

BMC Remedy Action Request System 7.5.00

Introduction to Application Development with BMC Remedy Developer Studio



January 2009



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- Find the most current information about BMC Software products.
- Search a database for problems similar to yours and possible solutions.
- Order or download product documentation.
- Report a problem or ask a question.
- Subscribe to receive email notices when new product versions are released.
- Find worldwide BMC Software support center locations and contact information, including email addresses, fax numbers, and telephone numbers.

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 - License number and password (trial or permanent)
- Operating system and environment information
 - Machine type
 - Operating system type, version, and service pack
 - System hardware configuration
 - Serial numbers
 - Related software (database, application, and communication) including type, version, and service pack or maintenance level
- Sequence of events leading to the problem
- Commands and options that you used
- Messages received (and the time and date that you received them)
 - Product error messages
 - Messages from the operating system, such as file system full
 - Messages from related software



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- E-mail customer_support@bmc.com. (In the Subject line, enter SupID:<*yourSupportContractID*>, such as SupID:12345.)
- In the United States and Canada, call 800 537 1813. Outside the United States and Canada, contact your local support center for assistance.
- Submit a new issue at http://www.bmc.com/support_home.

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Preface

This manual introduces the process of developing application for BMC Remedy Action Request System (AR System).

— **IMPORTANT** —

The compatibility information in the product documentation is subject to change. See the compatibility matrix at http://www.bmc.com/support_home for the latest, most complete information about what is officially supported.

Carefully read the system requirements for your particular operating system, especially the necessary patch requirements.

Audience

If you are new to application development for AR System, or if you are new to using BMC Remedy Developer Studio, use this guide to learn about the application development process and how to use BMC Remedy Developer Studio.

AR System documents

The following table lists documentation available for AR System products.

Unless otherwise noted, online documentation in Adobe Acrobat (PDF) format is available on AR System product installation DVDs, on the Customer Support website (http://www.bmc.com/support_home), or both.

You can access product help through each product's Help menu or by clicking Help links.

Title	Description	Audience
<i>Concepts Guide</i> ¹	Overview of AR System architecture and features; includes information about add-on products that extend AR System functionality and a comprehensive glossary for the entire AR System documentation set.	Everyone
<i>Installation Guide</i>	Instructions for installing AR System.	Administrators

Title	Description	Audience
<i>Introduction to Application Development with BMC Remedy Developer Studio</i>	Information about the development of AR System applications, including an introduction to using BMC Remedy Developer Studio.	Developers ²
<i>Form and Application Objects Guide</i>	Information about AR System applications and their user interface components, including forms, fields, views, menus, and images.	Developers
<i>Workflow Objects Guide</i>	Information about the AR System workflow objects (active links, filters, and escalations) and how to use them to create processes that enforce business rules.	Developers
<i>Configuration Guide</i>	Information about configuring AR System servers and clients, localizing, importing and exporting data, and archiving data.	Administrators
<i>BMC Remedy Mid Tier Guide</i>	Information about configuring the mid tier, setting up applications for the mid tier, and using applications in browsers.	Administrators
<i>Integration Guide</i>	Instructions for integrating AR System with external systems by using web services, plug-ins, and other products, including LDAP, OLE, and ARDBC.	Administrators/ Developers/ Programmers ³
<i>Optimizing and Troubleshooting Guide</i>	Information about monitoring and maintaining AR System and AR System applications to optimize performance and solve problems.	Administrators/ Developers/ Programmers
<i>Database Reference</i>	Database administration topics and rules related to how AR System interacts with specific databases; includes an overview of the data dictionary tables.	Administrators/ Developers/ Programmers
<i>BMC Remedy Distributed Server Option Guide</i>	Information about implementing a distributed AR System server environment with BMC Remedy Distributed Server Option (DSO).	Administrators
<i>BMC Remedy Dashboards Guide</i>	Instructions for creating, modifying, and administering dashboards to display and monitor AR System information.	Administrators/ Developers
<i>C API Reference</i>	Information about AR System data structures, C API function calls, and OLE support.	Programmers
<i>C API Quick Reference</i>	Quick reference to C API function calls.	Programmers
Java API	Information about Sun [™] Java [™] classes, methods, and variables that integrate with AR System. For the location of the JAR file containing this online documentation, see the information about the Java API in the <i>Integration Guide</i> .	Programmers
Java Plug-in API	Information about Java classes, methods, and variables used to write plug-ins for AR System. For the location of the JAR file containing this online documentation, see the information about plug-ins in the <i>Integration Guide</i> .	Programmers
<i>BMC Remedy Email Engine Guide</i>	Instructions for configuring and using BMC Remedy Email Engine.	Administrators
<i>Error Messages Guide</i>	Descriptions of AR System error messages.	Administrators/ Developers/ Programmers
<i>Master Index</i>	Combined index of all books.	Everyone

Title	Description	Audience
<i>BMC Remedy Approval Server Guide</i>	Instructions for using BMC Remedy Approval Server to automate approval and signature processes in your organization.	Administrators
<i>Release Notes</i>	Information about new features, compatibility, and international issues.	Everyone
<i>Release Notes with Open Issues</i>	Information about new features, compatibility, international issues, installation planning, and open issues.	Everyone
BMC Remedy User Help	Instructions for using BMC Remedy User.	Everyone
BMC Remedy Developer Studio Help	Instructions for using BMC Remedy Developer Studio to develop AR System forms, workflow objects, and applications.	Developers
BMC Remedy Data Import Help	Instructions for using BMC Remedy Data Import.	Administrators
BMC Remedy Alert Help	Instructions for using BMC Remedy Alert.	Everyone
BMC Remedy Mid Tier Configuration Tool Help	Instructions for configuring BMC Remedy Mid Tier.	Administrators
BMC Remedy Browser Help	Instructions for using AR System forms in browsers.	Everyone

¹ The full title of each guide includes *BMC Remedy Action Request System 7.5.00* (for example, *BMC Remedy Action Request System 7.5.00 Concepts Guide*).

² Application developers who use BMC Remedy Developer Studio.

³ C and Java programmers who write plug-ins and clients for AR System.

About the AR System development process

This section describes what to do after you install and set up AR System and want to start using it to create your own business applications and automate your business process flows.

The following topics are provided:

- What is an AR System application? (page 12)
- Determining what to track (page 12)
- Deciding what to build (page 13)
- Using the proper tools for the tasks (page 15)
- A summary of the development process (page 16)
- Tips for designing applications (page 16)
- Accessibility for users with disabilities (page 19)

See the *Concepts Guide* for a conceptual introduction to AR System and AR System applications.

For more information about these topics, take the AR System Application Requirements Analysis, Design, and Development class offered by Educational Services.

What is an AR System application?

An AR System *application* is a software tool that you create to track data, processes, and issues. To create applications, you collect forms, workflow, and related objects into a single object that you can manage and distribute. The forms that you create contain fields, in which users enter the information that you want to gather for your application. You use the forms to collect and display data, the workflow to direct the action of the application, and the related objects to complete the forms and workflow.

A *form* is the basic user interface and building block of an application. The forms that you create contain *fields*, in which users enter the information that you want to gather for your application. As users add and update field data, the backend database is updated. Each form corresponds to a set of tables in the database, and each field corresponds to a column in a table. When the user submits the form, the information entered on the form updates the corresponding database tables.

Workflow objects (active links, filters, escalations, active link guides, and filter guides) tie together events (for example, user actions and changes to related data) and actions (for example, changes to the data and messages and other interaction with the user) to define the behavior of the application. Workflow objects are action-based, which means that their definitions are evaluated when data changes state or a specific action is initiated. Workflow is executed when a specified condition occurs, such as a user tabbing into a field, time passing, or a process running.

For example, a complete trouble ticket application might consist of a main form that contains the caller ID, problem description, and work log information and several secondary forms that are linked to the main form to manage caller information or aging tickets.

For complete descriptions of the key components that make up AR System applications, see the *Concepts Guide*.

Determining what to track

What you track depends on your business processes and rules that deal with data and events. Gather requirements for an application from users, managers, and other administrators who have a stake in the business process and how the application will support it.

When analyzing a business process and business rules, identify transition points in the process, where data moves from one state to another. Consider how groups of people in your organization handle the data during state transitions. Because the AR System application that you develop can control transitions and enforce business rules, you need a clear and correct understand of them.

When analyzing your data tracking needs, gather the following information:

- What is the life cycle of the data: data capture, data storage, data retrieval, data update, data archival, and data retirement?
- What types of information can be tracked together?
- Where does the data come from? Other systems? User data entry?
- Where could redundant data entry occur?
- Where can data be just referenced or displayed instead of entered or modified? Where can data be reused?
- What kinds of reports and information do users need from your application?
- Following normal business practices, when will the application's data become irrelevant?

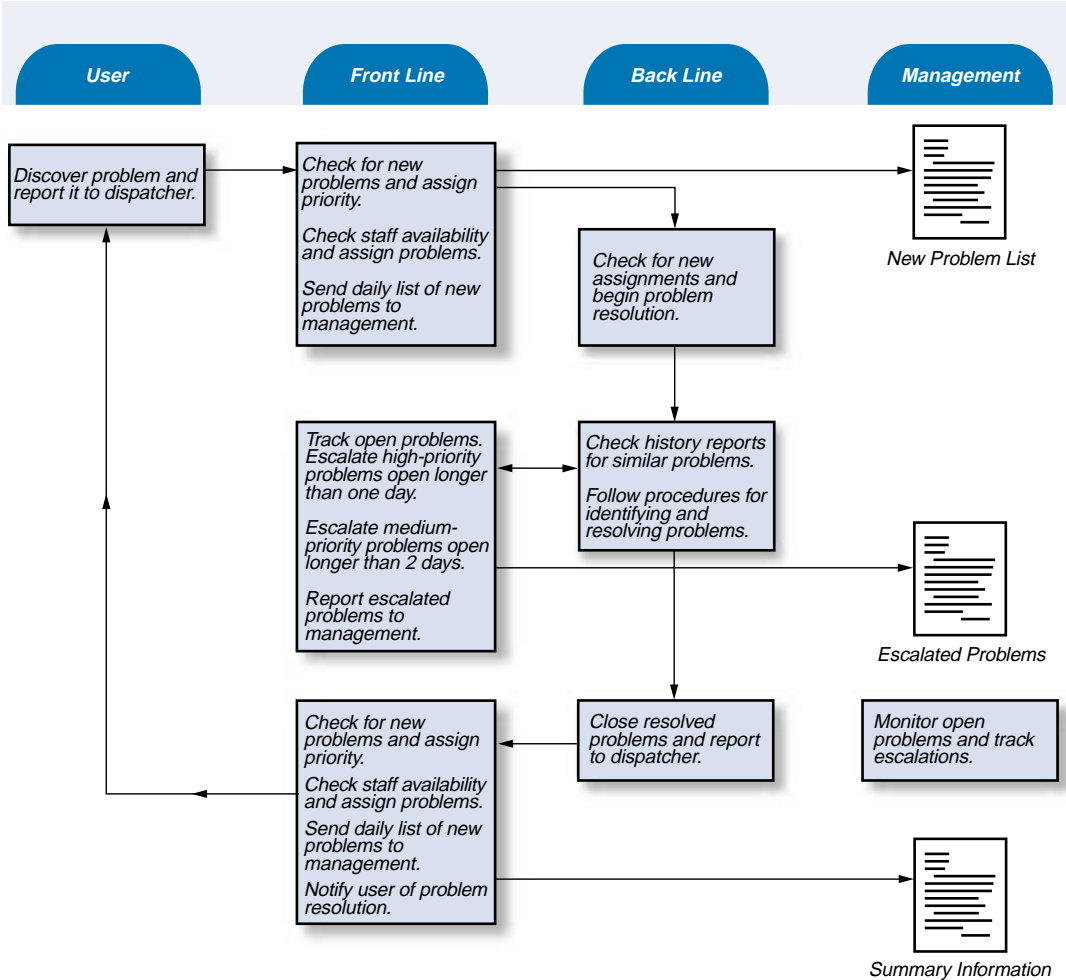
You can address these questions when designing your application and deciding how many forms will define the processes that you identified. The number of forms that you create depends on the smallest unit of data that you want to track and how you want that type of data to relate to other types of data. For example, to keep all data about assets in a single form, your asset form needs fields to accommodate information about manufacturers. Instead, to avoid duplicating information about manufacturers for each asset, your application could have a form for assets, and link it to a separate form for manufacturers through workflow and logical joins.

Deciding what to build

When designing filters, escalations, and active links that define the workflow process, consider the following issues:

- What is your current workflow process? Create a flowchart that describes your current problem-solving process (for example, see Figure 1-1).
- What events in your process trigger specific actions? Can you use shared workflow?

Figure 1-1: Workflow process example



Using the proper tools for the tasks

AR System uses servers to manage data. The following table summarizes the main servers. For more information about AR System servers, see the *Configuration Guide*.

Table 1-1: Servers used o manage data

Server	Use
AR System server	Processes data it receives from AR System clients, and passes the data to the database server to be stored.
Database	Stores definitions and data for the AR System server.
Web server	Serves as a repository for web applications. Displays the appropriate page to an authorized user.

You use AR System client tools to perform administrative tasks:

Table 1-2: Clients used to perform administrative tasks

Client	Tasks
BMC Remedy User or form in a browser	Administrator tasks: <ul style="list-style-type: none"> ■ Create groups and roles. ■ Create users and assign licenses. ■ Manage AR System server settings and licenses. User tasks: <ul style="list-style-type: none"> ■ Access AR System forms and applications to create and search for requests.
BMC Remedy Developer Studio	Developer tasks: <ul style="list-style-type: none"> ■ Create and update application, forms, and workflow.
Configuration Tool	Administrator tasks: <ul style="list-style-type: none"> ■ Modify mid tier settings for AR System servers, passwords, logging, caching, and authenticating web services. ■ Specify home page and preference and catalog servers.
BMC Remedy Data Import	Administrator tasks: <ul style="list-style-type: none"> ■ Import data into existing AR System forms.
BMC Remedy Alert	Inform users when they receive alerts.
BMC Remedy User command line interface (CLI)	Connect to the AR System server without the graphical user interface of BMC Remedy User. Use this tool to automate tasks.
Import/export command line interface (CLI)	Connect to the AR System server to import and export object definitions without the graphical user interface of BMC Remedy Developer Studio. Use this tool to automate tasks.
BMC Remedy Data Import Command Line Interface (CLI)	Connect to the AR System server to import data without the graphical user interface of BMC Remedy Data Import. Use this tool to automate tasks.

A summary of the development process

The following table summarizes the process for developing an AR System application.

Table 1-3: Tasks in the development process

Tasks	How	For more information, see . . .
Plan	<ol style="list-style-type: none"> 1 Analyze and determine your business processes, events, user functions, and so on. 2 Create a detailed design specification. 	<ul style="list-style-type: none"> ■ <i>Concepts Guide</i> ■ “AR System Application Requirements Analysis, Design, and Development” course
Build the application	<ol style="list-style-type: none"> 1 Use BMC Remedy Developer Studio to create the application and the forms, workflow, and other objects in it. 2 Define groups or roles and their access permissions. 	<ul style="list-style-type: none"> ■ <i>Form and Application Objects Guide</i> ■ <i>Configuration Guide</i> ■ “AR System 7.x: Administering - Part 2” course ■ “AR System 7.x: Administering - Part 3” course
Test and tune the application	<ol style="list-style-type: none"> 1 Select a group of people to test the application. 2 Make adjustments to the UI, workflow, and server environment to maximize performance. 	<ul style="list-style-type: none"> ■ <i>Optimizing and Troubleshooting Guide</i> ■ <i>Workflow Objects Guide</i> ■ <i>Configuration Guide</i> ■ “AR System 6.x: Performance Tuning and Troubleshooting” course
Move the application to production	<ol style="list-style-type: none"> 1 Use BMC Remedy Developer Studio to export the application and install it on the production server. 2 Add and license users. 3 Consider using a product like BMC Remedy Migrator to identify differences among objects on different servers or to import definitions. 	<ul style="list-style-type: none"> ■ <i>Configuration Guide</i> ■ <i>BMC Remedy Migrator Guide</i>

Tips for designing applications

This section offers tips for designing the layout of the forms in your applications. By following standard UI design practices, you can help your users understand how to fill out forms more easily.

Usability studies show that users prefer to complete major tasks quickly and accurately. User-friendly applications provide the following benefits:

- Improve user task completion rates by 25–50%.
- Reduce technical support time by 20–30%.
- Reduce training time by 30–40%.
- Reduce user frustration level by 0–50%.

To create user-friendly applications, observe the application design principles that follow.

Helpful design tips

The following tips can help you design better applications:

- **Target common tasks**—Design around the three or four most common tasks that your users are likely to perform. If you have several types of users (for example, managers and support personnel), design separate forms, tabs, or views for each type.
- **Group elements**—Group information that belongs together in the same area. For example, keep all customer address information in one area. Label each section clearly. Use white space to separate the grouped information.
- **Emphasize elements**—Place important elements, such as required fields, at the top of the grouped sections. Place optional or less important elements at the bottom. Buttons should immediately follow the section upon which they act.
- **Simplify the interface**—To increase your user success rates:
 - Reduce the required steps to accomplish the most common user tasks.
 - Reduce the amount of text and font types, design elements (such as buttons and fields), and graphics. Consider eliminating elements that are not required.
 - Create smaller tables.
 - Plan your design around the tasks users must accomplish and the fields required to accomplish those tasks. As a general rule, 80% of optional fields can be eliminated.
- **Create contrast**—Choose a light background color that makes black text easy to read. Avoid light-colored text and dark, multicolored, or textured backgrounds. Use headings, bold text, and light-colored cells and borders to make important elements stand out.
- **Align elements**—Align your fields and field labels. Misaligned fields create visual confusion and draw the user's attention away from the tasks they must perform.
- **Be consistent**—Keep language simple and consistent. For example, use either Postal Code or Zip Code, but not both. Use similar field lengths and button types for similar actions.
- **Provide feedback**—Provide a message or clearly change the way the interface appears after a user performs an action. For example, if the user performed the wrong action, supply an error message that explains why the action did not succeed and what the user must do next.
- **Test your application**—Customers can give feedback on your application from a user point of view. Test your application with a cross-section of customers that best reflects your intended audience.

Effective user interface design

Figure 1-2 illustrate the design principles outlined in this section. Its poorly designed user interface has misaligned, extraneous, and disorganized fields. The bottom sections are not labeled. The Clear Table button does not follow the appropriate section. Important elements blend in with less important ones, making it more difficult to accomplish tasks quickly.

Figure 1-2: Poorly designed interface

New PR:Purchase Requisition

For: Requested For+ [Field] Phone [Field] Department [Field] Manager+ [Field]

Ship To: Location: [Field] Attention+ [Field] Street [Field] City+ [Field] State/Prov+ [Field] Postal Code+ [Field] Country+ [Field]

Details: Quote # [Field] Date Required+ [Field] PR Status [New] In Budget? [Unknown] Backup Paperwork? [No] Charge To [Field] Install Needed? [Field] Calculate Tax? [No] Type [Expense] Change Order? [No] Justification [Field] Notes To Purchasing [Field] Total [Field]

Primary Supplier Details: Primary Supplier [Field] Address [Field] City [Field] Phone [Field] FAX [Field] State [Field] ZIP [Field] Contact [Field] Add Supplier To Supplier List [Field] Show Supplier [Field]

Table: Catalog [Field] Part Category [Field] Part Number [Field] Search Criteria for catalog. [Field]

Part Number	Description	Supplier +	Quantity	Unit	Unit Price	Estimated Price	Actual Price	Tax Rate
[Field]	[Field]	[Field]	1	EA	[Field]	[Field]	[Field]	[Field]
[Field]	[Field]	[Field]	[Field]	[Field]	[Field]	[Field]	[Field]	[Field]
[Field]	[Field]	[Field]	[Field]	[Field]	[Field]	[Field]	[Field]	[Field]
[Field]	[Field]	[Field]	[Field]	[Field]	[Field]	[Field]	[Field]	[Field]

Figure 1-3 shows a well-designed interface that includes only necessary fields that are grouped and aligned. Important fields stand out from the background, enabling users to accomplish tasks quickly.

Figure 1-3: Well-designed interface

Remedy Asset Management

Purchase Requisition

Requestion ID [PR00000007] Date Required* [7/31/2003] Status* [Pending Pricing] Install Needed? [No] Change Type [Field]

Description* [New Employee Setup] Justification* [New Employee Setup]

Requested For Full Name*+ [Mary Manager] Department [Information Servic. Phone 555-5555] Manager+ [Field]

Requested By Full Name*+ [Mary Manager] Department [Information Servic. Phone 555-5555]

Table: Line Items [Details] [Shipping] [Approval]

Part Number	Description	Status	Supplier Name	Quantity	Unit	Unit Price	Estimated Price
Not Specified	(Hardware) Laptop - Dell Latitude	In Preparation	Dell Computer	1	Each	1,200.00 USD	1,200.00 USD
Not Specified	(Software) Operating System -	Pending Pricing	Microsoft Corporation	1	Each	0.00 USD	0.00 USD
Not Specified	(Software) Microsoft Office - M	In Preparation	Microsoft Corporation	1	Each	400.00 USD	400.00 USD
Not Specified	(Software) Oracle Applications	Pending Pricing	Oracle Corporation	1	Each	0.00 USD	0.00 USD

Select Configuration [Add] [View] [Remove] Grand Total [1,600.00 USD]

Save [Request Pricing] [Submit for Approval] [Print Requisition] [Hold or Cancel] [Close] Help

Helpful resources

For more information about usability design principles, talk to a usability consultant or see the following books and websites.

Books

- *Designing Web Usability: The Practice of Simplicity*, by Jakob Nielsen
- *GUI Bloopers 2.0: Common User Interface Design Don'ts and Dos*, by Jeff Johnson
- *Don't Make Me Think: A Common Sense Approach to Web Usability*, 2nd Edition
- *Don't Make Me Think: A Common Sense Approach to Web Usability*, 2nd Edition, by Steve Krug
- *The Humane Interface: New Directions for Designing Interactive Systems*, by Jef Raskin (Paperback)
- *About Face 3: The Essentials of Interaction Design*, by Alan Cooper, Robert Reimann, and David Cronin

Websites

- <http://www.uie.com>
- <http://www.upassoc.org>
- <http://www.nngroup.com>
- <http://www.useit.com>

Accessibility for users with disabilities

Both BMC Remedy User and the mid tier support users who need assistive technology such as JAWS (Job Access with Speech). For more information about accessibility in a browser, see the *BMC Remedy Mid Tier Guide*.

2 Using the AR System development environment



This section is an introduction to using BMC Remedy Developer Studio to develop applications.

The following topics are provided:

- Starting BMC Remedy Developer Studio (page 22)
- Developer perspective overview (page 24)
- Finding objects (page 27)
- Creating objects (page 44)
- Modifying objects (page 45)
- Working with working lists (page 59)
- Working with applications and packing lists (page 61)
- Working with perspectives (page 64)

Starting BMC Remedy Developer Studio

This section explains how to start and log in to BMC Remedy Developer Studio. You can log in to an AR System server from any computer on the network that has access to the server.

NOTE

To use BMC Remedy Developer Studio, you must be an AR System administrator or subadministrator. See the *Form and Application Objects Guide*.

► To start BMC Remedy Developer Studio and log in to AR System servers

- 1 Choose Start > Programs > BMC Software > AR System > BMC Remedy Developer Studio 7.5.
- 2 To change the location of your workspace in the Workspace Launcher, click Browse, select or create a directory, and click OK.

BMC Remedy Developer Studio stores local preferences and other configuration information in the workspace directory. To maintain different sets of local preferences and other configuration information, create two or more workspace directories. To clear all local preferences, configured AR System servers, and other local preferences and start BMC Remedy Developer Studio in its initial state, exit BMC Remedy Developer Studio, delete the workspace directory, and restart BMC Remedy Developer Studio.

- 3 In the Workspace Launcher, select the check box if you do not want to see this dialog box during login, then click OK.
- 4 In the User Name field of the Login window, enter the name of an AR System administrator or subadministrator, such as `Demo`.

An AR System user name is case-sensitive, which means you must type `Demo`, not `demo` or `DEMO`.

NOTE

During initial installation, the `Demo` user is created without a password. To keep AR System secure, add a password for `Demo` as soon as possible. See the *Configuration Guide*.

- 5 Enter the password of the AR System user.
- 6 (Optional) If you are required to specify an authentication string or a preference server, click Options.
 - a Enter an authentication string.

Whether you need an authentication string depends on how your server validates users. For most situations, this field is not used. For more information, see the *Configuration Guide*.

You can also define use of an External Authentication (AREA) plug-in. For more information, see the *Integration Guide* and the *C API Reference*.

You must inform clients whether an authentication string is needed when logging in and what that string should be. For most situations, this field is not used and remains empty.

- b In the Preference Server field, type the name of your preference server. If the preference server does not use the default TCP port, type the port number in the Preference Server TCP field.

A preference server is the AR System server on which the AR System preference forms are installed. This server stores your administrator and user preferences in a central location where they can be accessed from any client computer. You define a server as a preference server during or after installation.

If you always log in from the same computer, leave this field blank to store your preferences locally in the workspace directory.

For more information, see the *Configuration Guide* and BMC Remedy User Help.

- 7 If you have already configured AR System servers to connect to, click Login (and skip the rest of this procedure).
- 8 Click Edit Server List.
- 9 In the Server List dialog box, click Add.
- 10 Click `Enter a server name` in the Servers column, and type the server name.
To prevent BMC Remedy Developer Studio from connecting to a server, clear the server's check box.
- 11 If the server does not use the default TCP port, click in the TCP column and type the port number.
- 12 Repeat steps 9 through 11 for each server BMC Remedy Developer Studio must connect to.
- 13 Click OK.
- 14 In the Login dialog box, click Login.

Changing the current login

To log in to a different server or as a different user, you must change your login.

► To change the current login

- 1 Choose File > Login.
- 2 In the Login dialog box, change the server list, user name, password, and other information as described in “To start BMC Remedy Developer Studio and log in to AR System servers” on page 22.
- 3 Click Login.

You can use the File > Switch Workspace command to select another workspace and log in using it.

Exiting BMC Remedy Developer Studio

When you exit BMC Remedy Developer Studio, you are prompted to save any unsaved objects. If you changed the layout of windows, preferences, or anything else saved in the workspace directory, the changes are saved for your next login.

► To exit BMC Remedy Developer Studio

- 1 Choose File > Exit.
- 2 Click OK.

The Progress Information dialog box appears briefly as changes are saved to the workspace directory.

Developer perspective overview

BMC Remedy Developer Studio is an Eclipse application. The Eclipse application platform uses *perspectives* to organize windows into layouts. BMC Remedy Developer Studio includes the Developer perspective, which contains views and editors that you use to find, create, and modify objects on AR System servers, and the Editor perspective, which contains just the editors and views that you need when you are editing an object. The AR System documentation usually uses *tab* to refer to a view or editor in BMC Remedy Developer Studio.

NOTE

BMC Remedy Developer Studio does not support large DPI fonts, which are configured in the Properties dialog box of Windows computers.

About views and editors

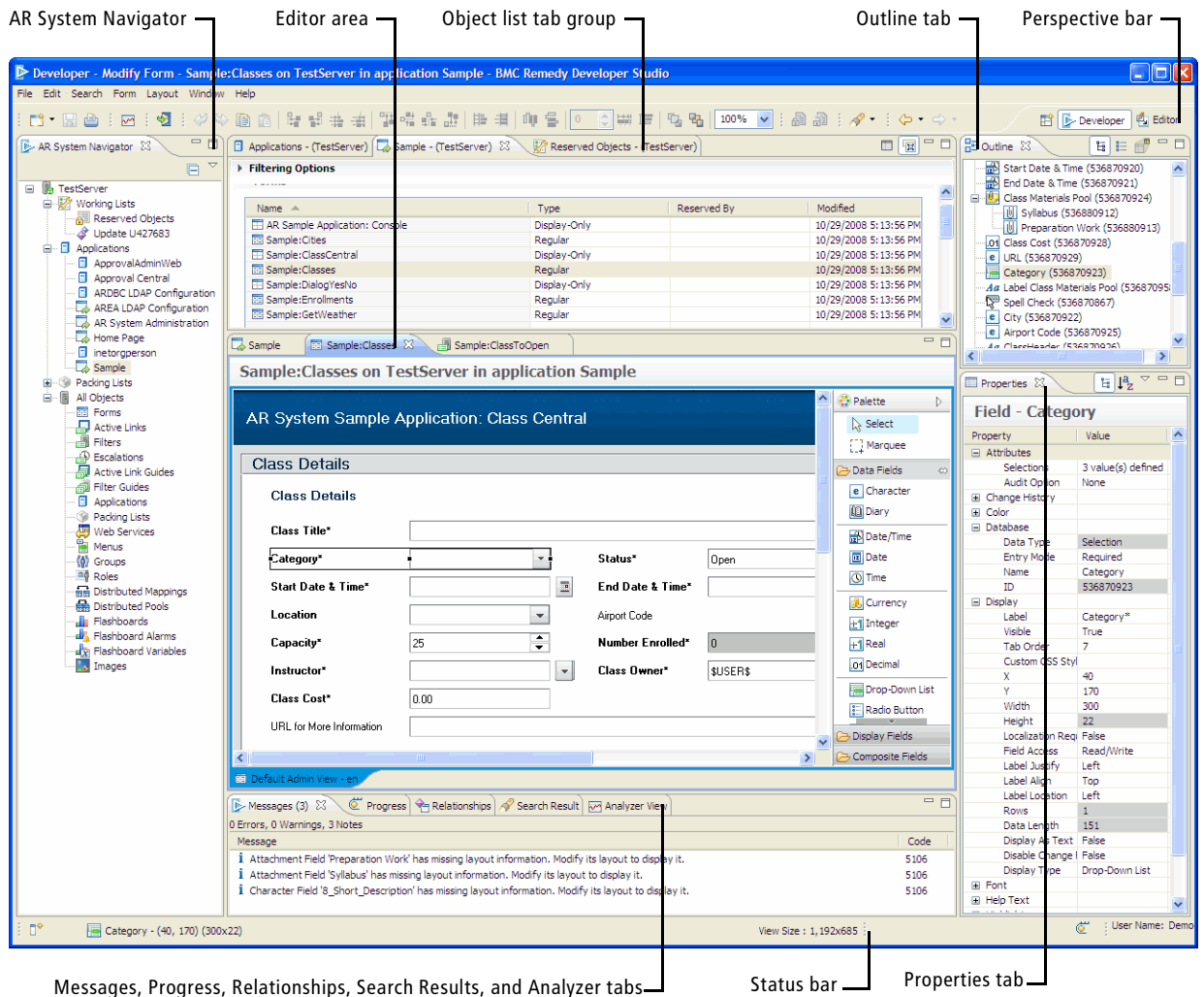
All areas in the perspectives except the editor area contain views in tab groups. Different views serve different functions. Use views to

- Find objects to open in an editor
- Select a part of an object to view or change in an editor
- Get information about your work in an editor
- Set properties of objects

The editor area contains editors one or more tab groups. Use editors to modify AR System server objects.

The AR System documents use *tab* to refer to a view or editor. For information about how to control tabs, see “Arranging tabs in the perspective” on page 64.

Figure 2-1: BMC Remedy Developer Studio and the Developer perspective



As shown in Figure 2-1, the Developer perspective has several parts:

- **AR System Navigator**—Contains a tree of objects for each AR System server that BMC Remedy Developer Studio is connected to.

Use the items in the tree to create and access objects on the server. See “Objects in the AR System Navigator” on page 27 and “Creating objects” on page 44.

- **Object list tab group**—Contains tabs with lists of server objects.

Use these lists to find objects to examine or modify. See “Objects in object lists” on page 29.

- **Editor area (tab group)**—Contains tabs with editors.

Use the editors to create and modify AR System objects. See “Working with editors and related tabs” on page 49 for an overview of the BMC Remedy Developer Studio editors and how to control editors in the editor area.

- **Outline tab**—Displays a structural outline of the object that you are working on for most editors. For the form editor, the Outline tab also displays a reduced-size visual Zoom Overview of the form.

Use this tab to select items in the object. When you select an item in the outline, it is also selected in the editor, and vice versa. Use the form Zoom Overview to position the form editor on a part of the form.

- **Properties tab**—Displays the properties of the object that you are working on in an editor or the properties of a form view or a field in a form.

Use this tab to check or change the properties of objects, form views, and fields. See “Properties tab” on page 50.

- **Messages tab**—Displays messages about the work that you are doing in an editor.

Double-click a message to go to the relevant location in the editor. See “Messages tab” on page 58.

- **Progress tab**—Shows the progress long operations, such as an export or import.

You can continue working while the operation runs.

- **Relationships tab**—Displays a list of related fields and objects.

Use the Show Relationships command to display related fields and objects. Double-click an item to edit the object and go to the relevant location in the editor. See “Finding related objects” on page 37.

- **Search Results tab**—Displays a list of server objects that contain text that you specify.

Use the Search command to find objects that satisfy your search criteria. You can use the Search Results tab like an object list. See “Searching for objects” on page 33.

This tab does not appear until you use the Search command or explicitly open the Search Results tab.

- **Analyzer tab**—Displays the results of the analysis of one or more objects.

Use the Analyze command to analyze objects. Double-click an item to edit the object and go to the relevant location in the editor. See the *Workflow Objects Guide* for information about the analyzer.

This tab does not appear until you use the Analyze command or explicitly open the Analyzer tab.

- **Perspective bar**—Makes it easy to switch perspectives.

See “Perspective operations” on page 69.

Initially, the Search Results and Analyzer tab do not appear in the Developer perspective. Also, by default the Messages, Progress, Relationships, and Analyzer tabs shares a tab group in the Developer perspective. For more information about tabs, tab groups, and perspectives, see “Arranging tabs in the perspective” on page 64.

- **Status bar**—Displays information about the user logged in and about the object being edited.

NOTE

If you cannot find a tab, it might be minimized or closed. To open a minimized tab, click the Restore icon in the window margin. If the tab is closed, use the Window > Show View menu to open it.

Finding objects

You can use the following method in BMC Remedy Developer Studio to find the server objects that you need to view or modify:

- Browse the AR System Navigator.
- Create working lists.
- Sort and filter object lists.
- Search for fields and objects with specified text in certain properties.
- Show and sort lists of related objects.




For information about Creating, modifying, and deleting objects, see “Creating objects” on page 44 and “Modifying objects” on page 45.

Objects in the AR System Navigator

Use the AR System Navigator, shown in Figure 2-1 on page 25, to find server objects to view or modify.

The AR System Navigator contains a tree for each connected server. The server icon shows whether the server is connected and whether you are logged in as an administrator or subadministrator.

Table 2-1: Server icons

Icon	Represents...
	Disconnected server
	Server, logged in as administrator
	Server, logged in as subadministrator

For information about subadministrator access to objects, see the *Form and Application Object Guide*.

The AR System Navigator gives you access to the following lists and objects:

- **Working Lists**—Each item represents a working list.

Create a working list to collect server objects that you use to complete an application development or maintenance task. Double-click an item to open the working list in the object lists tab group. From the object list, you can access the object in the working list. See “Objects in object lists” on page 29.

Use the special Reserved Objects working list to access reserved objects. For information about object reservation, see the *Form and Application Objects Guide*.

Create a working list to collect server objects that you use to complete an application development or maintenance task. See “Working with working lists” on page 59.

- **Applications**—Each item represents application defined on the server.

Double-click an item to open the application in the object lists tab group. From the object list, you can access the objects in the application. See “Objects in object lists” on page 29.

- **Packing Lists**—Each item represents a packing list defined on the server.

Double-click an item to open the packing list in the object lists tab group. From the object list, you can access the objects in the packing list. See “Objects in object lists” on page 29.

- **All Objects**—Each item represents a list of all objects of a type defined on the server.

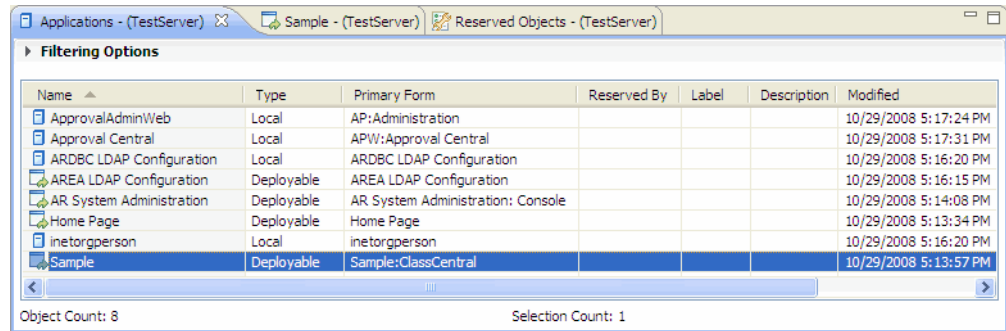
NOTE

Working lists and applications provide a way to access server objects in a working context. Using these containers can reduce the time to find objects that you need to access.

Objects in object lists

The object list tab group contains the object lists that you open during your BMC Remedy Developer Studio session. All object lists are closed when you exit BMC Remedy Developer Studio.

Figure 2-2: Object lists tab group



Object lists can include all objects of a particular type defined on the server. They can also list the contents of a container:

- **Application object list**—All objects in the application
- **Packing list object list**—All objects in the packing list
- **Working list object list**—All objects in the working list

You can change the column shown and the layout of an object list and filter the contents to help you find the objects that you need to view or modify.

► To open an object list









- In the AR System Navigator, double-click a working list, application, packing list, or object type item.

Object lists are identified with the icons in Table 2-2.

Table 2-2: Object list icons (Sheet 1 of 2)

Icon	Represents...
	Active links
	Active link guides
	An application or applications
	Distributed mappings
	Distributed pools
	Escalations
	Filters
	Filter guides
	Flashboards
	Flashboard alarms
	Flashboard variable

Table 2-2: Object list icons (Sheet 2 of 2)

Icon	Represents...
	Forms
	Groups
	Images
	Menus
	A packing list or packing lists
	Roles
	A working list
	Web Services

NOTE

There is an Applications objects list that lists all applications and a Packing Lists object list that lists all packing lists. There is also an object list for each application or packing list that lists the objects in that container.

► **To change the columns shown in an object list**

- 1 Choose Window > Preferences to open the Preferences dialog box.
- 2 In the BMC Remedy Developer Studio branch, click Object List View to show the Object List View preferences.
- 3 In the list, choose the object type.
- 4 In the table, change the value in the Display column to show or hide columns in the object list.
- 5 Use the Up and Down button to position the columns.
- 6 Use the Import button to read column preferences from an XML file, or use the Export button to write preferences to an XML file.
- 7 Click Restore Defaults to restore the object list configuration for the selected object type to the defaults.
- 8 Click OK to save your changes.
- 9 Close and reopen the object list to see your changes.

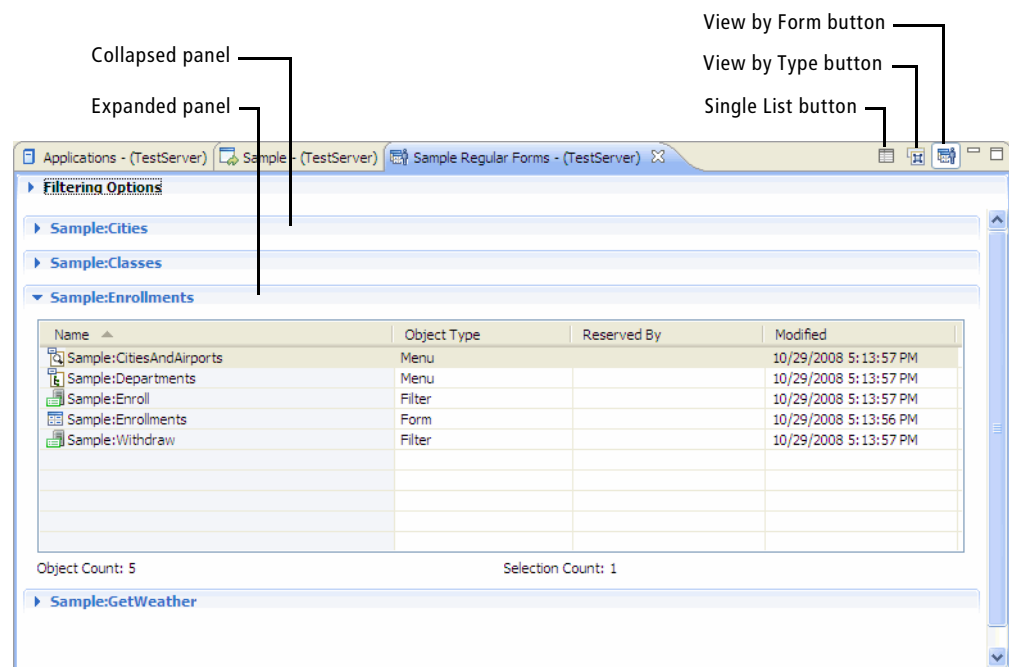
► To change the layout of an object list

- Click the appropriate layout button in the object list tab group toolbar. See Figure 2-3 on page 31.

The following object list layouts are provided:

- **Single list**—A list of all objects in the object list. This is the only layout available for object type lists, which do not have layout buttons.
- **View by type**—A sequence of panels, one for each object type. Expand a panel to see its list. This layout is available for the application, packing list, and working list views.
- **View by form**—A sequence of panels, one for each form. Expand a panel to see a list that includes the form and its related objects. This layout is available only for View by Form working lists.

Figure 2-3: Object list view by form



NOTE

Switching a list of many objects or a list on a server with very many objects to single list layout can take some time as information about all the objects is retrieved.

► To expand or collapse a panel in an object list

- Click the triangle or the text on the panel header.

► **To sort the contents of an object list**

- Click a column heading to sort the list by that column.

Use this method to bring together items with common values.

► **To filter the contents in an object list**

- 1 Click the triangle button or the Filtering Options text at the top of the object list to open the filtering options panel.
- 2 From the first drop-down list, select the column to use to filter the object list.
For a single object list, the columns shown are the columns in the list. For an application, packing list, or working list views and for search results, the columns shown are the columns configured for all object types in the list.
- 3 From the second drop-down list, select the compare operation.
The compare operations available depend on the data type of the column selected.
- 4 In the text field, type the value to match.
The items in the list are filtered as you type.
- 5 For view by type lists, to remove an object type from the list, clear the check box for that type.
The object list is updated to include only objects that match the filter specifications.

► **To locate an object in an object list**

- 1 Select an object in the list.
- 2 Quickly type the first few characters of the name of the object that you want to find.
The first item in the list that begins with those characters is selected.

► **To close an object list**

- Click the close button on the list tab.

See “Arranging tabs in the perspective” on page 64 for common tab operations.

► **To close all object lists**

- Right-click any item in the AR System Navigator and choose Close all open Object Lists from the pop-up menu.

Refreshing an object list

When you add certain types of objects to an application, the objects might not be immediately visible in the application object list. For example, when you attach a menu to a field on a form in an application, the menu is associated with the application, but the application list might not immediately recognize that association.

► To refresh objects in a list

- Choose File > Refresh.

Searching for objects

The Search command lists in the Search Results tab those forms whose fields or those objects whose attributes, properties, and field references match a text string or field ID that you specify. For example, use search to find the following:

- All forms that have fields whose names is, begins with, or contain the search string.
- All objects of a given type whose names is, begins with, or contain the search string.
- All workflow objects of a given type that have an associated form whose names begins with or contain the search string.
- All workflow objects of a given type that reference a field with a specified name.

To perform a search, you specify the text to search for, the type of objects to search, and the location in the objects of the target text to search. You can also use options to control the search.

IMPORTANT

To search for objects, BMC Remedy Developer Studio uses object relationships recorded by the AR System server. For the Search command to work, Record Object Relationship must be enabled on the Configuration tab of the AR System Administration: Server Information form. See the *Configuration Guide* for details.

If BMC Remedy Developer Studio is connected to a server when Record Object Relationship is enabled, you must use File > Login to reconnect for the Search command to be available.

To find objects that are related to a specific field or object, see “Finding related objects” on page 37.

► To list objects that contain specified text

- 1 Choose Search > Search.

Figure 2-4: Search dialog box.

- 2 In the Search dialog box,
 - a Select the server to search in the Server field.
 - b Type the text to find in the Search Text field.
 - c To search for a field ID, select Treat as Field ID.
The Search Text must be a positive integer.
 - d Select an Object Type and a Target Text Location for the search.
For descriptions of available search locations, see Table 2-3 on page 35.
 - e To search two or more object types or locations, select additional object types and locations in other rows.
 - f To add rows, click one of the plus (+) buttons.
 - g To remove a row, click its minus (-) button.
 - h To limit the search, select an option in Match.
 - i To search string constants, select one or both options in Sting Constants Match.
 - j To limit the search to selected objects, select Selected Objects and click Choose to select the objects.

3 Click Search to perform the search.

The Progress tab display the search progress. When the search completes, the Search Results tab displays a list of fields and objects.

Table 2-3 lists and describes the locations available for search.

Table 2-3: Object types and search locations (Sheet 1 of 2)

Target Text Location	Object types	Description
Active Link	Active link guides	Names of active links in guides
Call Guide	Active links Filters	Names of guides called in Call Guide actions
Change Field	Active links	Names or IDs of fields that are referenced in Change Fields actions
DDE	Active links	Names or IDs of fields that are referenced in DDE actions
Direct SQL	Active links Escalations Filters	SQL commands in Direct SQL actions
Filter	Filter guides	Names of filters in filter guides
Form	Active links Active link guides Applications Escalations Filters Filter guides	Names of associated forms in workflow objects
Form	Applications	Names of forms in applications
Form	Menus	Names of forms that contains a field that uses one of the menus
Go To	Active links Filters	Names or IDs of fields that are referenced in Go To actions
ID	Fields	IDs of the fields in forms Note: Treat as Field ID must be selected.
Message	Active links Filters	Message text in Message actions

Table 2-3: Object types and search locations (Sheet 2 of 2)

Target Text Location	Object types	Description
Name	Active links Active link guides Applications Distributed mappings Distributed pools Escalations Fields Filters Filter guides Flashboards Flashboard alarms Flashboard variables Forms Menus Web services	Names of objects or fields
Notify	Escalations Filters	Names or IDs of fields that are referenced in Notify actions
OLE Automation	Active links	Names of Methods in OLE Automation action
Open Window	Active links	Names or IDs of fields that are referenced in Open Window actions
Push Fields Fields	Active links Escalations Filters	Names or IDs of fields that have values changed in Push Fields actions
Push Fields From Form	Active links Escalations Filters	Names of forms referenced in a Push Fields action with Data Destination set to SERVER
Push Fields If	Active links Escalations Filters	Names or IDs of fields that are referenced in Qualifications in Push Fields actions
Run If	Active links Escalations Filters	Names or IDs of fields that are referenced in Run If Qualifications
Run Process	Active links Escalations Filters	Command Lines in Run Process actions
Set Fields Fields	Active links Escalations Filters	Names or IDs of fields that have values changed in Set Field actions
Set Fields From Form	Active links Escalations Filters	Names of forms referenced in a Set Fields action with Data Source set to SERVER
Set Fields If	Active links Escalations Filters	Names or IDs of fields that are referenced in Qualifications in Set Fields actions

Objects in the Search Results tab

The Search Results tab has the following features of object lists:

- Single List and View by Type layouts
- Filtering Options
- Sorting on columns
- Pop-up menu commands

To find objects in the Search Results tab, see “Objects in object lists” on page 29 for applicable procedures.

Finding related objects

The Show Relationships command lists in the Relationships tab all fields and objects related to a selected field or object. For example, use relationships to find the following:

- All workflow objects that have a given form as an associated form.
- All Open Window actions that open a given form.
- All forms and fields that reference a given image or menu.
- All images or menus that are referenced by any field in a form or by a particular field.

Only objects in the same server as the selected object are shown in the Relationships tab. Relationships with objects in different servers, such as a Push Fields action to a form in a different server, are not included.

— **IMPORTANT**

To show relationships, BMC Remedy Developer Studio uses object relationships recorded by the AR System server. For the Show Relationships command to be available, Record Object Relationship must be enabled on the Configuration tab of the AR System Administration: Server Information form. See the *Configuration Guide* for details.

If BMC Remedy Developer Studio is connected to a server when Record Object Relationship is enabled, you must use File > Login to reconnect for the Show Relationships command to be available.

To find forms whose fields or objects whose attributes, properties, and field references match a text string or field ID that you specify, see “Searching for objects” on page 33.

► **To list fields and objects related to an object**

- In an object list, the Relationships tab, or the Search Results tab, right-click an object and choose Show Relationships.

The Relationships tab lists the fields and objects related to the selected object.

► **To list fields and objects related to a field**

- In the form editor, right-click a field and choose Show Relationships.

The Relationships tab lists the fields and objects related to the selected field.

NOTE

If two or more objects are selected in a list or two or more fields are selected in the form editor, the Show Relationships command is not available.

► **To list fields and objects related to a field or object by selecting it in an editor**

- 1 Select the Relationships tab in its tab group.
- 2 Select the Link with Editor button with two yellow arrows in the tab group toolbar.
See Figure 2-5 on page 39.
- 3 Select a field or a workflow object.

- Select a field in the form editor or Outline tab.

The Relationships tab lists the fields and objects related to the selected field.

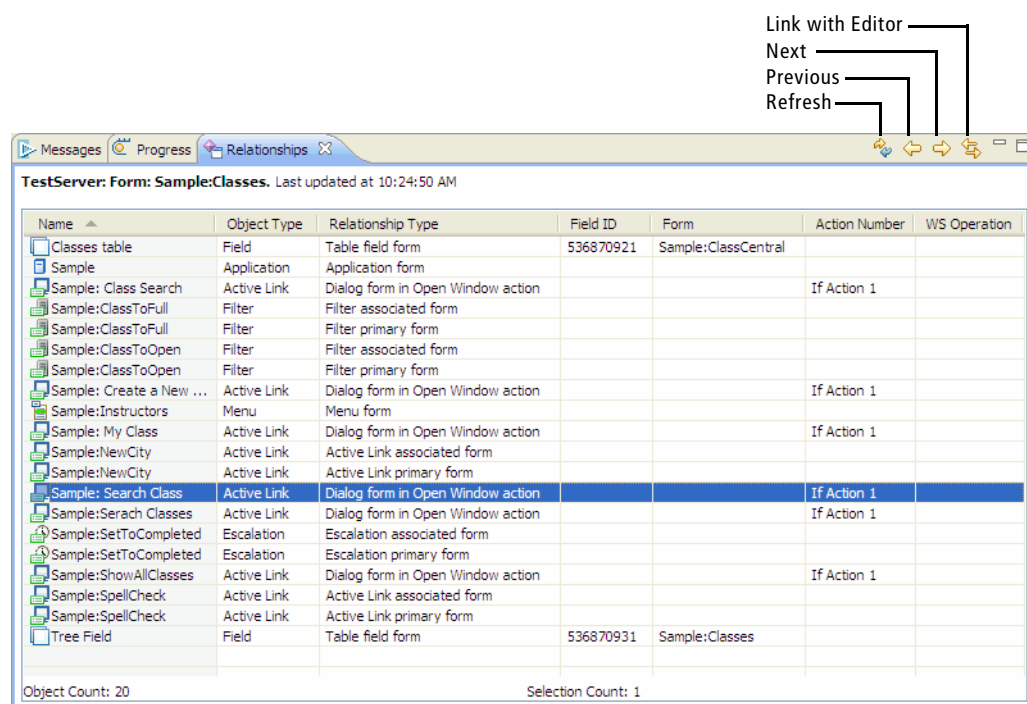
- Make a workflow editor active.

The Relationships tab lists the fields and objects related to the workflow object being edited. While Link with Editor is selected, each time you select a field or workflow object, the Relationships tab is immediately updated.

Working with the Relationships tab

The Relationships tab list the relationships between a field or object and other fields and objects.

Figure 2-5: Relationships tab



The list in the Relationships tab contains the following columns:

- **Name**—The name of the field or object.
- **Object Type**—One of the object types listed at the beginning of this section.
- **Relationship Type**—One of the relationship types listed at the beginning of this section.
- **Field ID**—For a field, its ID; otherwise, blank.
- **Form**—For a field, the form it is in; otherwise, blank.
- **Action Number**—For a workflow object and a relationship with a workflow action, the number of the action in the sequence of If or Else actions; otherwise, blank.
- **WS Operation**—For a relationship with a web service, the operation; otherwise, blank.

Table 2-4 lists all the relationship types reported in the Relationships tab, groups by the field or object selected the Show Relationships command is run.

Table 2-4: Relationship types (Sheet 1 of 4)

Field or Object Type	Relationship Type	Description
Active link	Active Link associated form	Active Link related to form
	Active Link primary form	Active Link related to primary form
	Active Link selected secondary form	Active Link related to chosen secondary form
	Entry Point active link	Active Link Guide references entry point active link
	Guide active link	Active Link Guide references active link
	Packing List active link	Packing List references an active link
Application	Packing List application	Packing List references an application
Escalation	Packing List escalation	Packing List references an escalation
Field	Field as Control field	Active Link references field as a control field
	Field as Focus field	Active Link references field as a focus field
	Field as Label field	Menu references field as a label field
	Field as Value field	Menu references field as a value field
	Field in Automation action	Active Link references field in an Automation action
	Field in Change Field action	Active Link references field in a Change Field action
	Field in DDE action	Active Link references field in a DDE action
	Field in Goto action	Object references field in a Goto action
	Field in menu qualification	Menu references field in a qualification
	Field in Message action	Object references field in Message action
	Field in Notify action	Filter references field in a Notify action
	Field in Push Fields action qualification	Object references field in a Push Fields action qualification
	Field in qualification	Object references field in a qualification

Table 2-4: Relationship types (Sheet 2 of 4)

Field or Object Type	Relationship Type	Description
Field (continued)	Field in Run Process action	Object references field in a Run Process action
	Field in Set DDE action	Active Link references field in a Set DDE action
	Field in Set Fields action Filter API	Filter references field in Set Fields action Filter API definition
	Field in Set Fields action qualification	Object references field in Set Fields action qualification
	Field in Set Fields action Run Process command	Object references field in a Set Fields action Run Process command
	Field in Set Fields action SQL command	Object references field in a Set Fields action SQL command
	Field in Set Fields action Web Service	Filter references field in Set Fields action Web Service definition
	Field in SQL Command action	Object references field in a SQL command action
	From field in Push Fields action	Object references (From) field in Push Fields action
	From field in Set Fields action	Object references (From) field in Set Fields action
	Input From field in Service action	Object references Input From field in a Service action
	Input To field in Service action	Object references Input To field in a Service action
	Map Close From field in Open Window action	Active Link references a Map Close From field in an Open Window action
	Map Close To field in Open Window action	Active Link references a Map Close To field in an Open Window action
	Map Open From field in Open Window action	Active Link references a Map Open From field in an Open Window action
	Map Open To field in Open Window action	Active Link references a Map Open To field in an Open Window action
	Message field in Open Window action	Active Link references a Message field in an Open Window action
	Output From field in Service action	Object references Output From field in a Service action
	Output To field in Service action	Object references Output To field in a Service action

Table 2-4: Relationship types (Sheet 3 of 4)

Field or Object Type	Relationship Type	Description
Field (continued)	Qualification field in Open Window action	Active Link references a Qualification field in an Open Window action
	Report field in Open Window action	Active Link references a Report field in an Open Window action
	Request Id field in a Service action	Object references Request Id field in a Service action
	Sort field in Open Window action	Active Link references a Sort field in an Open Window action
	Target Location field in Open Window action	Active Link references a Target Location field in an Open Window action
	To field in Push Fields action	Object references (To) field in Push Fields action
	To field in Set Fields action	Object references (To) field in Set Fields action
	Web Service field	Web Service references a field
Filter	Guide filter	Filter Guide references filter
	Packing List filter	Packing List references a filter
Form	Active Link Guide form	Active Link Guide references a form
	Application form	Application references a form
	Application primary form	Application references a form as its primary form
	Dialog form in Open Window action	Active Link references a Dialog form in an Open Window action
	Escalation associated form	Escalation related to form
	Escalation primary form	Escalation related to primary form
	Escalation selected secondary form	Escalation related to chosen secondary form
	Filter associated form	Filter related to form
	Filter Guide form	Filter Guide references a form
	Filter primary form	Filter related to primary form
	Filter selected secondary form	Filter related to chosen secondary form
	Form in Service action	Object references form in a Service action
	Packing List form	Packing List references a form
	Table field form	Field references form as a table field
	Web Service form	Web Service references a form

Table 2-4: Relationship types (Sheet 4 of 4)

Field or Object Type	Relationship Type	Description
Guide	Guide in Call Guide action	Object references guide in a Call Guide action
	Packing List active link guide	Packing List references an active link guide
	Packing List filter guide	Packing List references a filter guide
Image	Image in field	Field references image object
	Image in form	Form references image object
	Packing List image	Packing List references an image
Menu	Menu form	Menu references a form
	Menu in field	Field references menu
	Packing List menu	Packing List references a menu
Packing list	Application packing list	Application references a packing list
	Packing List packing list	Packing List references a packing list
Web Service	Packing List web service	Packing List references a web service

Using the list in the Relationships tab, you can perform the following actions:

- Click a column heading to sort the list by the values in that column.
Sort on Object Types when you need to find a certain object, such as a menu. Sort on Relationship Types when you need to find objects that have a specific relationship, such as a workflow action that references a selected field.
- Select one item in the list. The Relationships tab does not allow multiple selection.
- Double-click an item to open the object in its editor.
If the item is a field, it is selected in the form editor. If the item is a workflow action with an action reference, the action is selected in the workflow editor.
- Right-click an item and choose Show Relationships to update the Relationships tab with the relationships of the selected item.

- Click the Previous and Next buttons to move back and forth through a history of relationship lists:
 - Click the Previous button with the left-pointing yellow arrow in the tab group toolbar to return to the relationships shown before choosing Show Relationships in the list or clicking the Next button.
 - Click the Next button with the right-pointing yellow arrow in the tab group toolbar to return the relationships shown before clicking the Previous button.
- Click the Refresh button with one green and one yellow arrow in the tab group toolbar or press F5 to refresh the list.

Creating objects

You can use the File > New submenu to create an object, but the AR System Navigator provides a direct way to create an object on a specific server or in a specific application.

► To create an object on a server

- 1 In the server branch, open the All Objects branch.
- 2 Right-click the appropriate object type, and choose the appropriate New menu command.

The object editor opens. For more information, see “Working with editors and related tabs” on page 49 and the guides listed in Table 2-5.

Table 2-5: Object editor references

To create...	See...
Active link Active link guide Escalation Filter Filer guide	<i>Workflow Objects Guide</i>
Application	<i>Form and Application Objects Guide</i>
Distributed mapping Distributed pool	<i>BMC Remedy Distributed Server Option Guide</i>
Flashboard Flashboard alarm Flashboard variable	<i>BMC Remedy Flashboards Guide</i>
Form	<i>Form and Application Objects Guide</i>
Image	<i>Form and Application Objects Guide</i>
Menu	<i>Form and Application Objects Guide</i>
Packing list	<i>Form and Application Objects Guide</i>
Web service	<i>Integration Guide</i>

► **To create an object in an application**

- In the Applications branch, right-click the name of the application and choose New Object > New *objectType*.

After you complete any initial dialog boxes, the object editor opens in the editor area. For more information, see “Working with editors and related tabs” on page 49 and the guides listed in Table 2-5.

► **To save a new object to the server**

- 1 Choose File > Save.

The Save *objectType* As dialog box appears.

- 2 Type the name of the object.

Object names must be unique for each AR System server. Names can be as many as 80 characters, including spaces.

- 3 Click OK.

NOTE

There are no other restrictions on names, but it is helpful to establish naming conventions for your work and to make names descriptive.

Modifying objects

You use object editors to make most modifications to server objects. See “Working with editors and related tabs” on page 49 for editor operations.

Use object lists and the Search Results tab to make the following modification to objects:

► **To rename an object**

- 1 If the object is open for modification, close the editor.
- 2 In an object list or the Search Results tab, right-click the object and choose Rename.
- 3 In the Rename dialog box, type the new name and click OK.

Object names must be unique for each AR System server. Names can be as many as 80 characters, including spaces. Application and packing lists have a single set of names, so you cannot create an application and a packing list with the same name.

When you rename an object, all references in any related object (for example, an active link attached to a form) are automatically updated.

► **To delete an object**

- 1 If the object is open for modification, close the editor.
- 2 In an object list or the Search Results tab, select the objects to delete.
- 3 Choose Edit > Delete.
- 4 In the Confirm Deletion dialog box, click OK.

The objects are removed from the server database.

When deleting server objects, remember the following important facts:

- If you delete a primary or secondary form of a join, the join form is also deleted.
- You cannot delete an object that is open for modification in BMC Remedy Developer Studio.
- When you delete a form, all associated data and workflow that is not associated with any other form is deleted. If workflow is shared by multiple forms, it is not deleted until the last form that uses it is deleted. Menus, applications, and packing lists must be deleted separately because they are independent of forms.
- When you delete an archive or audit form, the archive or audit properties for the base form are cleared. See the *Form and Application Objects Guide* for details about archive and audit.

► **To rename two or more objects**

- 1 Select objects in an object list.
Use the usual Windows methods to select multiple objects. For example, hold down CTRL and click an item to select or deselect it.
- 2 Right-click and select Edit.
- 3 In the Edit dialog box, select the Rename page.
- 4 In the Rename page, select the rename operation and type the text in the fields.
- 5 Click Apply to rename the objects or OK to rename the objects and close the dialog box.

► **To modify attributes of two or more objects**

- 1 Select objects in an object list.
- 2 Right-click and select Edit.
- 3 In the Edit dialog box, select the appropriate page.

Table 2-6 shows which pages are included for each object type. If you select objects of different types, only the common pages are included.

Table 2-6: Edit dialog box attribute pages for each object type

Object type	Edit dialog box attribute page				
	Associated Forms	Execution Options	Permissions	Change History	Help Text
Active link	+	+	+	+	+
Active link guide	+	+		+	+
Application			+	+	+
Escalation	+	+		+	+
Filter	+	+		+	+
Filter guide	+			+	+
Form			+	+	+
Image				+	+
Menu				+	+
Packing list			+	+	+
Web Service			+	+	+

4 To associate forms with workflow:

a Select the Associated Forms page.

The Associated Forms list includes all forms associated with *any* selected object.

b Click Add.

c In the Form Selector, select the forms to associate and click OK.

To filter the list of forms, type a pattern in the Name field. To move to a form in the list, type the first characters of the name in the Locate field.

d In the Edit dialog box, click Apply to associate the form or OK to associate the forms and close the dialog box.

5 To change workflow execution options:

a Select the Execution Options page.

Only execution options that apply to all workflow types selected are shown. A square in the check box indicates that some but not all of the selected objects have that execution option enabled.

b Select or clear the check boxes to set the appropriate execution options.

c To change the execution order, select an operation from the list and type an integer in the field.

d Click Apply to update the execution options or OK to update the execution options and close the dialog box.

6 To change object permissions:

a Select the Permissions page.

The No Permissions list contains the groups and roles that have no permissions for the selected objects. The Permissions list contains the groups and roles that have permissions for at least some of the objects. Groups and roles that have permissions for all objects have All Objects in the Applicable To column. Other groups and roles have Some Objects in that column.

b To assign permission to the group or role for all objects selected, click in the Applicable To and select All Objects.

c To assign permissions to new groups or roles, use the arrow buttons to move the appropriate groups and roles into the Permissions list.

d For object types that have access levels, for each group or role in the Permissions list, click the drop-down menu in the Permissions column to set the access level.

e Click Apply to update the permissions or OK to update the permissions and close the dialog box.

NOTE

To assign permissions for one group to multiple objects, see the discussion assigning permissions in the *Form and Application Objects Guide*.

7 To update the change histories:

a Select the Change History page.

b Type the update in the New Description field.

c Click Apply to update the change histories or OK to update the change histories and close the dialog box.

8 To update or replace the help texts:

a Select the Help Text page.

b Type the new help text in the Help Text field.

c To append the new text to the existing help text for each object, select the Append check box.

d Click Apply to update the help texts or OK to update the help texts and close the dialog box.

9 Click OK or Cancel to close the dialog box.

Working with editors and related tabs

This section introduces the BMC Remedy Developer Studio editors. See Table 2-5 on page 44 for references to the detailed documentation of the editors.

► To edit an object

- Double-click an object in an object list, the Relationships tab, or the Search Results tab.

The editor for the object opens in the editor area. The object name, the application it is in (if any), and the name of the AR System server are listed at the top of the editor. The same information, preceded by the object type are listed in the BMC Remedy Developer Studio title bar for the last selected editor in the editor area.

If you change an object and do not save your changes, the name of the object on the editor's tab has an asterisk before it.

► To save a new object to the server

- 1 Choose File > Save.

The Save *objectType* As dialog box appears.

- 2 Type the name of the object.

Object names must be unique for each AR System server. Names can be as many as 80 characters, including spaces.

- 3 Click OK.

NOTE

There are no other restrictions on names, but it is helpful to establish naming conventions for your work and to make names descriptive.

► To close all editors

- Right-click the tab for any editor and choose Close All.

When you exit BMC Remedy Developer Studio, all editors are closed.

Outline tab

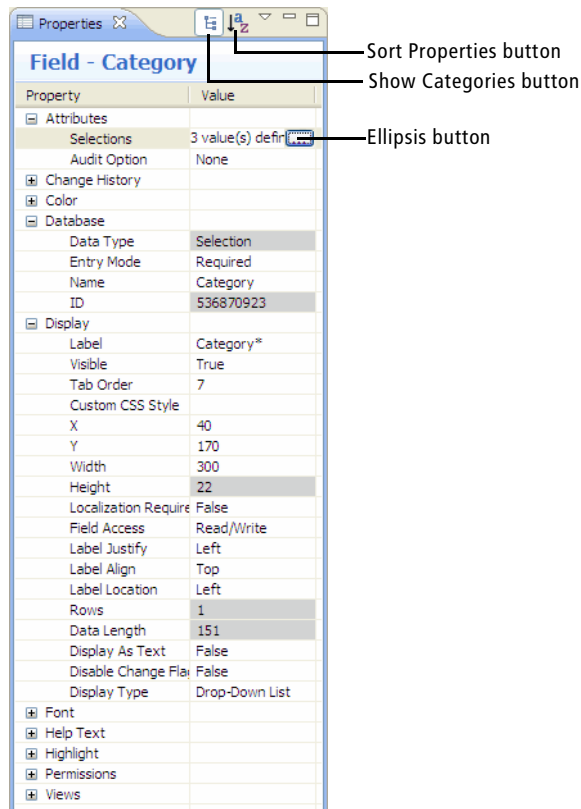
The Outline tab, also called the Outline view, displays a visual overview of the object in an editor, with the parts of the object shown in a tree. Use it to navigate within the editor. When you select an item in the outline, it is also selected in the editor and vice versa. The Outline is available for the application, distributed mapping, distributed pool, form, web service, and workflow editors.

Properties tab

The Properties tab, also called the Properties view, is a single place to view and modify the properties of the object that you are working on in an editor or the properties of a form view or a field on a form. This tab always shows the properties of the object, field, or form view in the active editor.

Read-only properties are shown with a grey background. Properties that can be modified are shown with a white background.

Figure 2-6: Properties tab



- ▶ **To switch the Properties tab between the category and single list layouts**
 - Click the Show Categories toggle button in the tab group toolbar.
- ▶ **To sort the properties alphabetically by name**
 - Select the Sort Properties toggle button in the tab group toolbar.
- ▶ **To return the properties to their default order**
 - Clear the Sort Properties toggle button in the tab group toolbar.

► To modify a property

- 1 Select the property in the Properties tab.
- 2 Edit the value in the Value column.
 - For numeric and short text values, type the value in the Value column.
 - For properties with a list of valid values, click the arrow and select a value from the list.
 - For long text and other complex values, click the ellipsis (...) button to open the dialog box that you use to specify the value.
- 3 Press ENTER or click elsewhere to accept the new value. Press Escape to cancel the property change.

Changes to object properties are saved to the server when you save the object.

See Table 2-5 on page 44 for references to the detailed documentation of the editors and the dialog boxes for the various properties.

Working with change history

For each server object that you create, AR System automatically records the owner (the user who created the object), the user who last modified the object, and the date and time of the last modification. You can view and in some cases modify this history information in the Change History category in Properties tab.

► To update the change history of a form

- 1 Open the form for modification.
- 2 Choose Form > Form Properties.
- 3 In the Form Properties, select the Change History page.
- 4 To change the ownership of the object, in the Owner field, enter the user name of the new owner.

NOTE

Any user with Administrator or Subadministrator permissions can modify a form, regardless of who the specified owner is for the object.

- 5 In the New Description field, type information about the object or about the change that you made.
- 6 Click OK.

A time stamp, your user name, and the text that you typed appear at the beginning of the Change History field.

► **To update the change history of an object other than a form or of a field**

- 1 Open the object for modification or select the field in the form editor.
- 2 To change the ownership of the object, in the Owner property, enter the user name of the new owner.

NOTE

Any user with Administrator or Subadministrator permissions can modify an object or field, regardless of who the specified owner is for the object.

- 3 In the New Description property, click the ellipsis (...) button.
- 4 In the New Description dialog box, type information about the object or about the change that you made.
- 5 Choose File > Save.

A time stamp, your user name, and the text that you typed appear at the beginning of the Change History property.

Working with help text

You can supply help text for forms and fields. Users of BMC Remedy User can view the help text as context-sensitive What's This? help. In most cases, this help describes the form or field, what it does, and how to use it.

Users of BMC Remedy User can view this help text in the prompt bar or in a pop-up window by performing one of the following actions:

- Choosing What's This? on the Help menu and then clicking the form
- Clicking the What's This? icon and then clicking on the form
- Right-clicking on the form, and choosing What's This?
- Pressing SHIFT+F1 and then clicking on the form

If you do not write help text, default field help appears in the BMC Remedy User prompt bar (if visible). This system-generated field help describes various field settings, such as the data type, maximum character limit, whether QBE is supported, and the like.

You can create help for users viewing forms in a browser by adding a Form Help button to a form. When users click the Form Help button, information about the form and each of its fields appears. For more information, see the *BMC Remedy Mid Tier Guide*.

The help text that you supply for all server objects except forms is available only to administrators and subadministrators in BMC Remedy Developer Studio. You can, however, compose extra help text for guides that users can see in the prompt bar of BMC Remedy User as they are guided through a form or a series of forms. For more information about guides, see the *Workflow Objects Guide*.

► **To create context-sensitive help text for user to see in BMC Remedy User**

- 1 Open a form for modification.
- 2 Access the help text.
 - For the Form help text, choose Form > Form Properties and click the Help Text page
 - For a field, select the field and click the ellipsis (...) button in the Help Text property.
- 3 In the Help Text field, type the text for the users and click OK.
- 4 Choose File > Save to save the changes to the form.

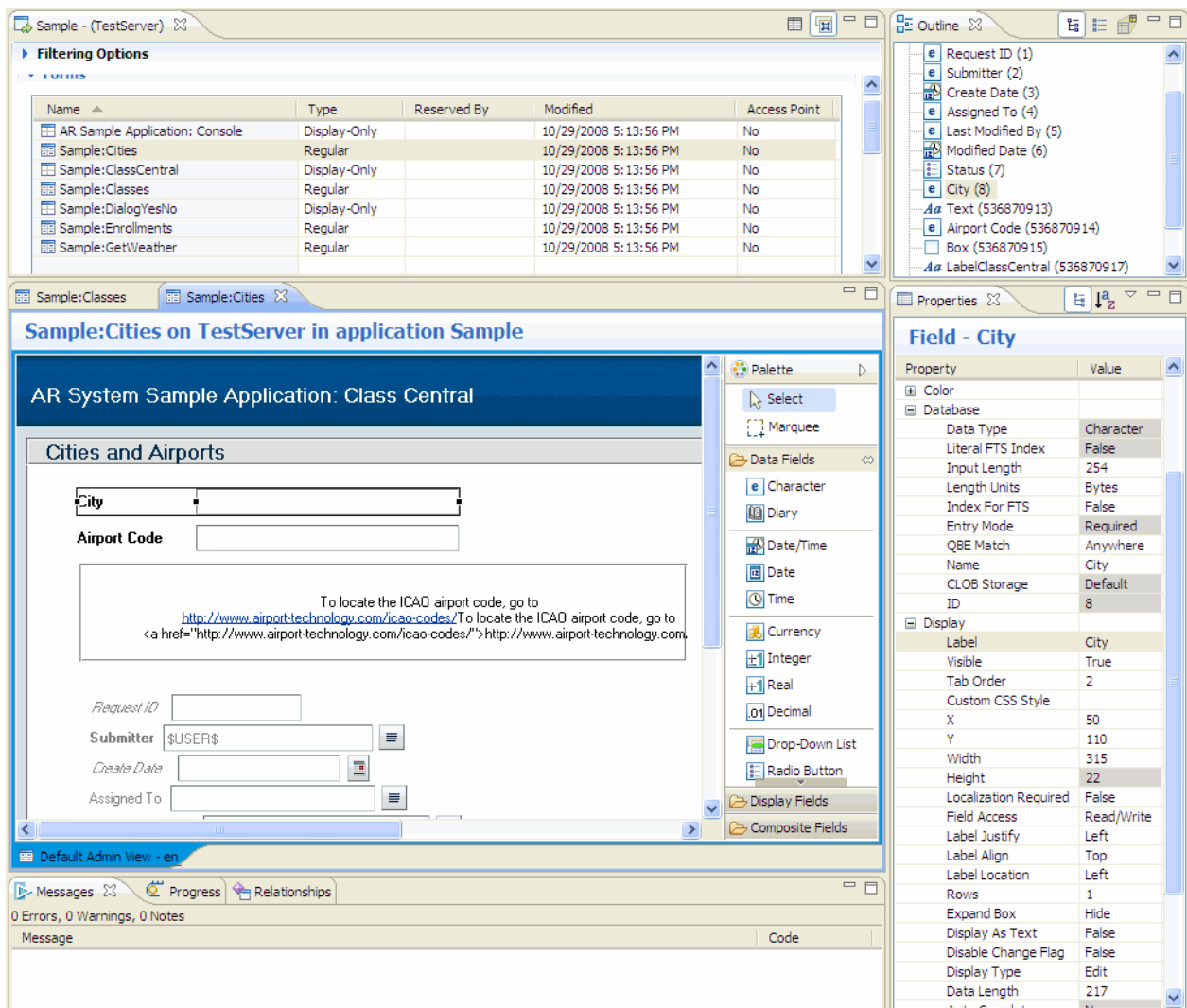
► **To create help text for application developers to see in BMC Remedy Developer Studio**

- 1 Open an object for modification.
- 2 Click the ellipsis (...) button in the Help Text property.
- 3 In the Help Text field, type the information about the object for application developers and click OK.
- 4 Choose File > Save to save the changes to the object.

Form editor

Use the form editor to create and modify forms. When you work on a form in the form editor, the editor and the associated views might look like Figure 2-7.

Figure 2-7: Form editor and associated views



In Figure 2-7:

- The object list tab group displays an application list with a form selected in the Forms panel.
- The form editor displays the form.
- The Palette on the right side of the form editor controls the editor cursor for selecting and creating fields.
- The Messages tab displays messages about the form. See “Messages tab” on page 58.
- The Outline tab displays the fields on the form in a tree that represents how they are nested. To switch between a tree overview and a zoom overview, click the buttons in the tab group toolbar. See “Outline tab” on page 49.
- The Properties tab displays the properties of the selected field or fields. If no field is selected, it shows the properties of the selected form view. See “Properties tab” on page 50.

Form menu

When the form editor is active, the Form menu is included in the menu bar. When the form editor has focus, the commands on the Form menu are available.

Layout menu

When the form editor is active, the Layout menu is included in the menu bar. When the form editor has focus, the Layout menu commands are available.

Form toolbar

When the form editor is active, the form toolbar is displayed.

For details on using the form editor, see the *Form and Application Objects Guide*.

Workflow editors

The active link, filter, and escalation editors are similar, though the available actions and the contents of some panels differ. These editors include the following panels:

- Associated Forms
- Execution Options
- Run If Qualification
- Error Handler (filter editor only)
- If Actions
- Else Actions

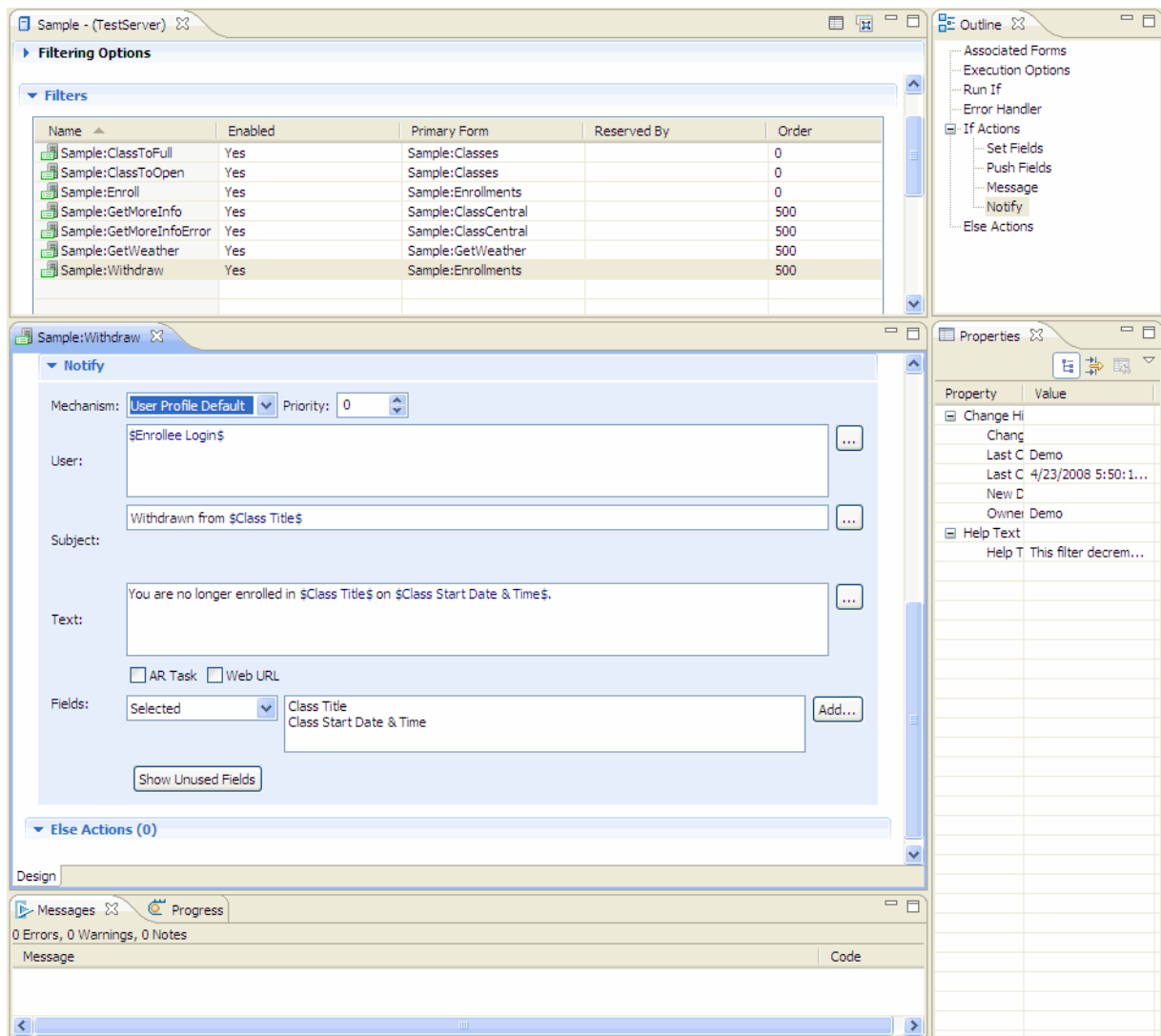
The active link guide and filter guide editors have similar formats. The active link guide editor includes the following panels:

- Associated Forms
- Display
- Entry point
- Active Links and Labels

The filter guide editor includes the following panels:

- Associated Forms
- Display
- Filters and Labels

Figure 2-8: Filter editor and associated views



In Figure 2-8:

- The object list tab group displays an application list with a filter selected in the Filters panel.
- The filter editor displays the filter. To open and close a panel, click the triangle or the heading. Each panel's pop-up menu has commands to open and close all panels.
- The Messages tab displays messages about the filter. See “Messages tab” on page 58.
- The Outline tab displays the panels and sub-panels in a tree that represents how they are nested. See “Outline tab” on page 49.
- The Properties tab displays the properties of the filter. See “Properties tab” on page 50.

Workflow menu

When a workflow editor is active, the Workflow menu is included in the menu bar. When the workflow editor has focus, the commands on the Workflow menu are available.

Workflow toolbar

When a workflow editor is active, the workflow editor toolbar is displayed.

For more information, see the *Workflow Objects Guide*.

Application editor

The application editor uses panels to organize the application attributes and contents. The editor contains the following panels:

- General
- Forms
- Packing Lists
- Support Files
- Access Points
- Data
- Statistics
- Help Text

To open and close a panel, click the triangle or the heading. Each panel's pop-up menu has commands to open and close all panels.

When the application editor has focus, the Properties tab displays the application properties.

The Application menu and toolbar contain commands to expand and collapse editor panels.

For more information, see the *Form and Application Objects Guide*.

Packing list editor

The packing list editor has fields for the packing list label and description and a list of objects.

For more information, see the *Form and Application Objects Guide*.

Menu editors

Each type of AR System menu has a menu editor. When a menu editor has focus, the Properties tab displays the menu properties.

For more information, see the *Form and Application Objects Guide*.

Image editor

The image editor has a field for the image description, a preview area, and command buttons to load an image and to save it to the AR System server. When the image editor has focus, the Properties tab displays the image properties.

For more information, see the *Form and Application Objects Guide*.

Distributed mapping and distributed pool editors

The distributed mapping editor has panels for basic attributes, options, transfer mapping, and return mapping. The distributed pool editor has a panel for basic attributes. When either editor has focus, the Properties tab displays the object properties.

For more information, see the *BMC Remedy Distributed Server Option Guide*.

Flashboard editors

The flashboard editor has panels for the flashboard design, the variables, and the X and Y axes. The flashboard variable editor has panels for variable, operation, and data collection. The flashboard alarm editor has a panel for the alarm. When any of these editors has focus, the Properties tab displays the object properties.

For more information, see the *BMC Remedy Flashboards Guide*.

Messages tab

When an editor is active, the Messages tab, also called the Messages view, lists any warnings about the object that you are editing. They often note fields that must be completed before you can save the object.

The icon on the Messages tab is the icon for the highest severity message. The tab also shows a count of all messages. The minimized icon shows the highest severity with the counts on a tool tip.

► To fix a problem described in a warning

- 1 Double-click the message in the Messages tab.

If the message is linked, the insertion point moves to the item in the object editor that you must change.

- 2 Fix the problem reported in the message.

The message is removed from the Messages tab.

— NOTE —

When you try to save an object and the AR System server returns an error, that error is listed in the Messages tab, but you it is not linked to the object in the editor.

Working with working lists

Create a working list to keep references to objects that you need to view, change, or export to complete an application development or maintenance task. You can add and remove objects from working lists as you work with them.

Descriptions of your working lists are stored locally in your BMC Remedy Developer Studio workspace. Working lists refer to objects on the AR System server, but the server does not record any information about working lists or an object's membership in them.

BMC Remedy Developer Studio has the following types of working lists:

- **View-by-form list**—Contains one or more AR System forms and all objects related to them.
- **Application view-by-form list**—Contains one or more AR System forms from one application and all objects related to them.
- **Related list**—Contains one or more AR System objects and optionally either directly related objects or all related objects.
- **Reserved Objects**—Contains all objects reserved on an AR System server with object reservation enforced. (Subadministrators see only those objects they have reserved.) This list cannot be modified or deleted. See the *Form and Application Objects Guide*.

Every time you open a working list, the list is updated with the current related objects. For example, if a filter is created that is associated with a form in a view-by-form list, the new filter is included the next time that you open the list.

NOTE

Although there is no limit on the number of objects in a working list, lists with many objects, included related objects, are slower to open than lists with fewer objects.

► To create a view-by-form list

- 1 In the AR System Navigator, expand *serverName*, right-click Working Lists, and choose New View by Form List.
- 2 In the New View by Form List dialog box, enter the List Name.
- 3 Click Add.
- 4 In the Form Selector dialog box, select one or more forms to include in the list, and click OK.

To filter the list of forms, type a pattern in the Name field. To move to a form in the list, type the first characters of the name in the Locate field.

Use the usual Windows methods to select multiple objects. For example, hold down the CTRL key and click an item to select or deselect it.

- 5 Click OK to save the list.

► **To create a view-by-form list including only forms from an application**

- 1 In the Applications branch in the AR System Navigator, right-click the application name and choose New Application View by Form List.
- 2 In the New Application View by Form List dialog box, enter the List Name.
- 3 Click Add.
- 4 In the Form Selector dialog box, select the forms to include in the list, and click OK.
The Form Selector dialog box lists only the forms in the application. To further filter the list of forms, type a pattern in the Name field. To move to a form in the list, type the first characters of the name in the Locate field.
- 5 Click OK to save the list.

► **To create a related list**

- 1 In the server branch in the AR System Navigator, right-click Working Lists and choose New Related List.
- 2 In New Related List dialog box, enter the List Name.
- 3 Click Add.
- 4 In the Add Items dialog box, select the objects to include in the list.
To filter the list of object, type a pattern in the Name field, select an application from the Application drop-down list, or clear the appropriate Object Category check boxes. To move to a form in the list, type the first characters of the name in the Locate field.
- 5 In the Add Items with Related Property drop-down list, choose to add just the objects selected, the object and directly related objects, the objects and all related objects, or, for applications and packing lists, the object and its contents.
See the information about exporting objects in the *Form and Application Objects Guide* for descriptions of the related options.
- 6 Click OK.
- 7 In the Related List dialog box, to see which objects will be included in the list, select an object and click Show Related.
- 8 To remove an object and its related objects, select it in the list and click Remove.
To remove all objects from the list, click Remove All.
- 9 To change which related objects are included in the list with the selected object, select the objects in the list and click and change the value in the Related column or click the buttons.
See the information about exporting objects in the *Form and Application Objects Guide* for descriptions of related options.
- 10 Click OK to save the list.

NOTE

When you export objects, you can select an option to create a related list containing the exported objects.

► To modify a working list

- 1 In AR System Navigator, expand *serverName* > Working Lists, right-click the list name, and choose Edit.
- 2 In the Edit View by Form List or Edit Related List dialog box, modify the list as necessary.

For details of how modify working lists, see the following procedures:

- “To create a view-by-form list” on page 59
- “To create a view-by-form list including only forms from an application” on page 60
- “To create a related list” on page 60.

► To export the objects in a working list

- 1 In the Working Lists branch of the server branch in the AR System Navigator, right-click the name of the list and choose Export Working List Content.
- 2 In the Export To File dialog box, select or enter a file to write the object definitions to.
- 3 Click Save to start the export operation.

See the information about exporting objects in the *Form and Application Objects Guide*.

► To save a working list as import/export commands

- 1 In the Working Lists branch of the server branch in the AR System Navigator, right-click the name of the list and choose Save as Import/Export Commands.
- 2 In the Save as Import/Export Commands dialog box, select or enter a file to write the import/export commands.
- 3 Click Save to create the file.

For the use of this XML file, see the information about the import/export CLIs in the *Integration Guide*.

► To delete a working list

- In the Working Lists branch of the server branch in the AR System Navigator, right-click the name of the list and choose Delete.

Working with applications and packing lists

An application is a server object that contains references to a collection of forms. Based on the forms included in the application, other objects related to those forms are also included in the application. Use applications to group sets of objects to accomplish particular tasks so that you and your users can interact with the application as a functional unit.

Like an application, a packing list is a server object that contains references to a collection of objects. Both applications and packing lists act as containers of other server objects.

In BMC Remedy Developer Studio, applications and packing lists appear in the AR System Navigator and in object lists. From the AR System Navigator, you can open the object list to access the objects in the application or packing list. From the AR System Navigator or the list of application or packing lists, you can edit the application or packing list to change the objects in it.

Applications and packing lists are AR System server objects that contain other server objects. If you open an application or a packing list, the application or packing list view opens in the object list tab group, and you can access the objects in the application or packing list. If you create or edit an application or packing list, the application or packing list editor opens in the editor area, and you can add or remove objects and change other properties.

You can also open in an object list tab the list of all applications from the Applications item or the list of all packing lists from the Packing Lists item in the All Objects branch of the server tree. From these object lists, you can edit existing application or packing lists.

This section explains how to create, open, modify, export, and delete applications and packing lists.

► **To create an application on a server**

- 1 In the server branch, right-click the Applications and choose New Application.
- 2 In the New Application dialog box, select Local Application or Deployable Application, and click Finish.

The application editor opens in the editor area. For more information, see the *Form and Application Objects Guide*.

► **To create a packing list on a server**

- In the server branch, right-click the Packing Lists and choose New Packing List.

The packing list editor opens in the editor area. For more information, see the *Form and Application Objects Guide*.

► **To open an application or a packing list**

- In the Applications or Packing Lists branch, double-click the name of the application or packing list.

A list of all the objects opens in the object list tab group. See “Objects in object lists” on page 29.

► **To modify an application or a packing list**

- In the Applications or Packing Lists branch, right-click the name of the application or packing list and choose the Edit command.

The application editor or the packing list editor opens in the editor area. See the *Form and Application Objects Guide* for details of modifying the application or packing list.

► **To create an object in an application**

- In the Applications branch, right-click the application and choose a New *objectType* command from the New Object menu.

See the *Form and Application Objects Guide* and the *Workflow Objects Guide* for details of creating objects.

► **To delete an application or a packing list**

- 1 In the Applications or Packing Lists branch, right-click the name of the application or packing list and choose the Delete command.

A Confirm Deletion dialog box appears.

- 2 Click OK to delete the object or Cancel to preserve the object.

► **To save a packing list as import/export commands**

- 1 In the Packing Lists branch of the server branch in the AR System Navigator, right-click the name of the list and choose Save as Import/Export Commands.
- 2 In the Save as Import/Export Commands dialog box, select or enter a file to write the import/export commands.
- 3 Click Save to create the file.

For the use of this XML file, see the information about the import/export CLIs in the *Integration Guide*.

► **To export an application**

- 1 In the Applications branch, right-click the name of the deployable application and choose Export Application.
- 2 In the Export Application dialog box, select a file to write the object definitions to.
- 3 Click Save to start the export operation.

See the information about exporting objects in the *Form and Application Objects Guide*.

NOTE

You cannot export a local application using Export Application. You can export an application object without its contents using Export to File.

► **To export a packing list**

- 1 In the Packing Lists branch, right-click the name of the packing list and choose Export Packing List.
- 2 In the Export Packing List dialog box, select a file to write the object definitions to.
- 3 Click Save to start the export operation.

See the information about exporting objects in the *Form and Application Objects Guide*.

Working with perspectives

Use Eclipse commands to customize your perspective to the way that you want to work, to use the alternative Editor perspective included in BMC Remedy Developer Studio, or to create your own custom perspective.

Arranging tabs in the perspective

The default layout of the Developer perspective includes five tab groups of views arranged around the editor area. A tab group can contain zero or more views or editors.

Each view tab group has command buttons that apply to the tab in the group that is selected. When the tab group is too narrow for the command buttons to fit next to the Minimize and Maximize buttons, they appear in the selected view below the tab.

Each view or editor tab also has a pop-up menu with Eclipse commands that you can use to change the Developer perspective to meet your needs.

► **To open a closed tab**

- Select Window > Show View and select the view from this submenu.

The Analyzer, Progress, Relationships, and Search Results tabs open automatically when needed.

► **To access a tab in a tab group that is not visible**

- 1 Click the Show List button at the right of the tabs.
- 2 In the list of views or editors, click the one to show.

The views whose tabs are not visible are shown in boldface in the list.

► **To change the order of tabs in a tab group**

- Click and drag the tab to its new location.

► To create a new tab group with an existing view or editor

- 1 Click and drag the tab of the view or editor until the mouse pointer becomes an arrow.

The arrow point to the location of the new tab group.

- 2 Drop the tab when the grey drag frame is where you want the new tab group.

Editor tab groups must be in the editor area.

Use this procedure to work with editors or object lists side by side or one above another.

► To move a tab group

- 1 Click and drag the area to the right of the tabs until the mouse pointer becomes an arrow.

The arrow point to the new location of the tab group.

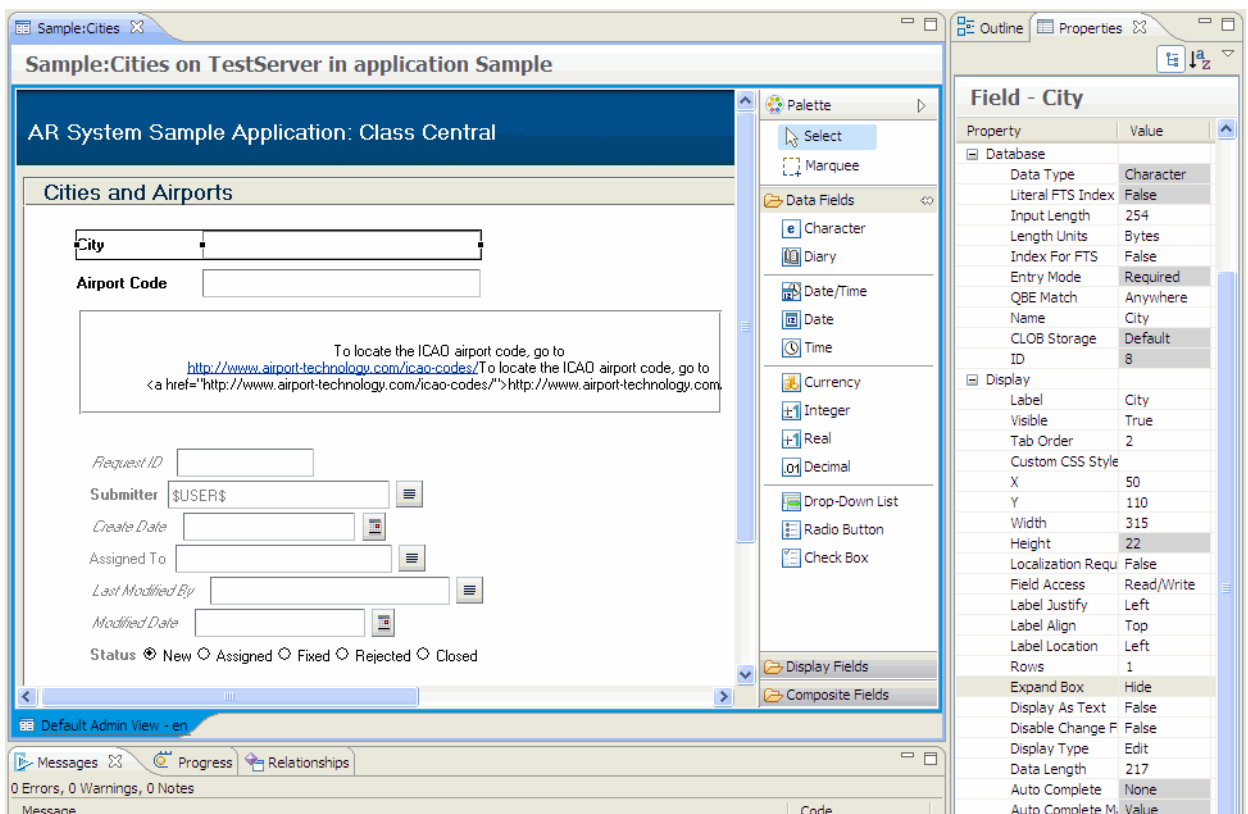
- 2 Drop the tab group when the grey drag frame is where you want it.

► To move a view or editor from one tab group to another

- Click and drag the tab of the view or editor into the destination tab group.

Figure 2-9 shows the result of dragging the Properties tab into the tab group with the Outline tab.

Figure 2-9: Outline and Properties tabs in one tab group



► **To minimize or maximize a tab group**

- Click the Minimize or Maximize button.

Toolbars, called shortcut bars, in the margins of the application window represent the minimized tab groups. When you maximize a tab group, the other tab groups are minimized.

TIP

You can control where the shortcut bar for a tab group appears in the window margins by dragging it to the location you prefer. For example, you can drag all the shortcut bars to the status line so that the left and right margins do not get wider when you minimize a tab group.

► **To work in a minimized view tab group**

- 1 Click the view icon (not the Restore icon) for the view that you want to use.

The view opens temporarily.

- 2 Perform the operations in the open view.
- 3 Click the view icon again to return the view to minimized.

If you click any other view or editor, the temporarily open view minimizes again.

Use this procedure to work in the Outline or Properties tab when you have an editor maximized.

► **To restore a tab group**

- Click the Restore button in the minimized tab group toolbar.

If all other tab groups are minimized when one is maximized, clicking any Restore button restores them all.

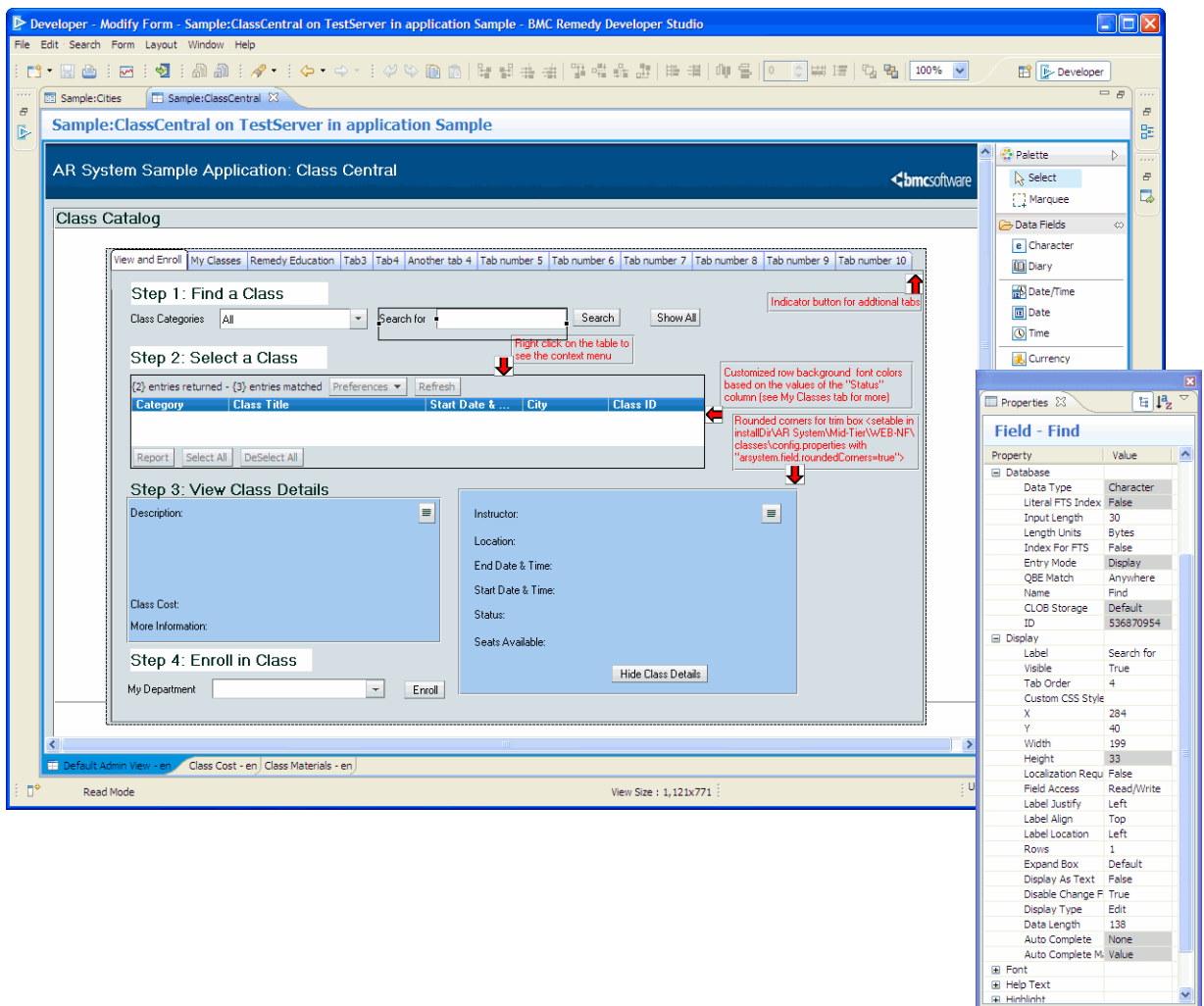
► **To detach a view**

- 1 Right-click the view tab and choose Detached.
- 2 Move and resize the detached window as needed.

Use this procedure to work in a maximized editor with the Outline or Properties tab in a separate window on your desktop.

Figure 2-10 on page 67 shows the Property tab detached with the form editor maximized.

Figure 2-10: Form editor maximized with Property tab detached



► To re-attach a detached view

- Right-click the view tab and choose Detached to clear the check mark.

The view does not return to a closed tab group. If the view does not return to its previous position, use “To move a view or editor from one tab group to another” on page 65 to put it back or the next procedure to reset all the view tab groups.

► To reset the perspective to its default layout

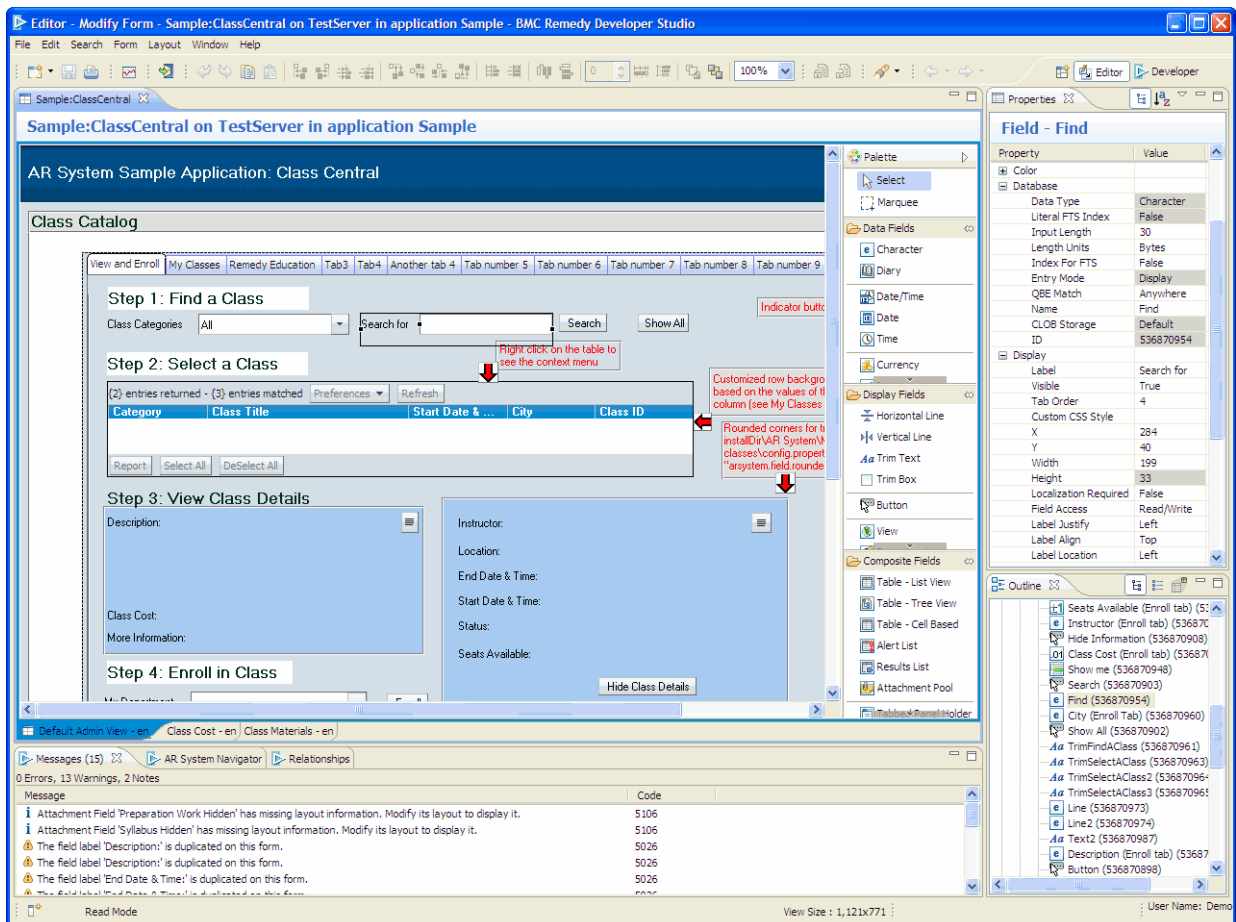
- 1 Choose Window > Reset Perspective.
- 2 Click OK in the confirmation dialog box.

Resetting the Developer perspective closes all object list views.

Editor perspective

BMC Remedy Developer Studio includes a perspective that is specialized for editing objects.

Figure 2-11: Editor perspective



Open the Editor perspective and switch to it when you need a large editor area. This perspective has the Properties tab in the top right corner, the Outline in the bottom right corner, and the Messages and Relationships tabs and the AR System Navigator in a tab group in the bottom left.

Perspective operations

You can save perspectives customized to the way that you want to work using the Eclipse commands described in this section.

► To save a custom perspective

- 1 Choose Window> Save Perspective As.
- 2 In the Save Perspective As dialog box, give the perspective a name and click OK.

► To open a perspective

- 1 Choose Window > Open Perspective> Other.
- 2 In the Open Perspective dialog box, select the appropriate perspective and click OK.

If the perspective is open, switch to it by selecting it in the perspective bar to the right of the toolbar.

NOTE

When you start BMC Remedy Developer Studio, it opens the perspectives that were open when you last exited. If the perspective that has the input focus does not display the AR System Navigator, BMC Remedy Developer Studio does not display the Login dialog box. To display the Login dialog box, switch to a perspective that displays the AR System Navigator or open it in the current perspective.

One way to use a custom perspective is to set it up for certain work and switch to it when you need it. For example, you can set up a Form Edit perspective like Figure 2-10 on page 67 and switch to it to edit a form.

► To switch to another open perspective

- Click the icon or name of the perspective in the Perspective bar in the top left corner of the BMC Remedy Developer Studio window.

Appendix

A For the BMC Remedy Administrator User



This section includes information that you can use as you switch from BMC Remedy Administrator to BMC Remedy Developer Studio. The following topics are provided:

The following topics are provided:

- Differences (page 72)
- Frequently asked questions (page 79)

Differences

This section summarizes differences between BMC Remedy Administrator and BMC Remedy Developer Studio. See “Frequently asked questions” on page 79 for more useful information.

Login

Table A-1: Login differences

Function	BMC Remedy Developer Studio	BMC Remedy Administrator
Change user or servers.	<ol style="list-style-type: none">1 Choose File > Login to open the Login window.2 Click the Edit Server List button on the Login window to open the Edit Server List dialog box.	<ul style="list-style-type: none">■ Choose Tools > Login.■ Choose Tools > Servers.
Maintain different lists of servers.	Switch Eclipse workspaces when you log in. Information in the workspaces is not shared with BMC Remedy User.	Maintain multiple home directories, which are shared with BMC Remedy User.

Permissions

Table A-2: Permissions differences

Function	BMC Remedy Developer Studio	BMC Remedy Administrator
Assign group permissions.	Right-click the group in the Groups object list and choose Assign Permissions from the pop-up menu to open the Assign Group Permissions dialog box.	Double-click the group in the Groups list to open the Group Permissions dialog box.

Server and object navigation

Table A-3: Server and object navigation differences (Sheet 1 of 2)

Function	BMC Remedy Developer Studio	BMC Remedy Administrator
Group or visually compare different lists of objects.	There is a single AR System Navigator view that shows all servers. Each distinct object list can be opened once. You can open a separate BMC Remedy Developer Studio using a different workspace and open the same object list with different filtering or other settings.	Create new Server Window.
Display a list of all objects of a type (for example, list of all filters).	Double-click the object type in the All Objects subtree in AR System Navigator.	Click the object type in the server object tree in Server Window.
Find an object in a list.	<ul style="list-style-type: none"> ■ In the object list, open the Filtering Options or select an object in the list and type the one or more characters to move the selection to the first object that starts with those characters. ■ Choose Search > Search to list all objects that contain the search text. 	<ul style="list-style-type: none"> ■ Choose File > Find. ■ Press F3.
Switch to another window.	<ul style="list-style-type: none"> ■ To switch to an editor, hold down CTRL and press F6 until the one that you want is selected. ■ To select a view, hold down CTRL and press F7 until the one that you want is selected. 	Hold down CTRL and press TAB.
View objects associated with a form (View by Form functionality).	In AR System Navigator, create a custom View by Form working list. This definition is persistent.	Create a new Server Window and configure list of forms. This is not persistent.
View the objects in an application.	Double-click the application node under Applications in AR System Navigator.	Open the Application Window.
View the list of applications and edit their properties.	<ul style="list-style-type: none"> ■ In the AR System Navigator, expand the Applications node under <i>serverName</i>, right-click an application node, and choose Edit Application. ■ Double-click the Application node under All Objects in AR System Navigator to open the Applications object list. Double-click the application in the list to open the Application editor. 	<ol style="list-style-type: none"> 1 Click on the Applications node to open the list. 2 Right-click on the selected application and select Properties.

Table A-3: Server and object navigation differences (Sheet 2 of 2)

Function	BMC Remedy Developer Studio	BMC Remedy Administrator
View more columns in an object list.	<ol style="list-style-type: none"> 1 Choose Window > Preferences. 2 In the Preferences dialog box, open BMC Developer Studio and click Object List View. 3 Select the object list type from the list and configure the columns to display and their order. 	Choose View > Details.
Create a new object (not in an application context).	<ul style="list-style-type: none"> ■ Right-click the type node in AR System Navigator All Objects subtree. ■ Choose File > New > <i>objectType</i>. 	<ul style="list-style-type: none"> ■ From Server Window, choose File > New Server Object or the New Server Object toolbar button. Then, select the object type. ■ Right-click an object type node in a server tree, and select the command from the pop-up menu.
Create New Object (in an application).	<ol style="list-style-type: none"> 1 Select the application node in the Applications subtree in AR System Navigator (not under All Objects). 2 Right-click the application and select the object type from the New Object submenu of the context menu. 	<ul style="list-style-type: none"> ■ From the Application Window, choose File > New Server Object. ■ Click the New Server Object toolbar button, and select the object type.
View roles.	In the AR System Navigator All Objects subtree, double-click Roles. This is a distinct node from Groups. In this release, you can only view roles in an object list; you cannot create or edit them.	In the Application Window, click Roles/Groups.

Forms

Table A-4: Forms differences (Sheet 1 of 3)

Function	BMC Remedy Developer Studio	BMC Remedy Administrator
Switch form views.	Select a different view tab at the bottom of the form layout area.	Choose Form > Select a View.
Create a new field.	<ul style="list-style-type: none"> ■ Right-click in the form layout area and choose the field type from the Create a New Field submenu. ■ Use the form editor Palette. ■ Choose Form > Create a New Field. 	<ul style="list-style-type: none"> ■ Right-click in form layout area. ■ Choose Form > Create a New Field.

Table A-4: Forms differences (Sheet 2 of 3)

Function	BMC Remedy Developer Studio	BMC Remedy Administrator
Select multiple fields.	<ul style="list-style-type: none"> ■ Hold down CTRL and click a field in the form editor or in the Outline tab to add it to or remove it from the selection. ■ Hold down SHIFT and drag a rectangle around the fields to add to the selection. ■ Hold down CTRL and drag a rectangle around the fields to add to or remove from the selection. <p>Note: Select the Marquee tool in the Palette to drag a rectangle instead of dragging a field.</p>	<ul style="list-style-type: none"> ■ Hold down SHIFT and click a field to add to or remove from the selection. ■ Drag a rectangle around the fields to select.
Move a field using the arrow keys.	<ol style="list-style-type: none"> 1 Select one or more fields. 2 Press the period key to enter the arrow key mode. 3 Press the arrow keys to move the field. 4 Press ENTER to complete the move or Escape to cancel the move. <p>Press the period key repeatedly to enter other arrow key modes that resize the fields.</p>	Select one or more fields and press the arrow keys to move it.
Field properties.	Select a field and the properties appear in the Properties tab.	Double-click the field or select the field and click the Field Properties button.
View properties.	Click the layout background and the properties appear in the Properties tab.	Choose Form > Current View > Properties.
Resize a view.	<ol style="list-style-type: none"> 1 Choose Layout > Show Actual View Size. 2 Select the view. 3 Drag the resize handles. 	Resize the form window and save the form.
Find a field.	<ul style="list-style-type: none"> ■ Select the field in the Outline View Tree Overview. ■ Choose Edit > Find/Replace to open the Find Field dialog box (which also supports find by label, partial search, and find next). 	Use name or label pull-down lists at the top of the layout area.

Table A-4: Forms differences (Sheet 3 of 3)

Function	BMC Remedy Developer Studio	BMC Remedy Administrator
Tree / Table Properties.	<ol style="list-style-type: none"> 1 Select the table field. 2 On the Tree/Table property in the Properties tab, click the ellipsis (...) button to open the Tree/Table Properties dialog box. 	Open the field properties as with any other field.
Default Value and other multiple-line text properties.	Each time you press ENTER, in the text entry dialog box, two non-printing characters are added to the value. They appear as two rectangles in the field in BMC Remedy Administrator. AR System components treat new lines represented by either one or two non-printing characters correctly.	Each time you press ENTER, in the text entry dialog box, one non-printing character is added to the value. That character appears as a rectangle in the field.
Navigation field item editor.	Right-click the Navigation field and choose Edit Navigation Items. To display or edit the items in a different Navigation field, select that field in the form. To close the Edit Navigation Items dialog box, click Close.	Open the Navigation Items editor from the Navigation Items tab of the Field Properties dialog box.
Edit Menu Bar and Navigation field item properties.	To display the item properties in the Properties tab, select the item in the Edit Navigation Items dialog box or in the Outline view Tree Overview.	The Navigation Items editor also has tabs to edit the field properties of the navigation items or menu bar items.
Results List field on a Display-Only form.	Not available. Use a table field instead.	Permitted.
Display the same field in all pages in a page holder.	Select the panel holder and click the ellipsis (...) button in the Shared Fields property to open the Shared Fields dialog box. You can only view shared fields created by BMC Remedy Administrator. You cannot share fields by using BMC Remedy Developer Studio.	Select the field in the Shared Fields tab of the page holder field properties dialog box.
Attempt to delete a core field.	Not allowed. If only core fields are selected, the Delete command is unavailable. If both a core field and a non-core field are selected, all core fields are ignored and the other fields are deleted.	Not allowed. Displays a message.
Save a form that contains a table field that references a server that does not exist.	Reports errors.	Saves the invalid form, but it cannot be used.

Workflow

Table A-5: Workflow differences

Function	BMC Remedy Developer Studio	BMC Remedy Administrator
Create new workflow action.	Use the panel pop-up menu or the the menu bar Workflow menu.	<ol style="list-style-type: none"> 1 Select the If Action or Else Action tab of the workflow window. 2 Select the new action. 3 Add data. 4 Click Add Action.
View or change Help Text, Change History, and Permissions.	Put the input focus in the workflow or guide editor and use the Properties tab.	Select the appropriate tab in the workflow or guide window.
Add a workflow reference or a label to a guide.	<ul style="list-style-type: none"> ■ Use the Add Active Link or Add Filter context menu commands to add a workflow item or label in a particular location in the guide. ■ Use the Workflow menu commands or toolbar buttons to add a workflow item or label before the selected item. ■ Use the Workflow menu Move Up and Move Down commands or the toolbar Move Up and Move Down buttons to change the order or items and labels. 	Select the Active Links or Filters tab in the guide dialog box and use lists and command buttons to move workflow object and add labels.
Set the Mechanism of the Notify action to a standard choice.	Select the mechanism from the list. The values 1, 2, 3, and 99 are not allowed in the Code field.	<ul style="list-style-type: none"> ■ Select the mechanism from the Mechanism list. ■ Select Other from the list and type 1, 2, 3, or 99 in the Code field.

Menus

Table A-6: Menus differences

Function	BMC Remedy Developer Studio	BMC Remedy Administrator
Create a new menu.	Select the New <i>menuType</i> Menu option from the File > New menu or from the AR System Navigator Applications subtree New object or the All Object subtree Menus node context menu.	Create a new menu object, and select the type of menu.
Change the type of a menu.	<ol style="list-style-type: none"> 1 Delete the existing menu. 2 Create the new menu with the correct type and the same name. 	<ol style="list-style-type: none"> 1 Open an existing menu and select a different type. 2 Configure the menu for the new type.

Web services

Table A-7: Web services differences

Function	BMC Remedy Developer Studio	BMC Remedy Administrator
Input and Output Mappings.	The XML and form items are represented as a table with XML items always in the first column. The XML column is editable in the web services editor and not in the action.	Table A-8: The XML and form items are swapped around when comparing web services editor with the web services action.
Default operations.	No default operations. Add the operations that the application requires by using the Add Operation menu options on the Web Service menu.	By default, when you create a web service, it automatically has certain operations.
Ports.	A web service can have more than one port. You cannot view or edit a web service with two or more ports using BMC Remedy Administrator.	A web service has exactly one port.

Import and export

Table A-9: Import and export differences

Function	BMC Remedy Developer Studio	BMC Remedy Administrator
Import and export commands.	<ol style="list-style-type: none"> 1 Use the Import or Export command on the File menu to start a wizard. 2 On the first page of the wizard, open the BMC Developer Studio branch of the tree. 3 Select what to export or import. 4 Follow the wizard to complete the operation. 	Use one of the commands on the Tools menu.
Save a packing list in XML format for use with the export CLI.	<p>In the Packing Lists branch of the server branch in the AR System Navigator, right-click the name of the list and choose Save as Import/Export Commands.</p> <p>Note: You can also save a working list as import/export commands.</p>	In the Packing List window, choose Packing List > Generate XML.
Export server objects as server-independent definitions.	All server objects are exported as server-independent, except DSO Mappings.	Select Export as Server-Independent on the Export Definitions dialog box.

Frequently asked questions

This section includes questions that you might have about BMC Remedy Developer Studio and their answers.

User interface

Q: How do I log in as a different user or change the server list?

A: Choose File > Login to display the Login window.

Q: Why does a single click in AR System Navigator not show the list of objects?

A: Selecting an item in AR System Navigator does not open the object list. You must double-click to open it. This way, you can have multiple object lists open at the same time.

Q: How do I open a missing tab?

A: To open an object list, double-click an item in an AR System Navigator sub-tree. To open another tab, choose Window > Show View > *viewName*.

Q: Can I run multiple instances of BMC Remedy Developer Studio?

A: Yes, but you must use different workspaces. When you start BMC Remedy Developer Studio, you are prompted for a new workspace if the references workspace is already in use. You can also switch workspaces from within BMC Remedy Developer Studio using the File > Switch Workspace command.

Q: How do I display two editors side by side?

A: Drag the editor tab to the edge of the editor window. Drag it back on or next to the other tabs to stack the editor again.

Q: What is the function of the Design tab at the bottom of the Application, Guide, Menu, and Workflow editors?

A: The Design tab has no function in this release. This feature is reserved for future enhancements.

Q: Why do I need to click the property value twice in the Properties tab to edit it?

A: This is how the Eclipse Properties tab works. It is a current limitation in the tool.

Q: When editing a cell in a mapping table in an Open Window, Push Fields, or Set Fields action, why must I click elsewhere in the table before the data is accepted and the cell is closed?

A: You can usually press ENTER to close the cell and accept the data. This is how the Eclipse/SWT JFace table works. It is a current limitation in the tool.

Q: How does multi-select in the form editor display and update field properties?

A: When you selected two or more fields in the form editor, the Properties tab displays the properties that apply to all selected fields. If the fields have different values for a property, the value for the primary selection, the first field selected, appears in the Properties tab. If you change a value in the Properties tab, BMC Remedy Developer Studio applies the change to all the selected fields. Because of an Eclipse limitation, BMC Remedy Developer Studio cannot clear or use a colored background to distinguish fields with mixed values.

Q: Where can I use Undo and Redo?

A: The form editor provides Undo and Redo commands. The Undo and Redo commands are only available in the Edit menu when the form editor has the input focus. If you make a change in the Properties tab, you must click the form editor tab before you can undo it.

Q: How can I use special characters in the Filtering Options Name field and the Locate field in Selector dialog boxes?

A: These two fields use regular expressions for matching. Certain characters, among them * and [], have special meaning. To match a single * in a name, enter [*] in the field.

Eclipse integration

Q: Since it's actually Eclipse, can I use BMC Remedy Developer Studio to do Sun™ Java™ or other development?

A: BMC Remedy Developer Studio is a packaged plug-in to the basic Eclipse IDE but we have not packaged in any other development plug-ins. We have not tested other Eclipse plug-ins installed alongside BMC Remedy Developer Studio, so we recommend that you not try this for the release.

Q: Where are the Eclipse menus?

A: The Eclipse menus that are not applicable to BMC Remedy Developer Studio are not included.

Limitations and troubleshooting

Q: When I use a preference server, why are some preferences still stored locally?

A: Only the preferences supported by the preference server that you reference can be stored there. BMC Remedy Developer Studio stores other preferences in the Eclipse workspace as it does when you do not use a preference server.

Q: Sometimes, menu commands in the Form, Layout, and Workflow menus are not available (disabled). How do I make them available?

A: This is an Eclipse limitation. The commands in these menus are available only when the corresponding editor has the input focus. When a view such as Properties View (also called the Properties tab) has the focus, these commands are not available. To make the editor commands available, click the editor tab.

Q: My perspective seems to be messed up. Somehow my views are not where I want them or I can't find them. How I do fix the perspective?

A: When you change the layout of your active perspective by closing views or dragging them to different locations, you have customized the perspective and BMC Remedy Developer Studio remembers the perspective layout when you quit it. Use the Window > Reset Perspective command to set the perspective back to its “factory defaults.” When you reset a perspective, all object list views are closed.

Q: When I try to start BMC Remedy Developer Studio, it reports that my workspace is locked. How can I unlock my workspace?

A: If BMC Remedy Developer Studio terminates abnormally, it might leave the workspace directory locked. Either restart Windows to unlock the workspace or choose or create another workspace when you restart BMC Remedy Developer Studio.

Q: Where are all the preferences from the Preferences dialog box of BMC Remedy Administrator?

A: Table A-10 lists all BMC Remedy Administrator preferences. For those that are provided in the BMC Remedy Developer Studio Preferences dialog box, it lists the page. For those that are not, it provides the reason.

Table A-10: BMC Remedy Administrator in BMC Remedy Developer Studio

BMC Remedy Administrator Preferences tab	BMC Remedy Administrator preference	Explanation for BMC Remedy Developer Studio
General	Show Status Bar	Not applicable because BMC Remedy Developer Studio always displays the status bar and the toolbar.
	Show Toolbars	
	Save Window Position and Size on Close	Not applicable because BMC Remedy Developer Studio always saves its window position and size in the workspace on exit.
	Date Format	Found on the BMC Remedy Developer Studio page of the Preferences dialog box.
	AR Path	Refers to the location where BMC Remedy Administrator can access macros. Not applicable because BMC Remedy Developer Studio does not have macros.

BMC Remedy Administrator Preferences tab	BMC Remedy Administrator preference	Explanation for BMC Remedy Developer Studio
General (continued)	Proxy Server Setting for Java VM	Configured in the <code>devstudio.ini</code> file. See the discussion of configuring BMC Remedy Developer Studio for access through a proxy server in the <i>Integration Guide</i> .
	Flat Look On Forms	Not applicable because BMC Remedy Developer Studio always displays forms as they appear in a web browser.
Confirmations	Confirmations	Not applicable because you cannot choose which confirmations the BMC Remedy Developer Studio displays.
	Warnings	Found on BMC Remedy Developer Studio page of the Preferences dialog box.
Form Fonts	All	Not applicable because BMC Remedy Developer Studio always uses the MS Sans Serif font, which is the default font for BMC Remedy Administrator.
Display	Menu preferences	Not applicable because BMC Remedy Developer Studio always displays its menus as pop-up menus.
	Display Change History	Found on the BMC Remedy Developer Studio page of the Preferences dialog box.
Form	<ul style="list-style-type: none"> ■ Add New ■ Keyboard Move Step Size ■ Default QBE Match ■ Default Locale 	Found on the Form page of the Preferences dialog box.
	Show Field Properties on Field Creation	Not applicable because BMC Remedy Developer Studio always displays field properties in the Properties tab.
Web View	Add New Form Action Fields in Web View	Found on the Form page of the Preferences dialog box

B About the Sample application

This section describes the Sample application. The following topic is provided:

- Exploring the Sample application (page 84)

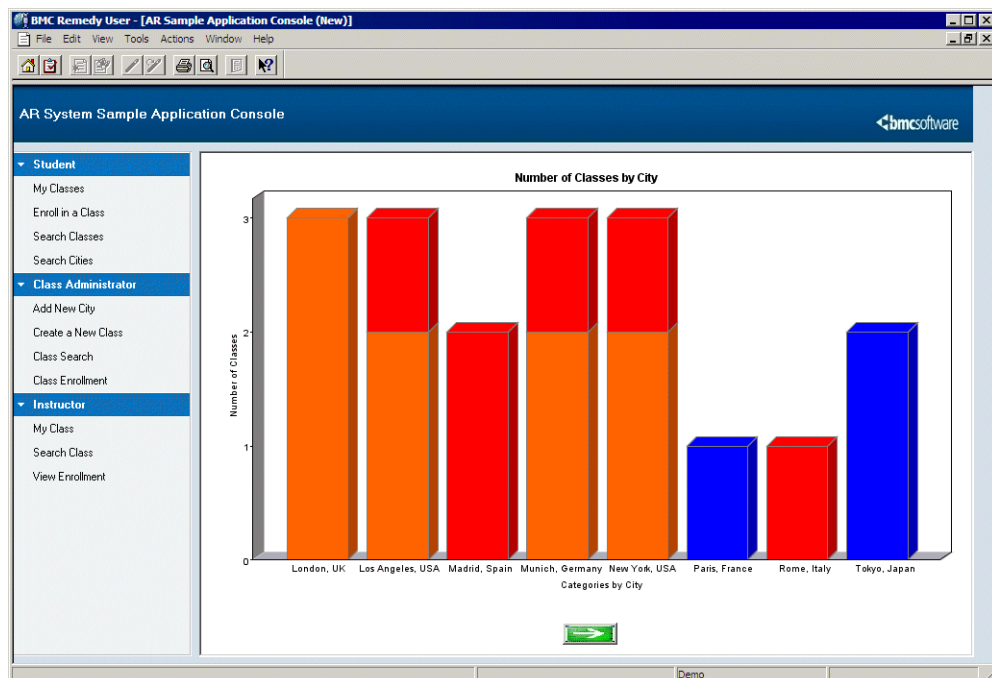
Exploring the Sample application

To see examples of various forms, fields, and workflow actions, install the Sample application with the AR System 7.5.00 server. The application implements a class registration system and includes forms to add classes, to register for a class, and to view enrollments. Forms in the sample application are enabled for both BMC Remedy User and browser access. Help text in the forms and workflow explains how the application works.

► To open the Sample application in BMC Remedy User or a browser

- 1 Open the IT Home page as follows:
 - In BMC Remedy User, log in as an administrator on a server where the Sample application is installed.
 - In a browser, enter the IT Home page URL for a server where the Sample application is installed (<http://midTierServer/arsys/home>). If necessary, log in as an administrator.
- 2 In the navigation panel of the IT Home page, click the AR Sample Application Console link.
- 3 In the AR Sample Application Console, explore the Sample application forms by clicking the links in the navigation panel and the arrow button under the bar chart.

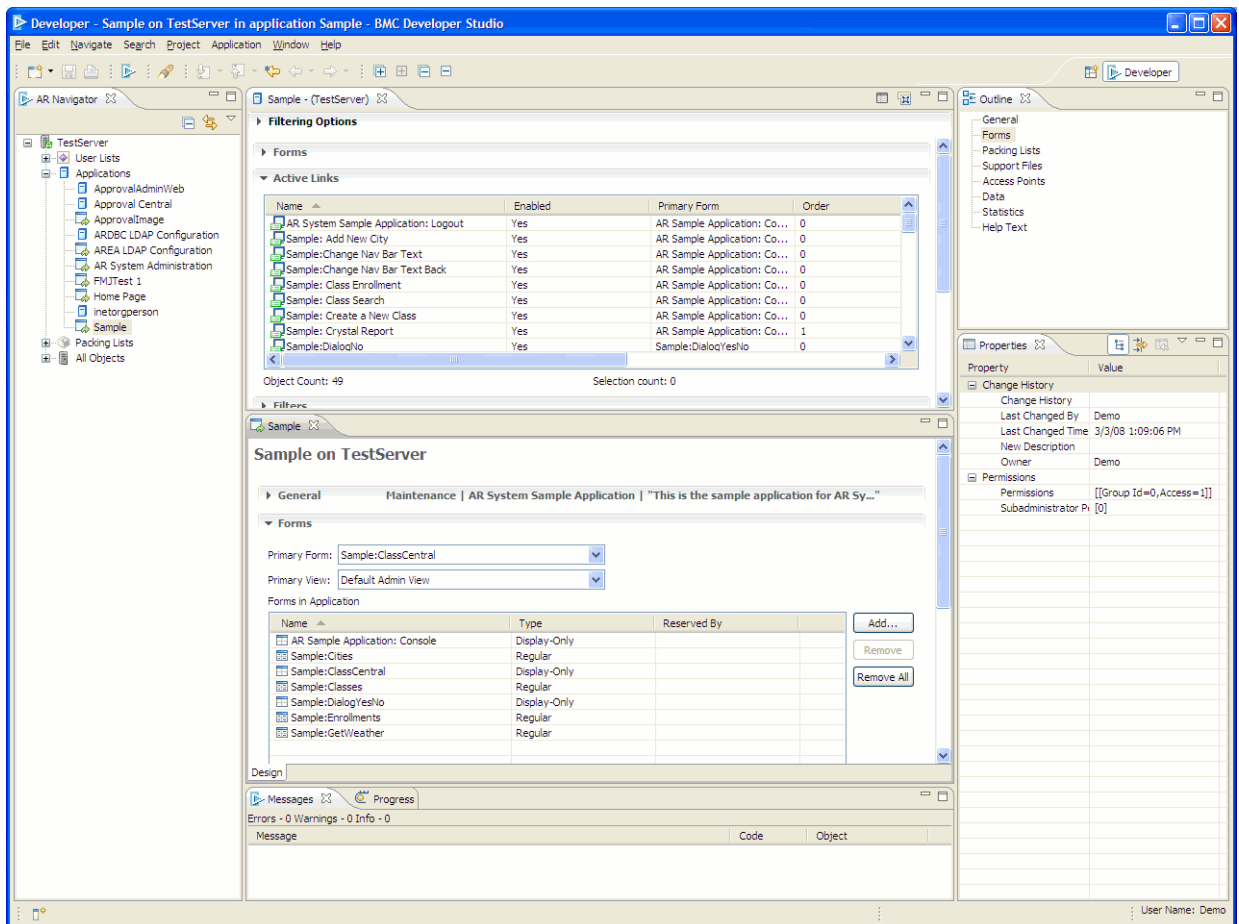
Figure B-1: AR Sample Application Console



► To open the Sample application in BMC Remedy Developer Studio

- 1 Log in to BMC Remedy Developer Studio as an administrator on a server where the Sample application is installed.
- 2 In the AR System Navigator, expand the Applications branch under the appropriate server.
- 3 To explore the objects in the Sample application, double-click Sample, and expand the panels in the Sample object list.
- 4 To explore the Sample application attributes and properties or modify the application, right-click Sample and choose Edit Application, and expand the panels and view the Properties tab.

Figure B-2: Sample application in BMC Remedy Developer Studio



C

For more information

This section describes additional sources of information about AR System. The following topics are provided:

- AR System developer forums (page 88)
- BMC Remedy user groups (page 88)
- Training (page 89)
- Consulting services (page 89)

For information about AR System documentation, see “AR System documents” on page 7.

AR System developer forums

Communicating with fellow AR System developers through the following forums can be an excellent way to solve problems and learn how other people are using AR System products.

- **ARS List**—The most popular email forum for AR System developers is ARS List. To subscribe to ARS List, visit <http://www.arslist.org>.
- **BMC Developer Network**—A BMC-sponsored site that hosts technical forums for all BMC products. On this site, you can post development questions, help other developers, and view timely information about BMC products and solutions. Visit <http://www.bmcdn.ws>.
- **AR System Developer Community**—The historical AR System Developer Community website is at http://www.bmc.com/arsystem/dev_community. This site is being phased out and replaced by BMC Developer Network (see previous item).

BMC Remedy user groups

BMC Remedy user groups provide an open and dynamic forum for exchanging ideas and strategies on a wide variety of topics related to AR System products. Many established user groups exist throughout the world. You can start your own user group by joining the BMC Remedy Local User Group Program.

The BMC Remedy User Group (RUG) is an annual meeting of customers and partners that offers a chance for customers to mingle with each other and BMC Remedy employees and to discuss how they are implementing solutions based on BMC Remedy technology. RUG also enables BMC to relate the latest company directions and strategies.

For information about the BMC Remedy user groups nearest you, about becoming a member of the BMC Remedy User Group (RUG), or about starting your own group, visit the BMC Developer Network website (<http://www.bmcdn.ws>).

Training

BMC provides customers a comprehensive range of classes that cover such diverse topics as administering AR System, using BMC Remedy User, performance tuning and troubleshooting, and API programming. Classes about other products within the Business Service Management solution are also available.

For more information about training provided by BMC and by BMC Remedy Alliance Partners around the world,

- Visit the BMC website at <http://www.bmc.com> and navigate to the education page.
- Contact your local BMC Remedy sales representative.

Consulting services

The BMC Consulting Services organization consists exclusively of systems professionals with extensive AR System experience to help you develop solutions in workflow automation and application design.

For more information about Consulting Services,

- Visit the BMC website at <http://www.bmc.com> and navigate to the consulting page.
- Contact your local BMC Remedy sales representative.

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