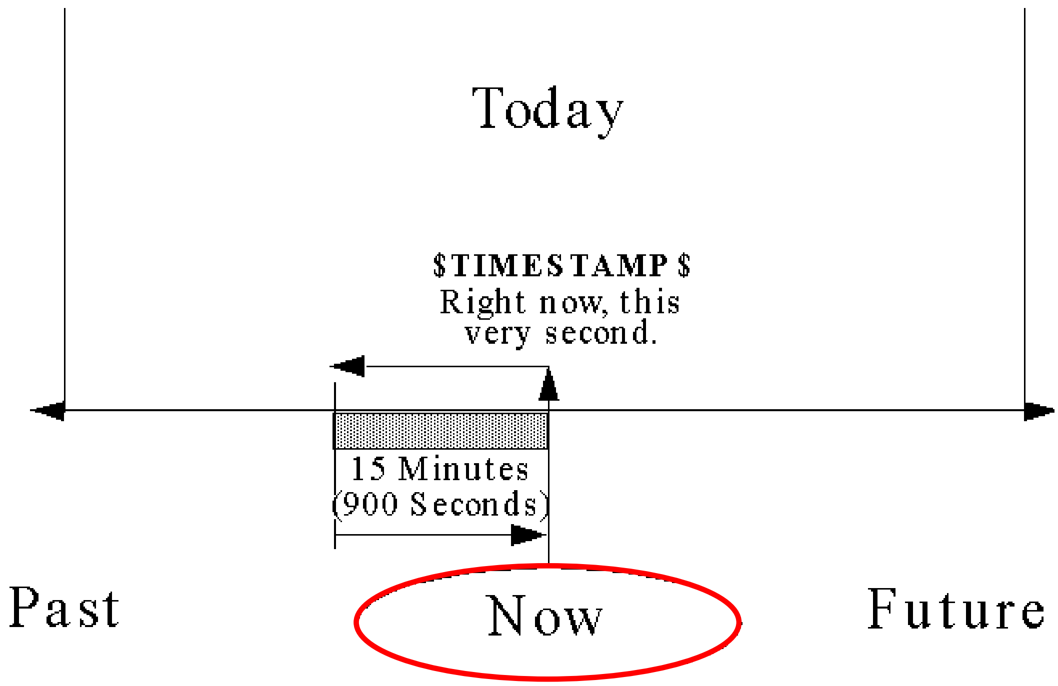
Combining Relative Time with Keywords
The maximum flexibility for defining effective time-based search statements that are never obsolete comes from combining relative time with keywords. The figure below illustrates using keywords to extract the current date/time, and then adding or subtracting time in seconds to determine particular points in time, such as: the last 15 minutes; the last 48 hours; the previous 2 weeks, etc.



Combining Keywords with Relative Time to Calculate Periods of Time

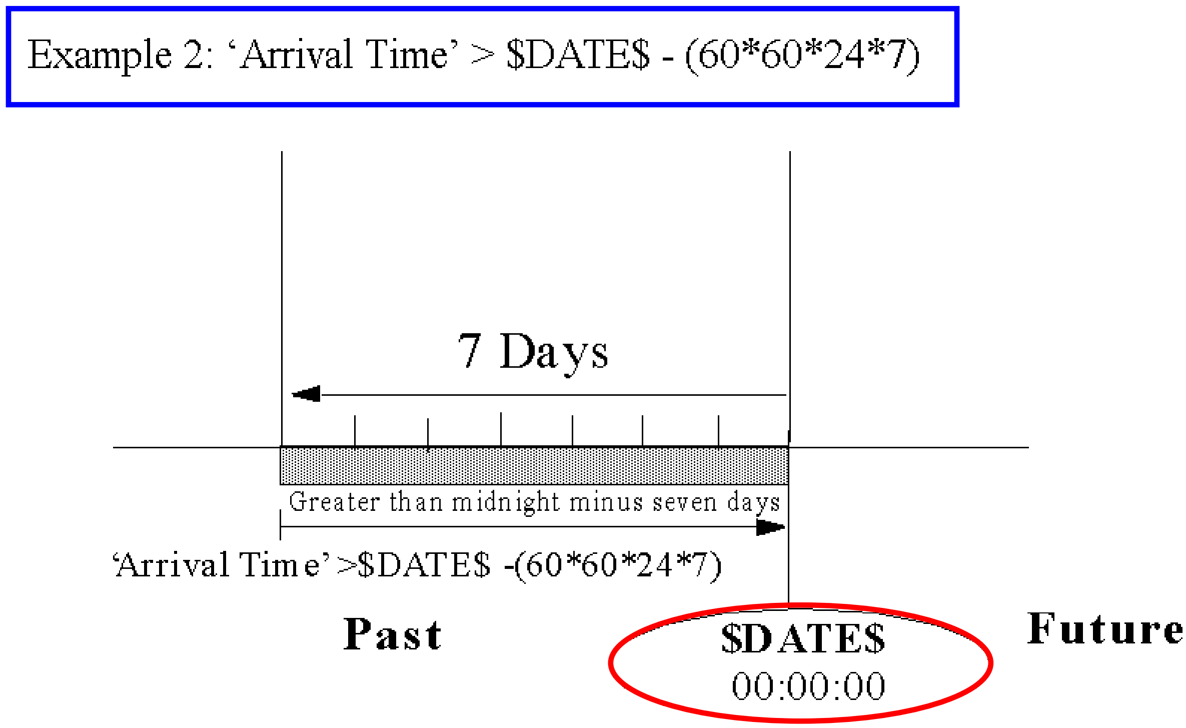
Using Keywords and Relative Time in Search Statements
In the example in the figure below, the search statement looks for all records that arrived within the last 15 minutes. The request is expressed by saying that the Arrival Time must be greater than the current date/time ($TIMESTAMP$) minus the number of seconds in 15 minutes (60*15).

Example 1: 'Arrival Time'> $TIMESTAMP$ - (60*15)



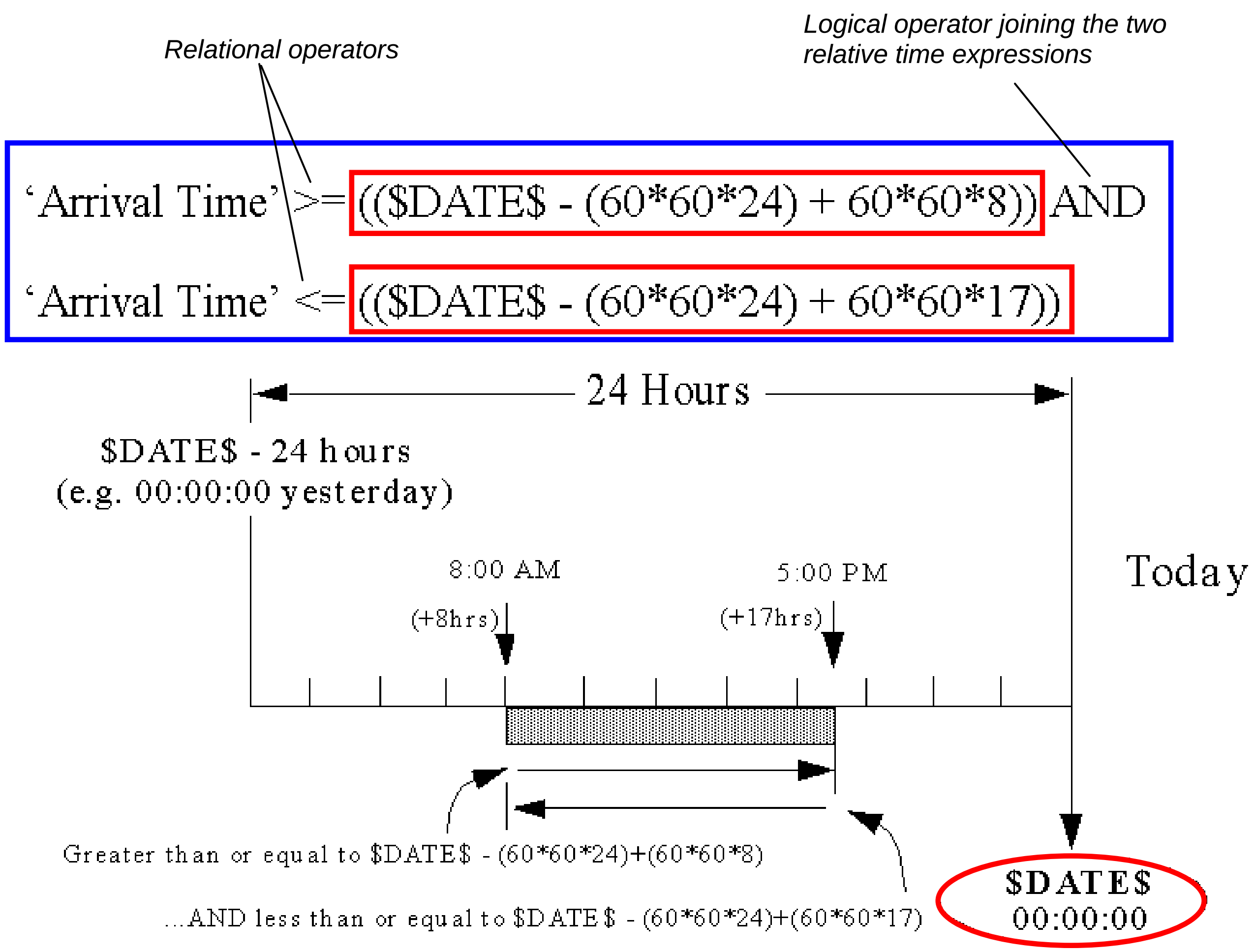
Example 1: Using Keywords and Relative Time in a Search

In the figure below, the search statement looks for all records that arrived within the last week. The request is expressed by saying that the Arrival Time must be greater than today's date ($DATE$) minus the number of seconds in one week (60*60*24*7). The number of seconds in one week is expressed as the number of seconds in a minute, multiplied by the number of minutes in an hour, times the number of hours in a day, times the number of days in a week, or seven days.



Example 2: Using Keywords and Relative Time in a Search

In the figure below, the search statement looks for all records that arrived yesterday, between 8:00 AM and 5:00 PM. The request is expressed by saying that the Arrival Time is between 24 less than today's date ($DATE$ at midnight (00:00:00)) plus 8 hours (8:00 AM), and 24 hours less than $DATE$ plus 17 hours (5:00 PM).

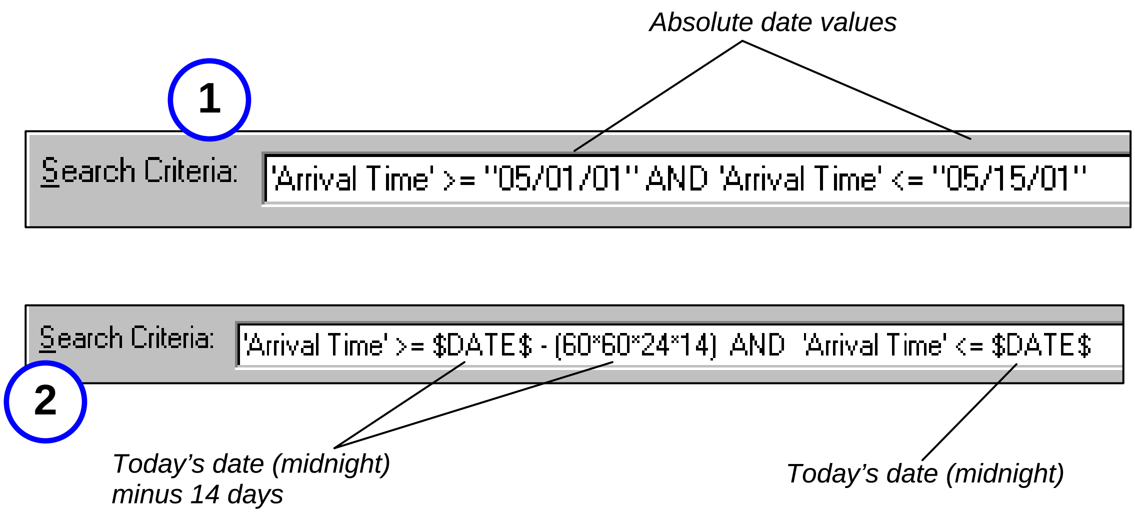


Example 3: Using Keywords and Relative Time in a Search

Finally, the figure below illustrates the difference between search statements that look for records that fall within a specified date range, when the dates are absolute values versus using keywords and relative time.

In the first example, the search statement looks for records that fall within a two-week period, specifically between May 1st and May 15th. If this search were executed on May 15th, all tickets created within the last two weeks would be found.

The drawback with this technique is that one is locked into the same two-week period because the dates are hard-coded, and will always remain the same, whenever the search might be re-executed. Therefore, it lacks flexibility to search for the last two weeks, regardless of when the search is executed. There is a way around this dilemma by developing a *variable parameter macro* whereby one may redefine the absolute dates each time the macro is executed. This macro technique is explained later in this chapter.



Example 4: Using Keywords and Relative Time versus Absolute Date/Time Values in a Search Statement

The second example illustrates a more flexible approach to searching for records within a specified period of time—a time period that changes with each execution of the search. It subtracts 14 days from today's date to obtain the first date in the date range. The last date in the date range is today's date. Therefore, when executed, this statement always obtains records from the previous two weeks, regardless of when it is run. Both date expressions, by default, assume a time of midnight at the beginning of the day (00:00:00).

Steps: Using the Advance Search Bar

1. Open the User Tool.
2. Open the Help Desk Case form in a Search window. *A Search window for the Help Desk Case form displays.*
3. From the Edit menu, select “Clear All”, or press the CTRL+E keys. *All data clear from all fields*.
4. Click the Advanced button. *The Advanced Search bar displays at the bottom of the window*.
5. Using the techniques described in this chapter, build the desired search statement(s), including appropriate operators and keywords, as necessary.
6. Click the Search button. *The system executes the search. If matching records are found in the database, they are listed in the Search Results pane of a Modify window.*

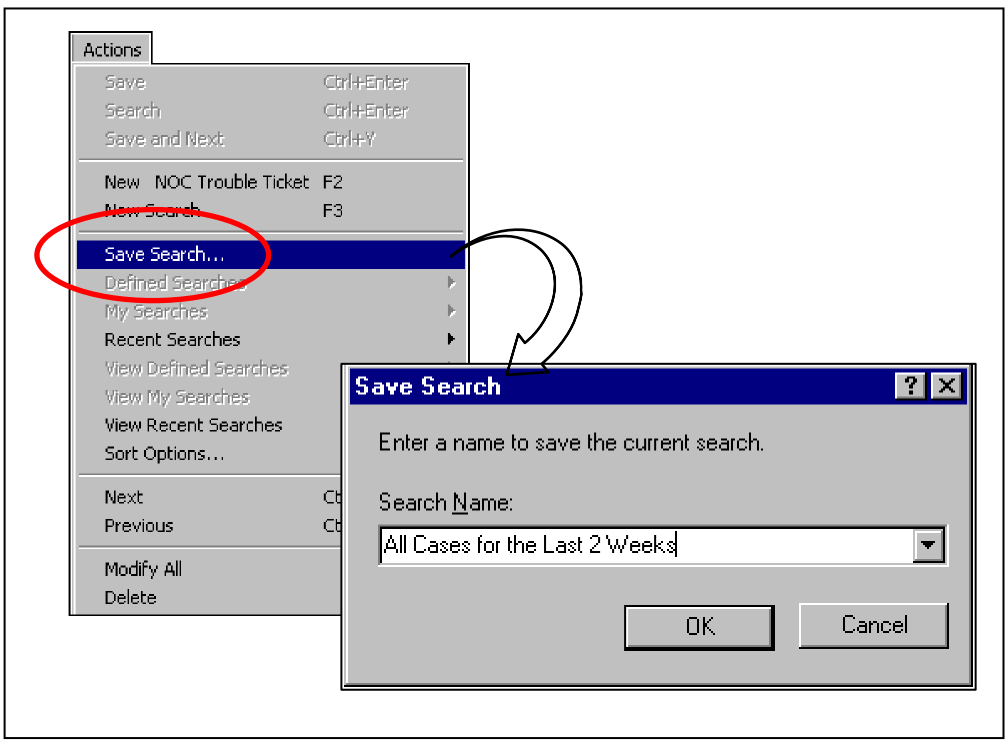
Search Criteria

Saving Search Criteria

Having executed a search request, one may decide to save the search for re-execution in the future. The next Figure illustrates how to save search criteria. The form upon which the search is executed must be open when the search is saved.

Steps: Saving Search Criteria

1. While the search results are displayed on the monitor screen, open the Actions menu found on the Menu bar.
2. Select "Save Search".
3. Type a name for the search in the Save search dialog box.
4. Click the OK button, or press the ENTER key. *The system saves the search criteria, using the assigned name.*



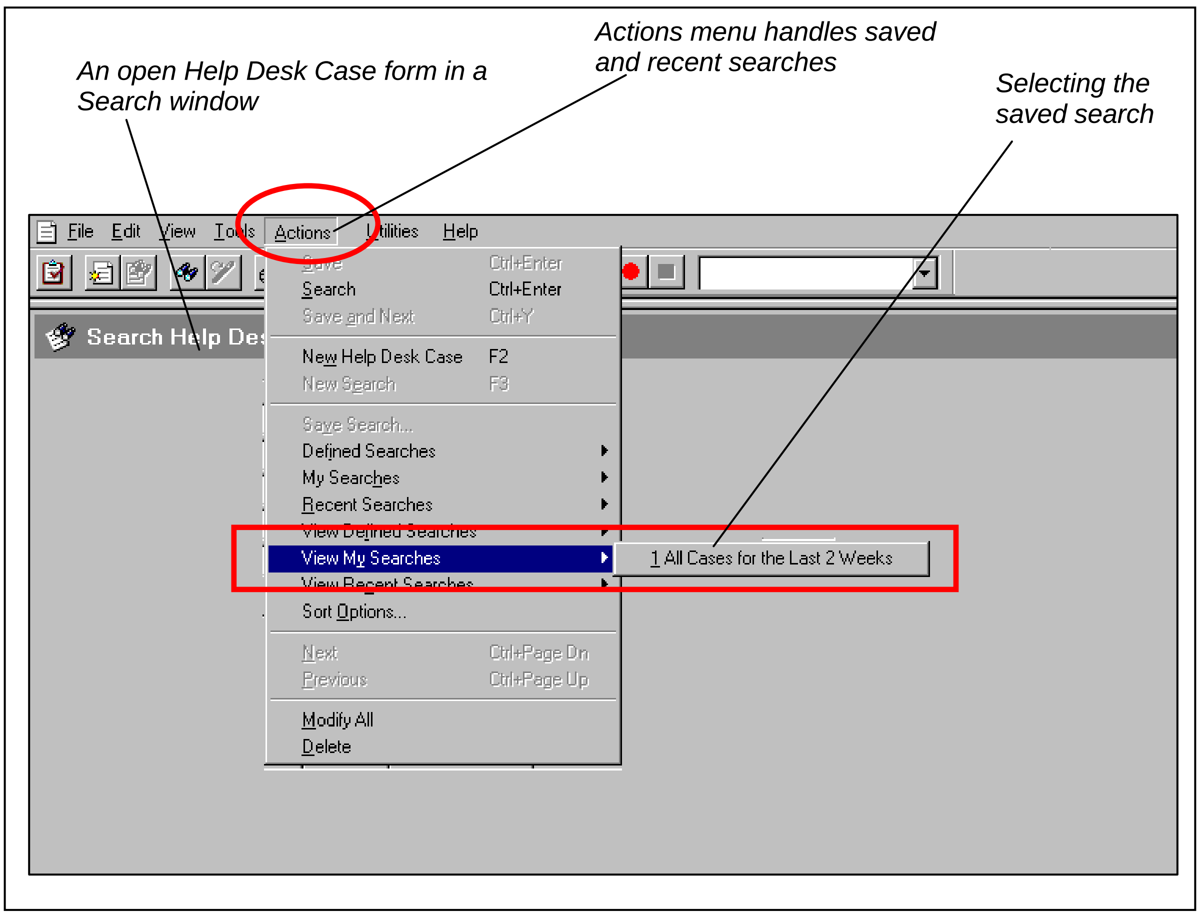
Saving Search Criteria

Working with a Saved Search

In order to re-execute the same search at any time in the future, one must first open the form for which the search was originally built. The next Figure demonstrates how to re-execute the saved search.

Steps: Re-executing the Saved Search

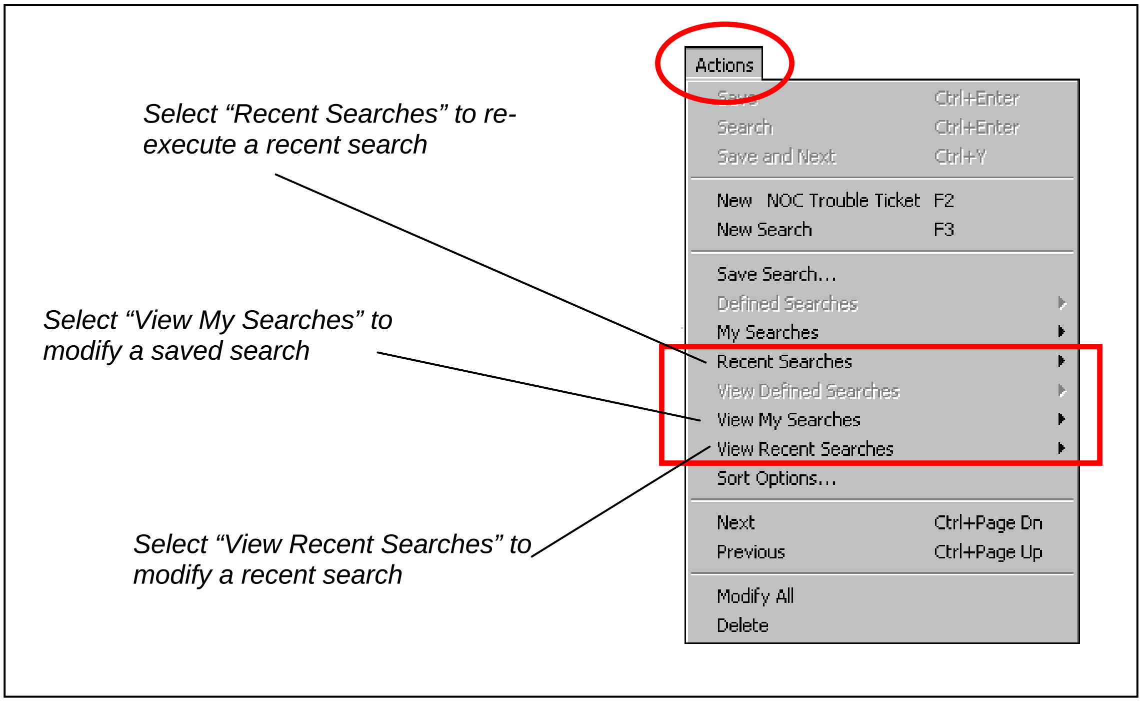
1. Open the form for which the search was created.
2. From the Actions menu, select “My Searches” or “View My Searches”.
3. Select the name of the desired search. *The system executes the search, using the predetermined criteria, if the name is selected from “My Searches”. If it was selected from “View My Searches”, the search criteria display; then one may make modifications, if desired, before re-executing the search.*



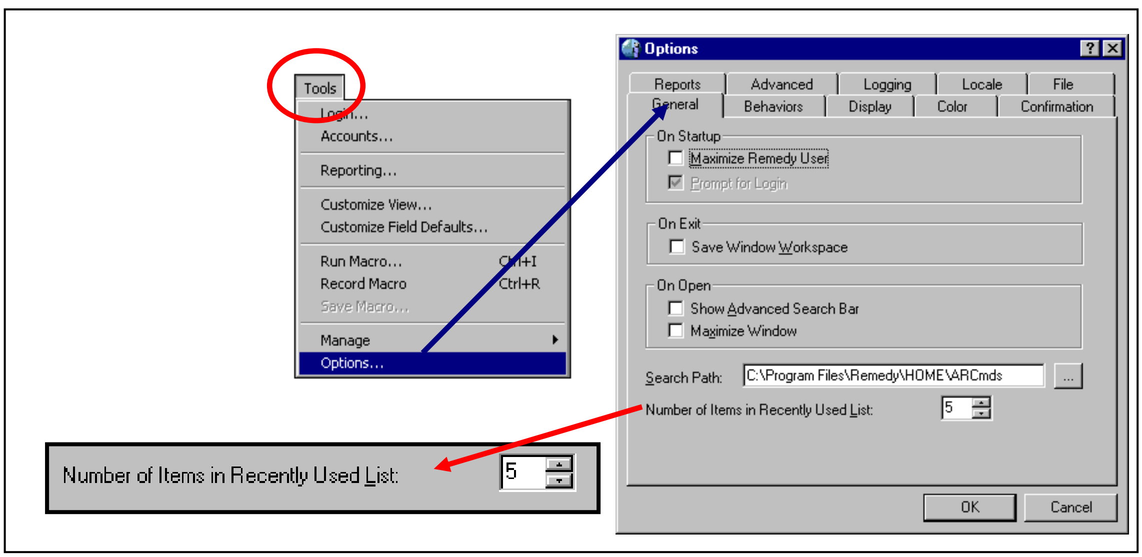
Previewing a Saved Search

Working with Recent Search Requests

The AR System remembers all recent searches. How many searches are listed on the recent menus, which form some of the selections on the Actions menu, is determined by an option set in the Options dialog box. See the figures below.



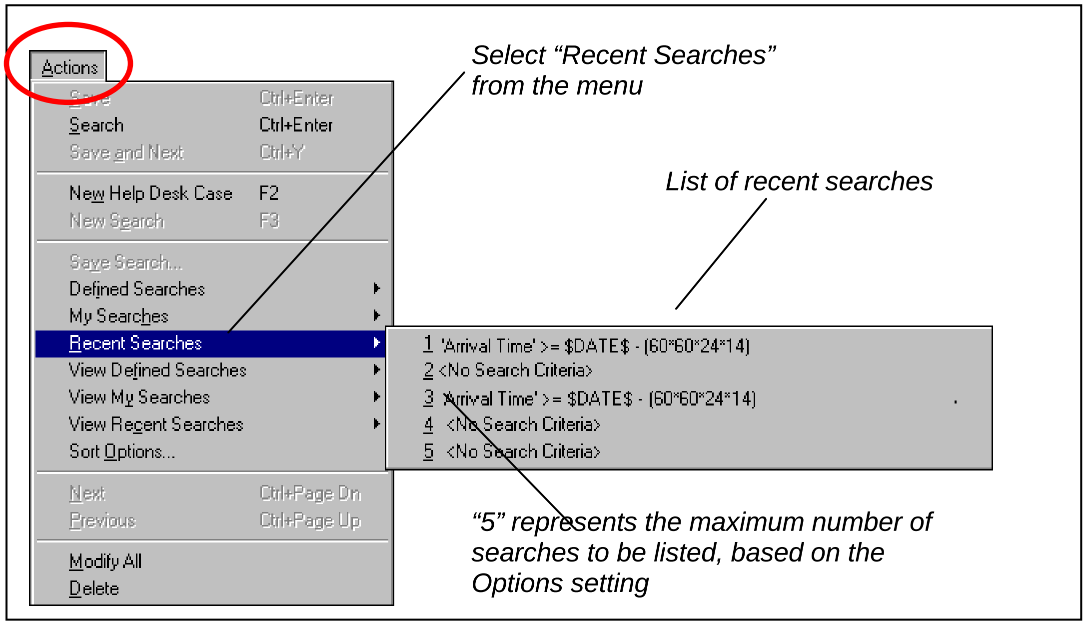
Recent Search Items Listed on the Actions Menu



Setting an option to Control Recent Lists

Re-executing a Recent Search Request

Selecting a search request from the “Recent Searches” item on the Actions menu automatically executes the selected search request (refer to the figures below).



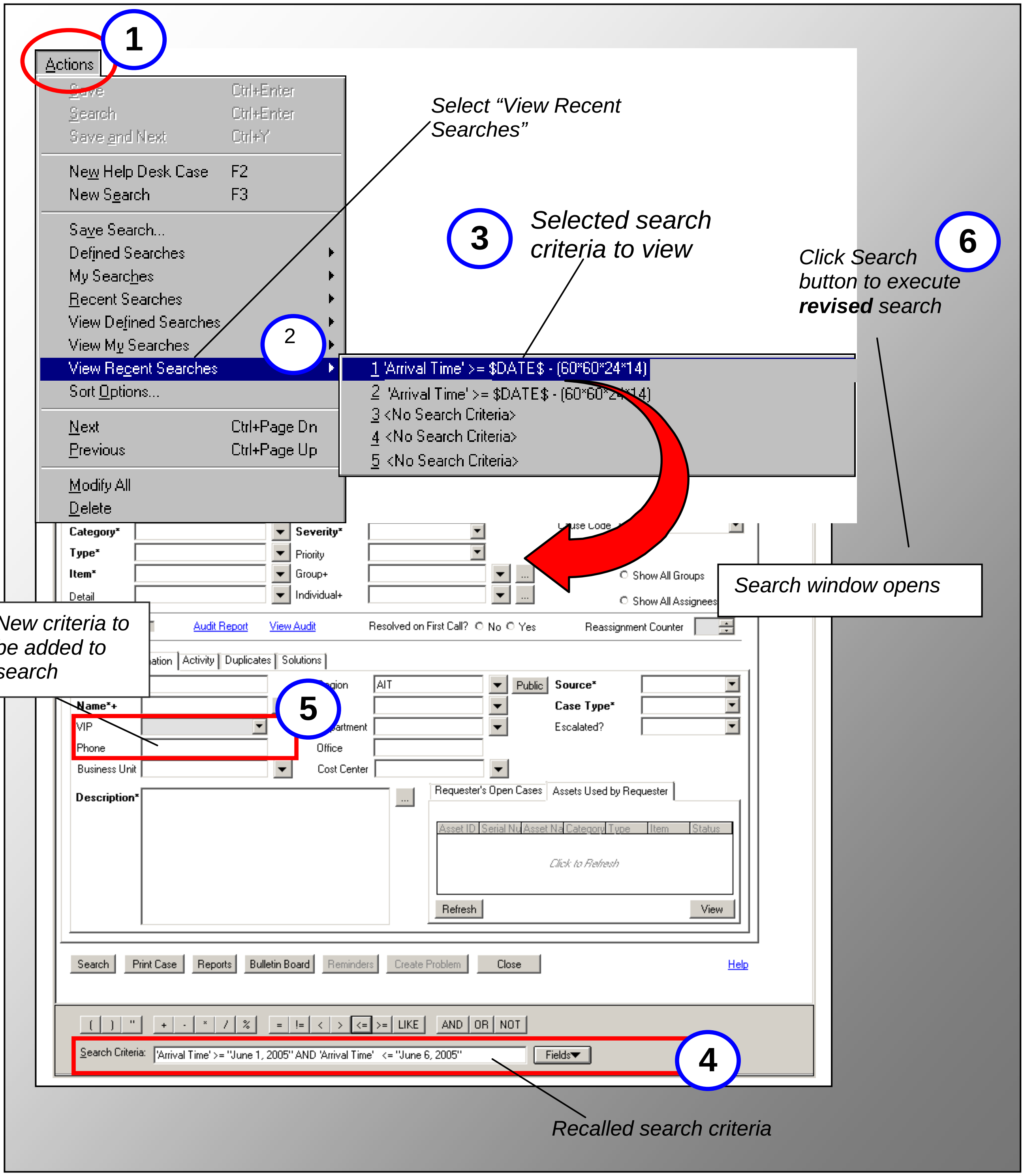
Re-executing a Recent Search

Reviewing Search Criteria

Having the ability to recall a search and make changes to it is very useful. Reviewing a search request’s search criteria is helpful in a situation where one wants to rerun a search with slight modifications to the criteria. The above Figure shows how to recall search criteria.

Steps: Reviewing Search Criteria

1. Open the form for which the search was created.
2. From the Actions menu, select "View My Searches" or "View Recent Searches". *The system opens a search window with the search criteria displayed in it.*
3. Make changes to the search criteria.
4. Click the Search button. *The search executes, using the modified search criteria.*



Reviewing Search Criteria