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Technical Memo

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Configuring External Links in Visual Discovery AE

External links allow you to drill out to other URL-based applications while passing information about the current selection state of the Visual Discovery AE project.

You can add, edit, and delete external links while parameterizing them with specific data from Visual Discovery AE in-memory source tables, and associating them to a combination of Visual Discovery AE components. Although external links can be used with any URL-based application, they are typically expected to be used to drill out to and filter WebFOCUS reports.

This technical memo serves as a quick start guide to WebFOCUS Visual Discovery Analyst Edition (AE). It contains the following topics:

- *Prerequisites* on page 1.

  For more information, see the *WebFOCUS Visual Discovery AE Getting Started Guide*.
- *Creating Data Using WebFOCUS InfoAssist* on page 7.
- *Creating a WebFOCUS Procedure With Project Selection State Filters* on page 8
- *Designing a Project in WebFOCUS Visual Discovery Workbench AE* on page 18.
- *Publishing a Project to the WebFOCUS Visual Discovery Server AE* on page 35.
- *Presenting a Project as a WebFOCUS Business Intelligence Portal Item* on page 36.

Prerequisites

This section describes prerequisites for WebFOCUS Visual Discovery Workbench AE and WebFOCUS Visual Discovery Server AE.

For more information on hardware requirements, estimating RAM usage, and scalability, see the *WebFOCUS Visual Discovery Analyst Edition Implementation Guide*.

Authoring Tools

The following authoring tools can be used to build data for Visual Discovery AE projects:

- **WebFOCUS Developer Studio.** For more information, see the WebFOCUS Developer Studio documentation related to this topic.
- **WebFOCUS InfoAssist.** For more information, see the *WebFOCUS InfoAssist User's Manual*.

Project Links

The following tools can be used to provide access to Visual Discovery AE projects:

- **WebFOCUS Business Intelligence (BI) Portal**
- **WebFOCUS Developer Studio**
- **WebFOCUS Servlet Self-Service Link or Drill-Down**

For more information, see *Presenting Published Visual Discovery AE Projects in WebFOCUS* in the *WebFOCUS Visual Discovery Analyst Edition Getting Started Guide*.

Operating Systems

This section lists the operating systems that are supported for WebFOCUS Visual Discovery Workbench AE and WebFOCUS Visual Discovery Server AE.

WebFOCUS Visual Discovery Workbench AE:

- Microsoft Windows 8 (32-bit or 64-bit).
- Microsoft Windows 7 (32-bit or 64-bit).
- Microsoft Windows Vista (32-bit or 64-bit).
- Microsoft Windows Server 2003 SP1, Windows Server 2008, or Windows Server 2012.

Note: WebFOCUS Visual Discovery Workbench AE uses standard database and Windows file server protocols.

WebFOCUS Visual Discovery Server AE:

- Windows Server 2003, 2008, or Windows Server 2012 (64-bit).
- Microsoft IIS Version 6.0 or higher, installed and running prior to the installation of the Microsoft .NET Framework.

Installing WebFOCUS Visual Discovery Analyst Edition Components

WebFOCUS Visual Discovery Workbench AE and WebFOCUS Visual Discovery Server AE provide standalone installations. Both are independent to WebFOCUS Developer Studio, WebFOCUS Client, and the WebFOCUS Reporting server installations.

For detailed information on installing WebFOCUS Visual Discovery Workbench AE and WebFOCUS Visual Discovery Server AE, see the *WebFOCUS Visual Discovery Analyst Edition Implementation Guide*.

Setting the Token Key

The token creation relies on a user entered key that is identically and separately entered into the WebFOCUS Administration Console and a WebFOCUS Visual Discovery Server AE configuration file. This token is a hexadecimal (HEX) string value that is read each time to:

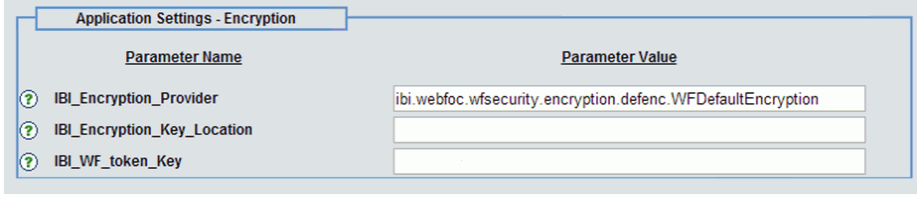
- Encrypt the key when generated by Visual Discovery Dashboard URL calls.
- Decrypt the key by the WebFOCUS Visual Discovery Server AE on these calls.
- Decrypt the key again if passed back to WebFOCUS for executing WebFOCUS procedures.

For more information on how to create encryption key files using hexadecimal (HEX) bytes, see *Chapter 9, WebFOCUS Encryption Features* (Key File Format) in the *WebFOCUS Security and Administration* documentation.

Procedure: How to Set the Token Key From WebFOCUS Client

1. Access the WebFOCUS Administration Console.
2. Expand *Configuration* and then *Application Settings* in the left pane.
3. Click *Encryption*.

   The Application Settings - Encryption page opens, as shown in the following image.



4. Enter a valid 32-character hexadecimal (HEX) string value for the IBI_WF_token_Key parameter.
5. Click *Save* and then close the WebFOCUS Administration Console.

Procedure: How to Set the Token Key From WebFOCUS Visual Discovery Server AE

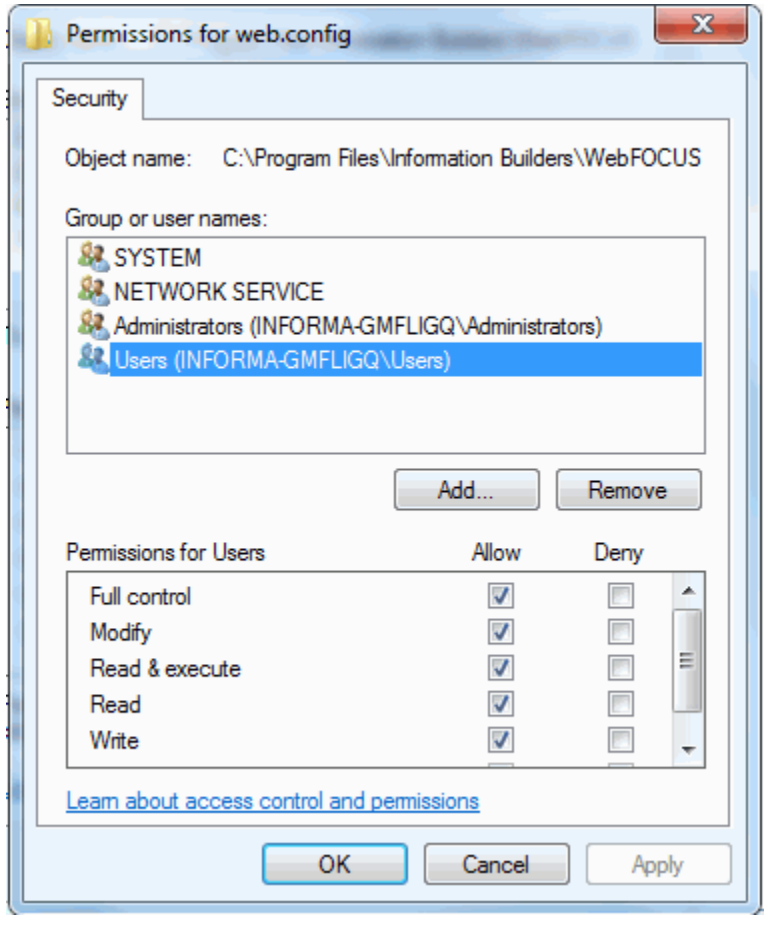
1. Navigate to the WebFOCUS Visual Discovery Server AE installation directory and edit the *web.config* file.

   Note: To edit the *web.config* file, ensure that you have the required administrative permissions to access and modify this file.

   a. Right-click the *web.config* file and select *Properties* from the drop-down menu.

   b. In the Security tab, click the *Edit* button to change permissions.

   c. Click on *Users* and check Allow to all fields in the Permission for Users section, as shown in the following image.



d. Click *OK*.

Note: If the *web.config* file is locked, check to see if it is in use by the Visual Discovery process (w3wp), or the IIS process (W3SVC). Stop the appropriate process to unlock the file.

2. Navigate to line 71 where the <WebFocusPassPhrase> element is located, as shown in the following image.

```
64  <AdvizorSolutions>
65    <ASIServer>
66      <!-- Changes to ProjectDirectory should also be made in global.asax -->
67      <ProjectDirectory>Projects</ProjectDirectory>
68      <IntegrationDirectory>Integration</IntegrationDirectory>
69      <TemplateDirectory>Templates</TemplateDirectory>
70      <ProjectCodeBehind>ASIServer.IbiProjectPageCodeBehind</ProjectCodeBehind>
71      <WebFocusPassPhrase> xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx </WebFocusPassPhrase>
72      <!--
73      <ClientTimeoutSeconds>1200</ClientTimeoutSeconds>
74      <MaximumSessions>15</MaximumSessions>
75      -->
76    </ASIServer>
77    <EnvironmentFilters>
78    </EnvironmentFilters>
79  </AdvizorSolutions>
```

3. Replace the following placeholder text

```
replace the string with your 32 character WebFOCUS pass phrase key
```

with the same valid 32-character hexadecimal (HEX) string value entered for the IBI_WF_token_Key parameter in the WebFOCUS Administration Console.

4. End each open IIS process (w3wp.exe).

Visual Discovery Server AE Access

Visual Discovery Server AE only allows secure requests that originate from WebFOCUS. Therefore, any URLs to Visual Discovery AE projects must be initially placed in the WebFOCUS Business Intelligence (BI) Portal. During runtime, WebFOCUS dynamically adds the required token to appropriately call Visual Discovery Server AE.

For more information, see *Visual Discovery Server AE Token Requirement* in the *WebFOCUS Visual Discovery AE Getting Started Guide*.

Using WebFOCUS Procedures as a Data Source

When using WebFOCUS procedures as a data source, these procedures can be located within the WebFOCUS Repository or independent of this repository. When independent, security is not handled by WebFOCUS and requires that the public user be enabled. When working with those items in the WebFOCUS Repository, it is *critical* to change the *WFServlet.ibfs* extension in the URL to *visdisae.ibfs* (all lower case) in order for WebFOCUS to properly recognize the request.

Note: Accessing WebFOCUS Visual Discovery AE, and as a result, live WebFOCUS procedures, is not supported in single sign on (SSO) environments. Although WebFOCUS Visual Discovery AE can be configured to use Active Directory, the WebFOCUS Security framework is the recommended approach to access WebFOCUS procedures stored in the WebFOCUS Repository.

For WebFOCUS Business Intelligence (BI) Portal Report objects, right-click the item and select *Properties* from the context menu. Click the *Details* tab. If the item is FORMAT VISDISAE, then the URL can be copied and pasted. The URL will have the *visdisae.ibfs* extension in place.

Currently, the URL can be obtained by right-clicking the Report object and copying the URL. The following is the syntax for the WebFOCUS procedures:

- **Stored WebFOCUS Repository Procedure**

  ```
  http://<host>[:port]/<context_root>/visdisae.ibfs
  ?IBFS1_action=runItem&IBFS__methodName=runItem
  &IBFS_path=IBFS:/WFC/Repository/<FolderPath>/<ProcedureName>.<extension>
  ```

  Note: Ensure that the query string *&IBFS__methodName=runItem* uses double underscore characters, and is required to pass parameters.

- **Adhoc Procedures Stored Outside the WebFOCUS Repository**

  ```
  http://<host>[:port]/<context_root>/WFServlet.ibfs
  ?IBIAPP_app=<ApplicationName>
  &IBIF_ex=<ProcedureName>
  ```

Note: For improved readability, line breaks have been inserted in the above URLs. In an actual deployment scenario, ensure that the URLs do not contain any extra spaces or line breaks, and that the parameters are on the same line.

When imported, the table name will be inferred from <*ProcedureName*>. WebFOCUS Servlet calls will be treated as the public user.

When constructing the Visual Discovery URL (VISDISAE item or standalone URL), any query string (amper) parameters included will be passed along to the WebFOCUS procedure for dynamic filtering. This is a good practice to use with the adhoc solution described above.

Synchronized Time When Publishing

Ensure that the time on the system hosting WebFOCUS Visual Discovery Server AE is synchronized with the system where the WebFOCUS Client is installed.

Network Services Permissions

If you are loading data from WebFOCUS procedures or text files, ensure Network Service permissions are granted to the folder where the specific WebFOCUS procedure or text file is located.

Creating Data Using WebFOCUS InfoAssist

You must first create data that will be integrated with WebFOCUS Visual Discovery Analyst Edition (AE). The example in this section uses a simple report created in WebFOCUS InfoAssist with the CAR Master File.

Procedure: How to Create Data in WebFOCUS InfoAssist

1. Open the WebFOCUS BI Portal.
2. Create a new folder (for example, visdisproj) under the Public folder.
3. Right-click the *visdisproj* folder, select *New*, and then click *Report* from the context menu.
4. Select a server (for example, EDASERVE), assign the applications, and click *OK*.

   WebFOCUS InfoAssist opens.
5. Navigate to the *ibisamp* directory and select the *CAR* Master File.
6. Drag and drop the following fields (as dimensions) from the Data pane to the Live Preview pane:
   - COUNTRY
   - CAR
   - MODEL
7. Drag and drop the following fields (as metrics) from the Data pane to the Live Preview pane:
   - DEALER_COST
   - RETAIL_COST
   - SALES
   - MPG

8. Select *Visual Discovery AE* as the Output Type.
9. Set the Destination for the output to be saved as a Report.
10. Save and run this WebFOCUS procedure.

    Notice the output presented in the browser, which is representative of how Visual Discovery AE dashboards consume WebFOCUS-driven data.

11. In the WebFOCUS BI Portal, expand the Public folder, right-click the WebFOCUS procedure, and select *Properties* from the context menu.

    The Properties dialog box for the selected WebFOCUS procedure opens.

12. Click the *Details* tab and copy the URL from the URL field.

    Notice that this URL now includes the *visdisae.ibfs* extension.

    You will be required to enter (paste) this URL in the Data Wizard of WebFOCUS Visual Discovery Workbench AE as you design a Visual Discovery AE Project.

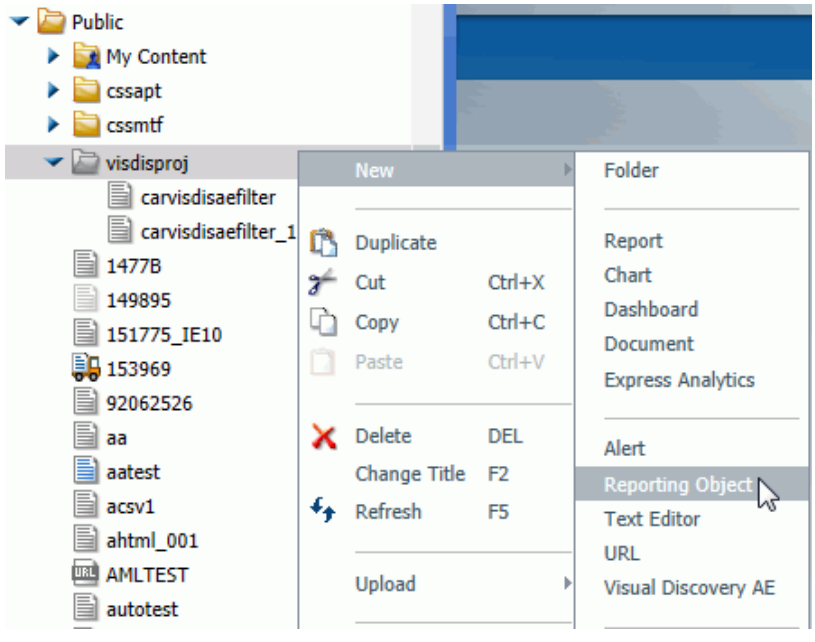
Creating a WebFOCUS Procedure With Project Selection State Filters

Once you have created data using WebFOCUS, you must create a WebFOCUS procedure that filters data based on project selection state. This procedure enables you to obtain the URL that is required for external links.

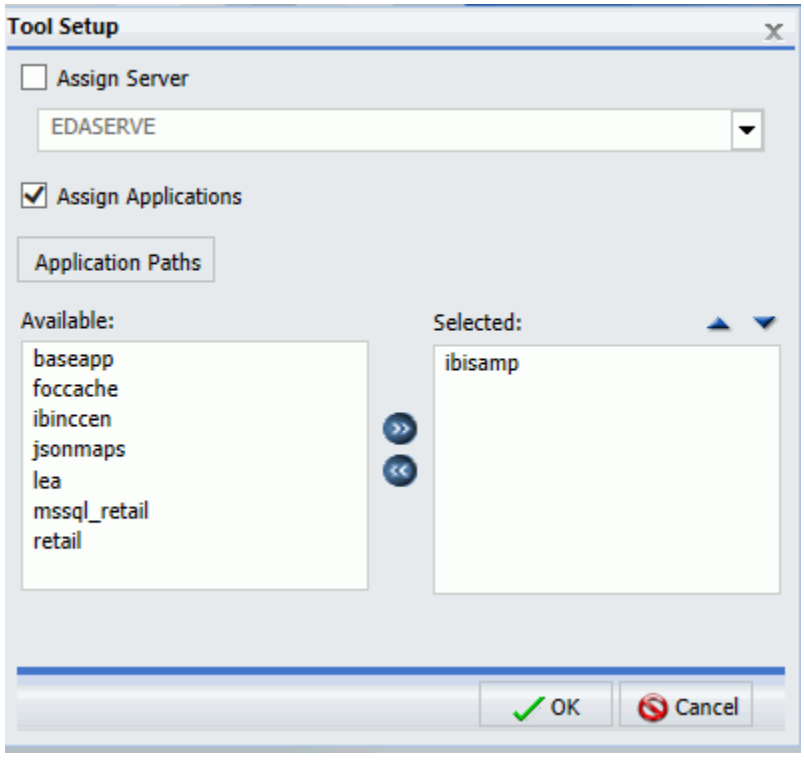
Procedure: How to Create a WebFOCUS Procedure With Project Selection State Filters

1. In the WebFOCUS BI Portal, navigate to the folder created in *Creating Data Using WebFOCUS InfoAssist* on page 7.

2. Right-click a folder, select *New* and then *Reporting Object* from the context menu, as shown in the following image.

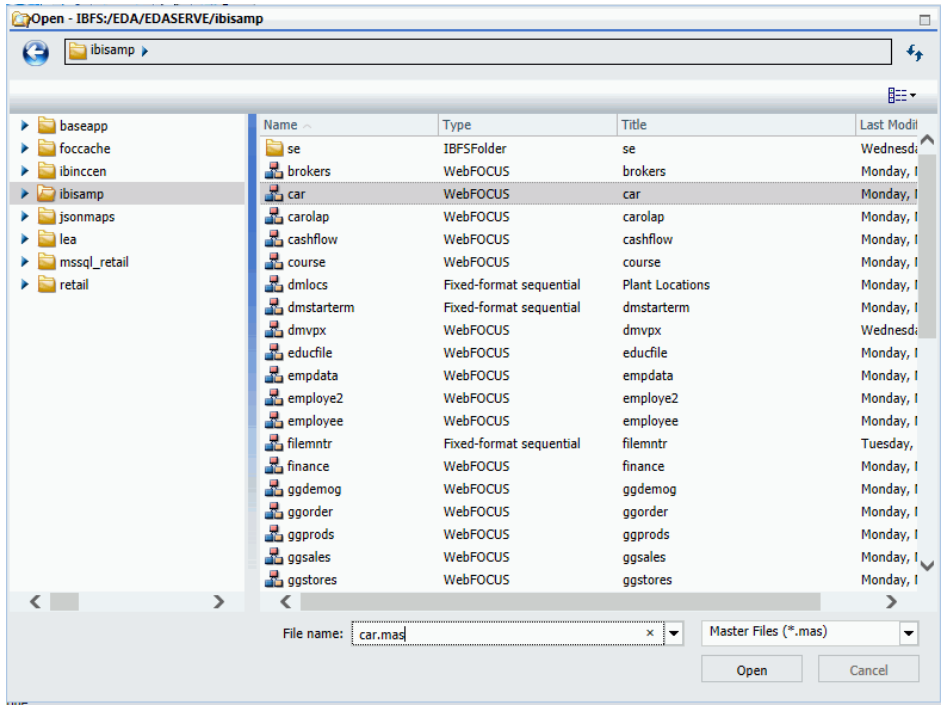


The Tool Setup dialog box opens, as shown in the following image.



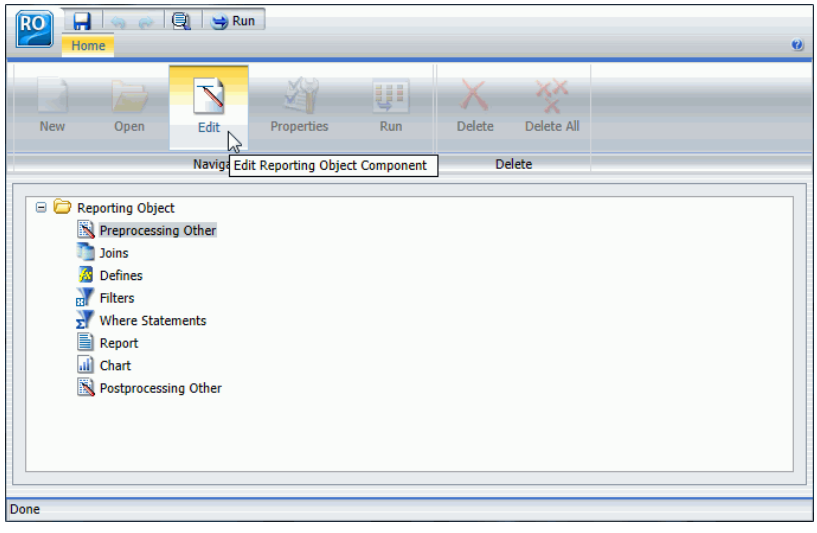
3. Select an available server from the drop-down list and click *OK*.

WebFOCUS InfoAssist opens, as shown in the following image.



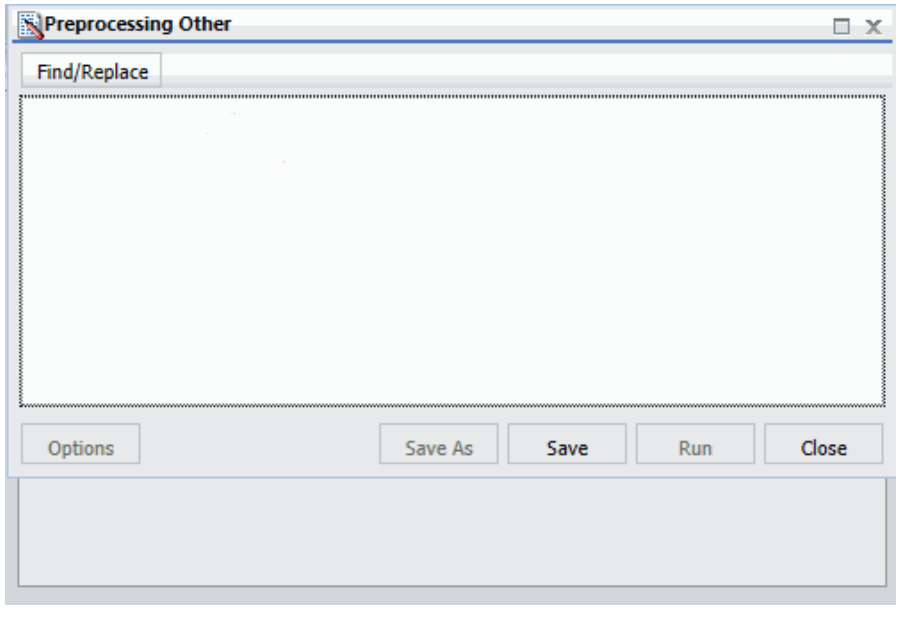
4. From the ibisamp folder, select the *Car* master file and click *Open*.

The Reporting Object properties are displayed, as shown in the following image.



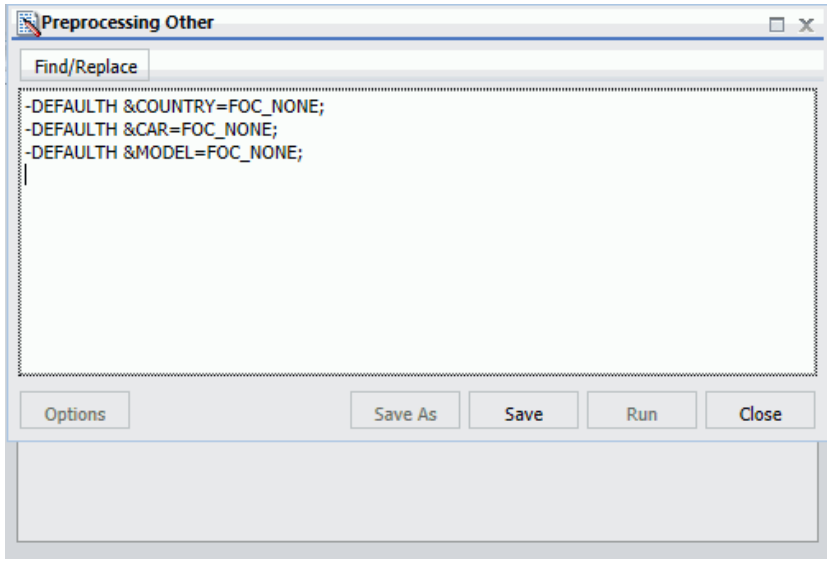
5. Select *Preprocessing Other*, then click *Edit*.

The Preprocessing Other edit dialog box opens, as shown in the following image.



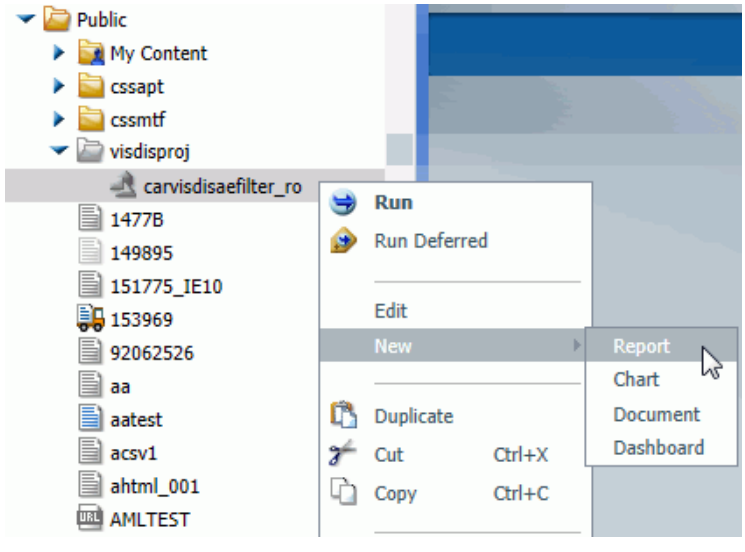
6. Enter the following syntax:

```
-DEFAULTH &COUNTRY=FOC_NONE;
-DEFAULTH &CAR=FOC_NONE;
-DEFAULTH &MODEL=FOC_NONE;
```



7. Click *Save*. Save the new reporting object and close WebFOCUS InfoAssist.

8. In the BI Portal, right-click the new reporting object, select *New*, and then *Report*, as shown in the following image.



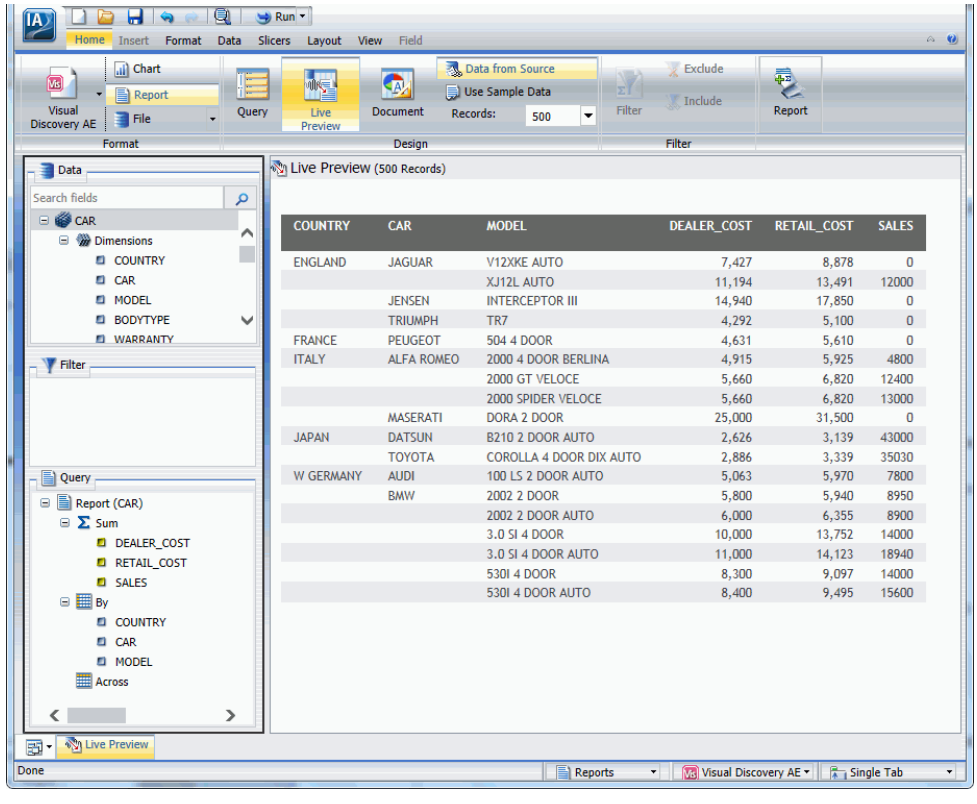
WebFOCUS InfoAssist opens.

9. Create data as described in steps 6 through 10 in *Creating Data Using WebFOCUS InfoAssist* on page 7.

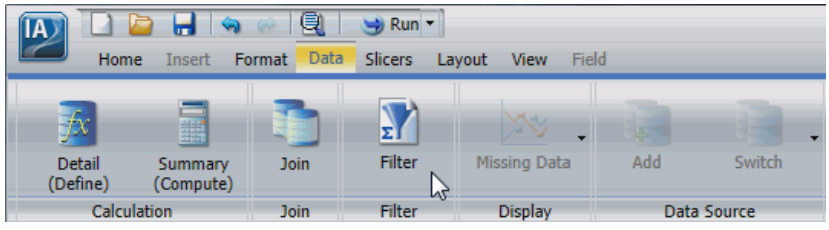
10. In the BI portal, navigate to the newly created report.

11. Right-click and select *Edit* from the context menu.

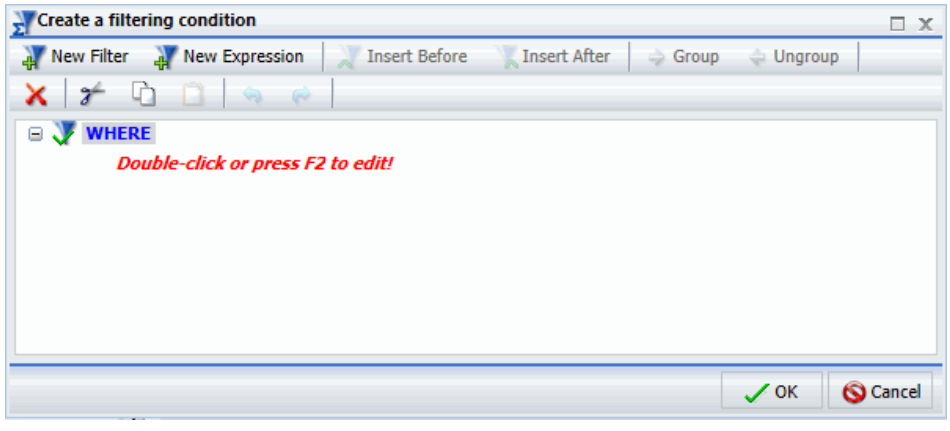
    The WebFOCUS report object opens in WebFOCUS InfoAssist, as shown in the following image.



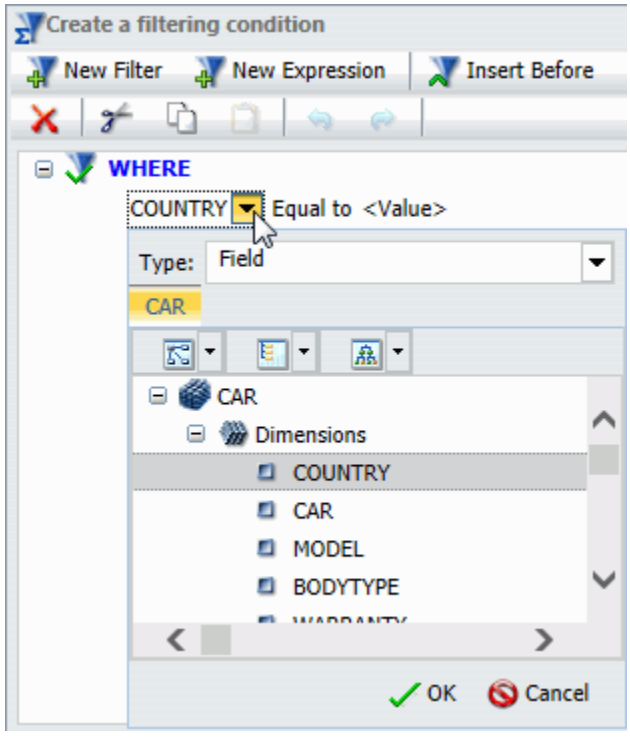
12. In the *Data* tab, click *Filter*, as shown in the following image.



The *Create a filtering condition* dialog box is displayed, as shown in the following image.

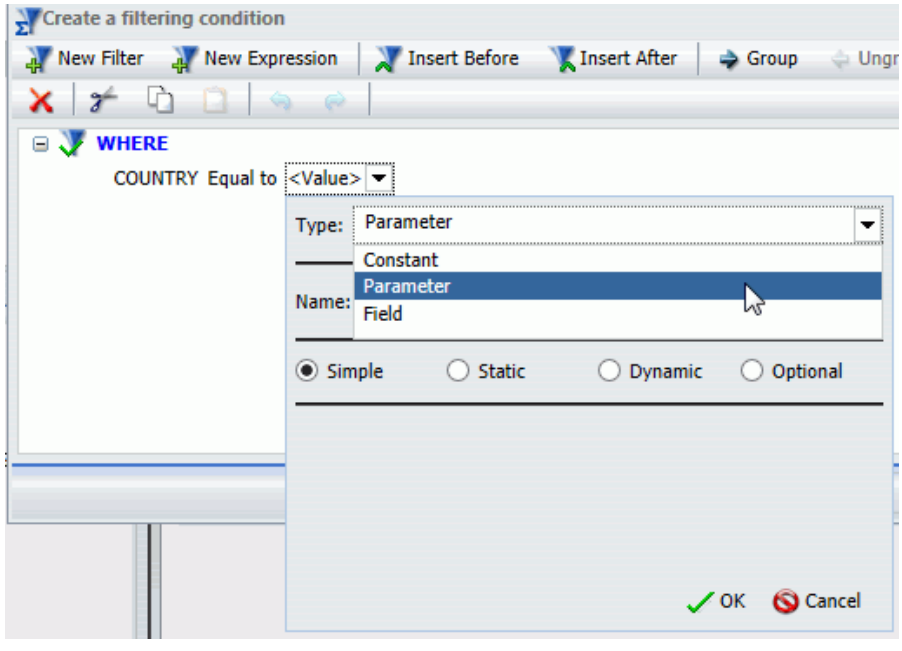


13. Double-click WHERE and select *Country* from the Field drop-down list, as shown in the following image.



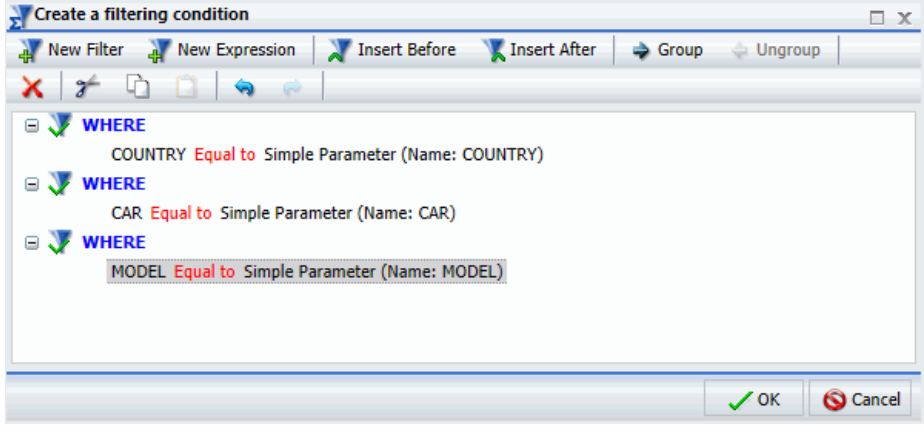
14. Click *OK*.

15. In the Value field, select *Parameter* from the Type drop-down list, as shown in the following image.



16. Leave the default selection as *Simple* and click *OK*.

17. Repeat steps 9 through 10 and create two more filters for *CAR* and *MODEL*. Ensure that the result is similar to the following example.



18. Click *OK*, click *Save*, and then close WebFOCUS InfoAssist.

19. Construct the URL as described in *Using WebFOCUS Procedures as a Data Source* on page 6.

    For example:

    ```
    http://localhost:8080/ibi_apps/WFServlet.ibfs?IBFS1_action
    =runItem&IBFS__methodName=runItem&IBFS_path=IBFS:/WFC/
    Repository/Public/visdisproj/carvisdisaefilter.fex
    ```

20. Test the URL in a browser.
    You can now use this URL to create external links.

Designing a Project in WebFOCUS Visual Discovery Workbench AE

After you generate data using WebFOCUS, you can create a project using WebFOCUS Visual Discovery Workbench AE to display the data as a variety of charts, maps, and graphs.

Procedure: How to Design a Project

1. Open WebFOCUS Visual Discovery Workbench Analyst Edition (AE).
2. Click *New Project*.
3. On the Tasks pane, click *Load New Data*.

   The Data Wizard opens.
4. Select *WebFOCUS Procedure* as the Data Source Type and click *Next*.
5. Paste the URL for the WebFOCUS procedure that was copied earlier. Ensure that it contains the *visdisae.ibfs* extension.
6. Enter your WebFOCUS credentials in the User Name and Password fields, and then click *Login*.
7. Click *Next*.
8. Configure the Dataset. For detailed steps see *WebFOCUS Visual Discovery AE Getting Started Guide*.
9. Click *Finish*.

   The project is loaded in WebFOCUS Visual Discovery Workbench AE. The Workspace area displays a tab with different icons, which represent available components and charts.

10. Click on the corresponding icons to add the following components:

    - A new Pie Chart.

      1. Confirm that the selected Data Table is the one loaded in previous steps.
      2. Select Field: *COUNTRY*
      3. Select Measure: *SALES*
      4. Click *OK*.

    - A new Bar Chart.

      1. Confirm that the selected Data Table is the one loaded in previous steps.
      2. Select Field: *CAR*
      3. Select Measure tab: Sum
      4. Check: SALES

    - A new Data Sheet.

      1. Confirm that the selected Data Table is the one loaded in previous steps.
      2. Select all displayed fields.

11. Click and drag the charts to your desired location. To rearrange the charts, click and hold your mouse on the upper-left corner of the chart object, where the three horizontal lines are located. The cursor changes from a pointer to a cross-pointer.
12. In the Color Toolbar, change *Color by* from <*none*> to *COUNTRY*.
13. Save the Visual Discovery AE project in the same folder where the data is stored. Generally, this folder is located outside the IBI directory structure.

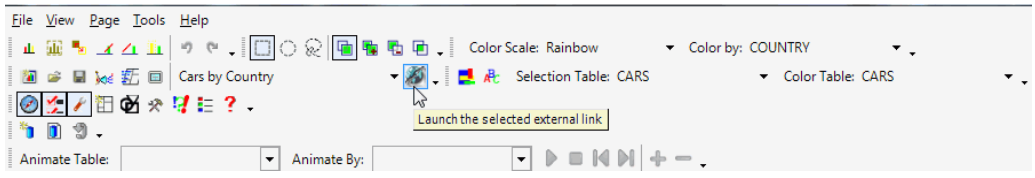
    Note: WebFOCUS Visual Discovery AE projects can be saved as ADV or ADVM file types (.adv or .advm extension). ADVM files are portable, as they will include the data. Nevertheless, it is recommended that these files also be saved outside the IBI directory structure. In addition, WebFOCUS Visual Discovery Workbench AE maintains one backup copy of a project if you save over an existing one. As a result, if an error is encountered during the save process, you can rename the .backup file to .adv and retrieve the previous version.

    Note: When pointing to WebFOCUS procedures, if you save WebFOCUS Visual Discovery AE projects as ADV file types (.adv extension), then a login prompt may be displayed when first opening the file.

Accessing External Links in the WebFOCUS Visual Discovery Workbench AE

External links in the WebFOCUS Visual Discovery Workbench AE can be accessed as follows:

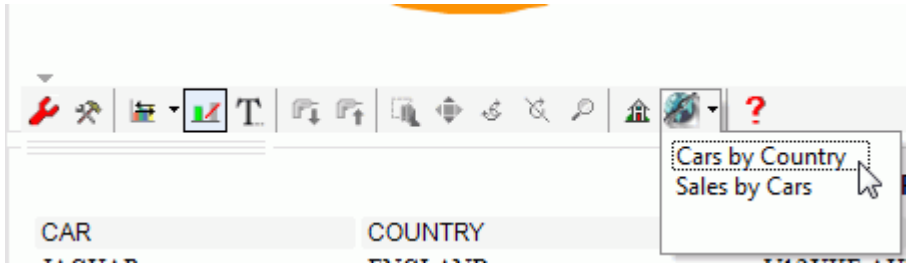
- **External Links Button in the Project Toolbar.** The Workbench AE Project toolbar now includes an External Link Launch button combined with a drop-down list to present and execute external links, as shown in the following image.



  Only external links assigned to the overall project are listed here. You can select an external link from the drop-down list and then click the External Link Launch button to execute the selected external link. The External Link Launch button combined with a drop-down list is enabled only when external links have been assigned to the project and are available across all pages.

  The External Link Launch button is a part of the Workbench AE Project toolbar by default, but can be customized. To view this toolbar, right-click in the menu toolbar and select *Project*. You can also deselect *Project* to remove the Project toolbar from view. This can be customized further by using the Add or Remove buttons.

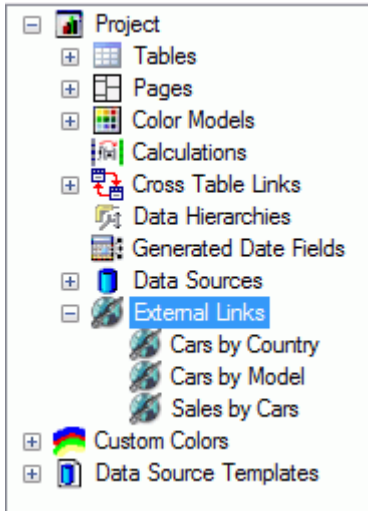
- **External Links Button in the Chart Toolbar.** Each chart now includes an External Link Launch button combined with a drop-down list on the toolbar, which lists associated external links that can be executed, as shown in the following image.



  The drop-down list of external links includes only those external links that are assigned to the specific chart, or to all charts. If an external link is set to all charts, then this option is automatically available, even upon future chart creation. The External Link Launch button in the chart toolbar is disabled by default and is enabled only when external links have been assigned to the chart, either specifically or globally. You can associate multiple external links with a single chart, and an external link can be associated with multiple charts if required.

- **External Links Node in the Project Workshop.**

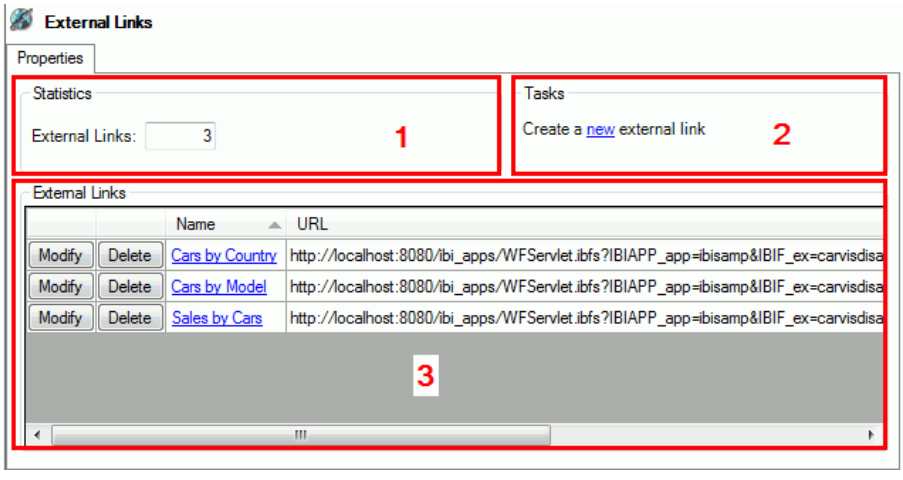
  There is a new External Links node added in the Workbench AE Project Workshop, as shown in the following image.



  This node provides an interface to add, modify, or delete external links, as well as view high-level details about all external links associated with the current project. This information is stored within Visual Discovery AE project files when they are saved or published.

Managing External Links

The Workbench AE Project Workshop element contains the External Links node. This provides an interface to add, modify, or delete external links as well as view high level details about all external links associated with the current project.



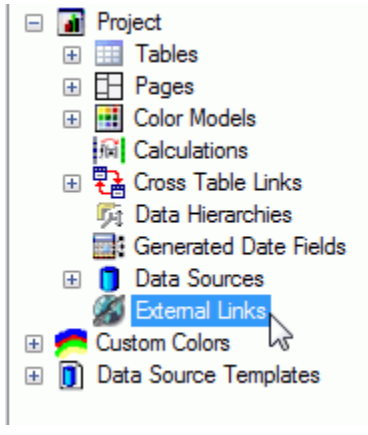
1. **Statistics.** Displays how many external links are associated with the current project.
2. **Tasks.** Lists available actions that can be performed on external links. For example, you can click *new* to create a new external link.
3. **External Links.** Lists high-level details about each external link associated with the current project. This includes the Modify and Delete buttons, as well as the name of the external link, URL, how many parameters are defined, whether the external link is assigned to the overall project, and the total number of assigned charts.

Creating External Links

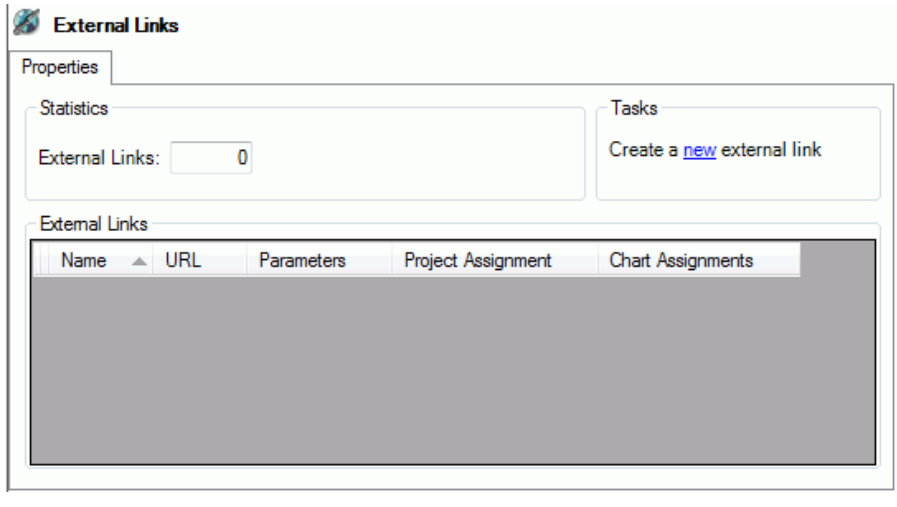
The New External Link dialog box allows you to build an external link that is parameterized by any managed data source, and assign it to a project or chart.

Procedure: How to Create an External Link

1. In the left pane of the Workbench AE Project Workshop, click *External Links*, as shown in the following image.

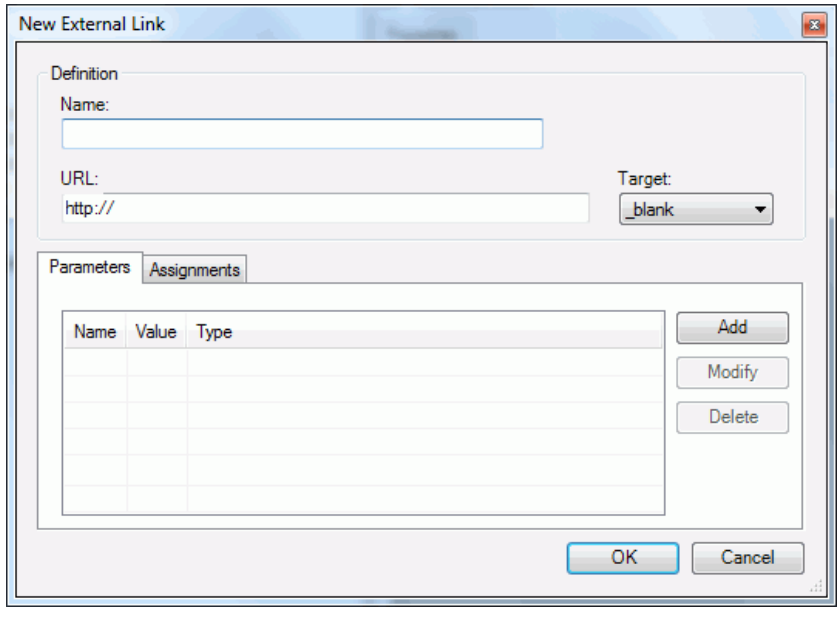


The External Links dialog box opens in the workspace area, as shown in the following image.



2. In the Tasks area, click *new*.

The New External Link dialog box opens, as shown in the following image.



3. In the Definition area, perform the following steps:

   a. Type a name for the new external link in the Name field.

      A name is the string used to present and describe the external link in the External Links node within the Workbench AE Project Workshop, and the External Link Launch button combined with a drop-down list that can be viewed in the Workbench AE, and Server AE environments.

      Note: As a best practice, define a name that indicates the type of information that you expect to see when drilling out on an external link.

   b. Type the URL of the external link in the URL field.

      The URL is the absolute URL path assigned to the external link, which is executed when selected from the External Link Launch button combined with a drop-down list that is available in the Workbench AE and Server AE environments. HTTP, HTTPS, FTP, FTPS, and other URL formats are accepted.

c. Select a target from the Target drop-down list, which is the browser location that will be used to open the selected external link.

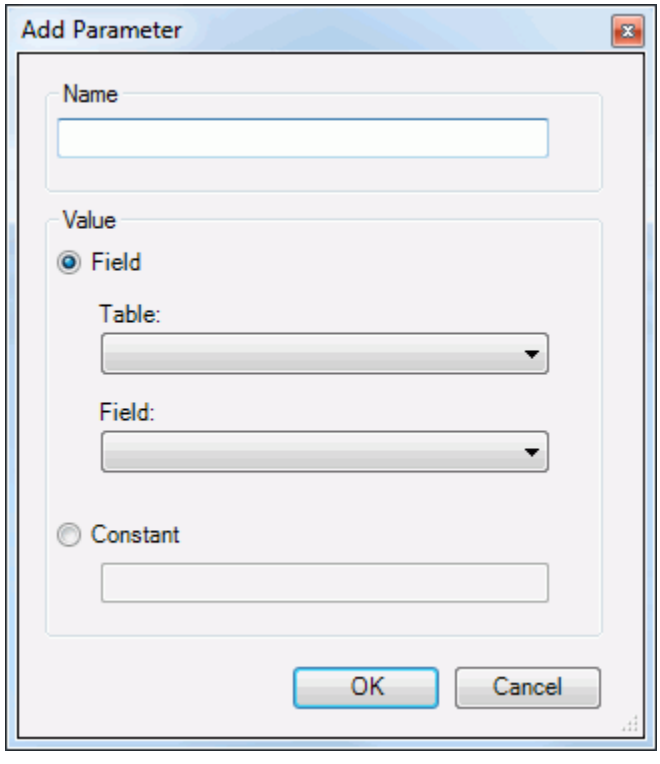
The following target types are available:

- _blank (selected by default)
- _parent
- _self
- _top

Note: The target type is only used when executing external links from within the Server AE. Server AE and Workbench AE will execute external links in the latest active default browser, or automatically launch the default browser.

4. The Parameters tab in the New External Link dialog box manages and lists the name and value pairs appended to external links when selected from the External Link Launch button combined with a drop-down list that is available in the Workbench AE and Server AE environments.

To create new parameters, click the *Add* button to open the Add Parameter dialog box, as shown in the following image.



Perform the following steps:

a. Enter a name in the Name field, which is the text assigned to the name portion of the name and value pair.

Note: If no name is provided, then the field that is selected from the Field drop-down list will be specified as the name.

b. Specify a value in the Value area as a string to be assigned to the value portion of the name and value pair. The value can be a field or a constant.

- **Field.** Assigns the field-level row value for the selection state of the project, based on the selected data source (*Table*) and column (*Field*). Select the required values from the corresponding drop-down lists.

  Note: It is recommended to match the selection state of a Visual Discovery AE project to any subsequent URL-based application by passing fields that make a record unique. When using non-unique fields, consideration must be taken in mapping selection states to the external link URL-based application accordingly.

  Note: Depending on the data type that is defined for a field, data values referenced by external links are specifically constructed when they are passed to the subsequent URL-based application. For example, strings and dates are passed enclosed within single apostrophe characters, and are separated by an *OR* operator. Data types of type integer and double are not enclosed by single apostrophe characters, but are still separated an *OR* operator. Empty and null values for all data types are represented by *MISSING*.

- **Constant.** Specifies a static string.

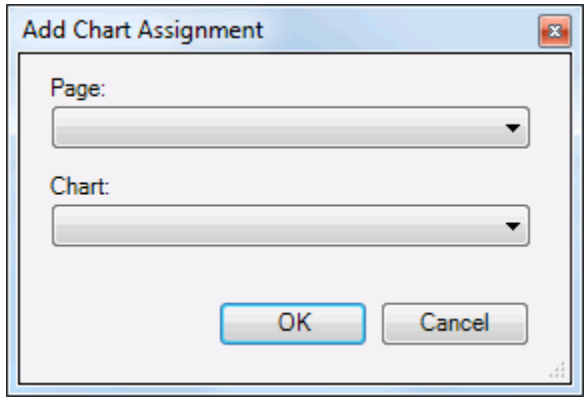
5. The Assignments tab in the New External Link dialog box manages and lists how external links are associated with the entire project, any given chart, or across all charts.

Perform the following steps:

a. Select the *Project* check box to assign an external link to the overall project. The external link is then added as an option listed in the External Link Launch button combined with a drop-down list.

b. Select *Specific Charts* or *All Charts* to assign external links to a specific chart or to all charts. The external link is then listed in the External Link Launch button combined with a drop-down list for the corresponding chart. To assign the external link to a specific chart, click *Add*.

The Add Chart Assignment dialog box is displayed, as shown in the following image.



c. From the Page drop-down list, select the page number in which the chart is located.

d. From the Chart drop-down list, select the specific chart.

e. Click *OK*.

The external link is now displayed in the chart toolbar to which it was assigned.

The external link is now created and can be accessed from the External Link Launch button combined with a drop-down list in the Project toolbar, Chart toolbar, or the External Links node in the Workbench AE Project Workshop.

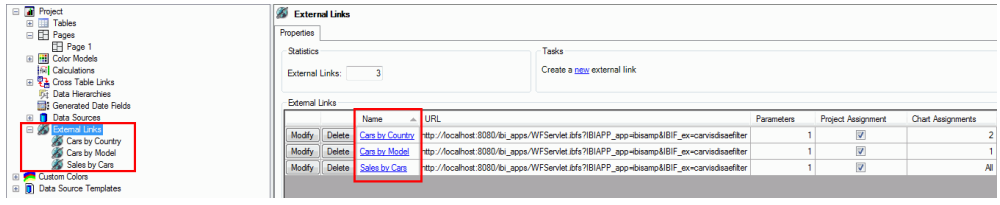
Viewing External Links

After an external link is created, the external link and all of its associated and assigned parts can be viewed on the external link properties page. This page is accessible from the External Links node added in the Workbench AE Project Workshop (left pane), or by selecting the name of the external link as a hyperlink from the list of external links (right pane).

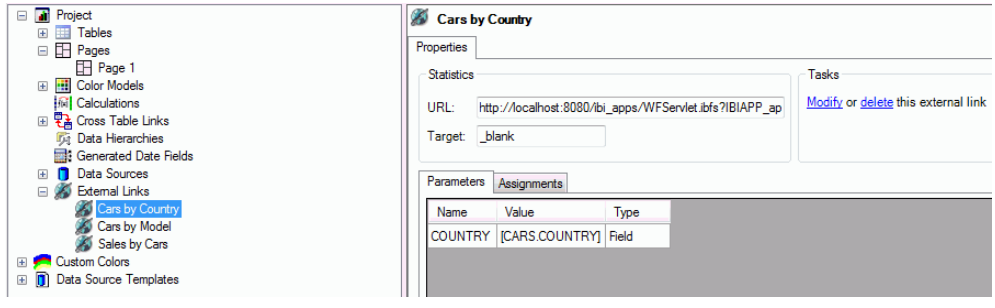
Procedure: How to View an External Link

1. In the Workbench AE Project Workshop, expand the *External Links* node in the left pane.

2. Click the external link you would like to view in the left pane, or the name of the external link as a hyperlink in the right pane, as shown in the following image.



The external link properties page is displayed, which provides all of the details for the selected external link, as shown in the following image.



This page allows you to modify or delete the external link.

Modifying External Links

All external links can be modified at any time. When modified, the same interface used to create the external link is presented in a Modify External Link dialog box where every property of the external link can be updated. To modify an external link, click the *Modify* button next to an external link in the main page of the Workbench AE Project Workshop or the *Modify* link on the external link properties page.

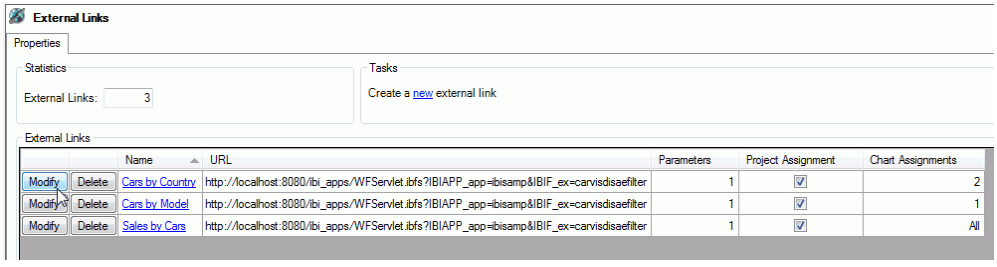
Procedure: How to Modify an External Link

External links can be modified using one of the following methods:

- ❑ In the main page of the Workbench AE Project Workshop (External Links node). See steps 1 and 2.
- ❑ On a specific external link properties page. See steps 3 and 4.

1. In the main page of the Workbench AE Project Workshop, click *External Links* in the left pane.

All of the available external links are displayed in the right pane, as shown in the following image.

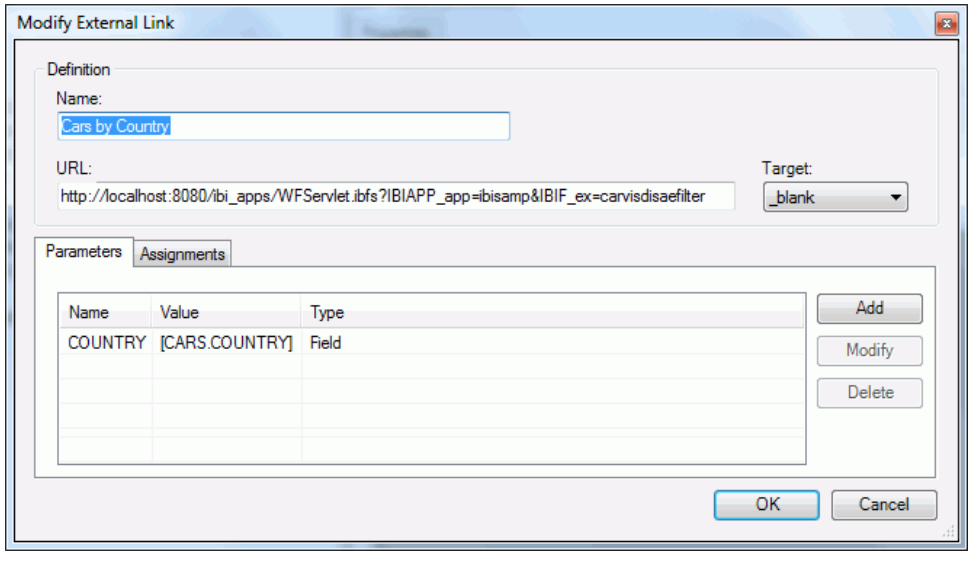


2. Click the *Modify* button for a corresponding external link that is listed.
3. In the left pane, click the specific external link that you want to modify.

   The specific external link properties page is displayed, as shown in the following image.

4. In the Tasks area, click the *Modify* hyperlink.

The Modify External Link dialog box opens, as shown in the following image.



5. Modify the properties of the selected external link as required.
6. Click *OK* when you are done.

Deleting External Links

An external link can be permanently deleted at any time.

Note: The delete action cannot be undone.

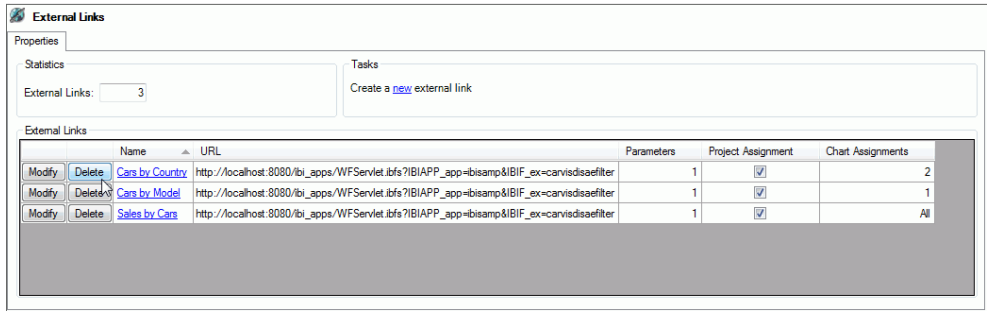
Procedure: How to Delete an External Link

External links can be deleted using one of the following methods:

- ❑ In the main page of the Workbench AE Project Workshop (External Links node). See steps 1 and 2.
- ❑ On a specific external link properties page. See steps 3 and 4.

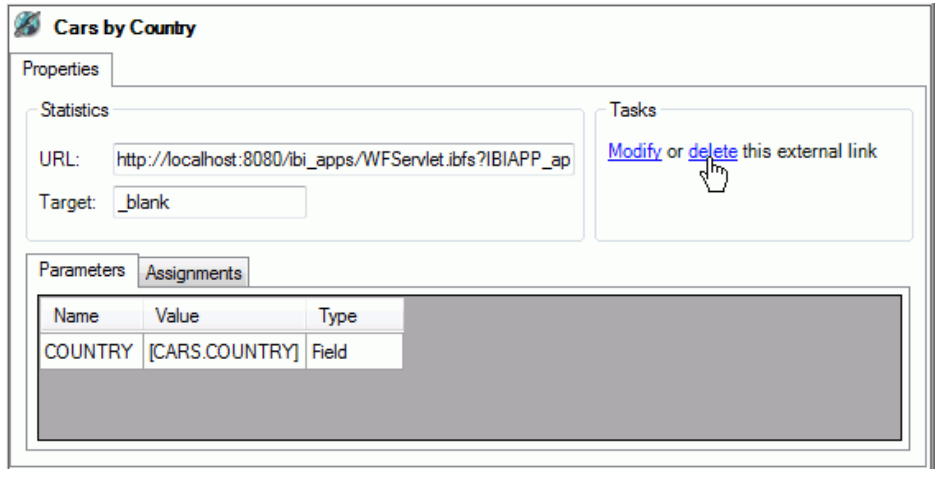
1. In the main page of the Workbench AE Project Workshop, click *External Links* in the left pane.

All of the available external links are displayed in the right pane, as shown in the following image.



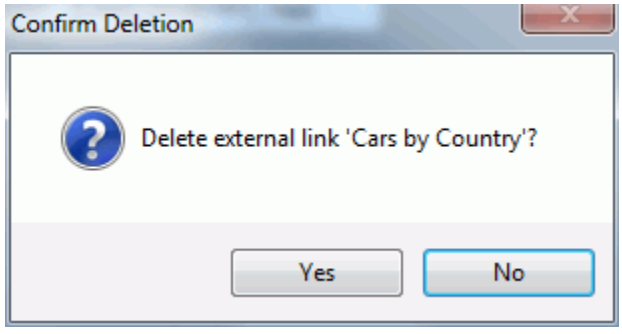
2. Click the *Delete* button for a corresponding external link that is listed.
3. In the left pane, click the specific external link that you want to modify.

   The specific external link properties page is displayed, as shown in the following image.



4. In the Tasks area, click the *delete* hyperlink.

The Confirm Deletion dialog box opens, as shown in the following image.



5. Click *Yes* to permanently delete the selected external link.

Post Request Protocol

As part of the Visual Discovery AE HTTP Post request, all external link parameters, and WebFOCUS tokens, are embedded as fields.

Constructing external link parameter values are specifically based on the external links parameter field data type defined in the in-memory data source. Any value that is NULL or MISSING will be represented by the reserved string MISSING (not enclosed with single apostrophes). When multiple records are selected the multiple values represented for a single field are concatenated, and separated by OR.

- **Dates.** Date values are enclosed by single apostrophes.

  Syntax:

  ```
  <field>='<value>'
  ```

  For example:

  ```
  DATE='02/09/1959'
  ```

  ```
  DATE=''
  ```

  Multiple values are represented as:

  ```
  <field>='<value>' OR '<value>' OR '<value>'... OR '<value>'
  ```

  For example:

  ```
  DATE='02/09/1959’ OR ‘07/30/1982’ OR MISSING OR ''
  ```

- **Doubles.** Double values are not enclosed by single apostrophes.

  Syntax:

  ```
  <field>=<value>
  ```

For example:

```
LISTPR=19.95
LISTPR=MISSING
```

Multiple values are represented as:

```
<field>=<value> OR <value> OR <value>...
```

For example:

```
LISTPR=19.95 OR 24.95 OR 14.98 OR MISSING
```

- **Integers.** Integer values are not enclosed by single apostrophes.

  Syntax:

  ```
  <field>=<value>
  ```

  For example:

  ```
  COPIES=2
  COPIES=MISSING
  ```

  Multiple values are represented as:

  ```
  <field>=<value> OR <value> OR <value>... OR <value>
  ```

  For example:

  ```
  COPIES=2 OR 3 OR MISSING
  ```

- **Strings.** String values are enclosed by single apostrophes.

  Syntax:

  ```
  <field>='<value>'
  ```

  For example:

  ```
  CATEGORY='TRAIN/EX'
  CATEGORY=''
  ```

  Multiple values are represented as:

  ```
  <field>='<value>' OR '<value>' OR '<value>'... OR '<value>'
  ```

  For example:

  ```
  CATEGORY='TRAIN/EX' OR '' OR MISSING OR 'COMEDY'
  ```

  Note: Single apostrophes found in a string will ultimately be replaced and passed with two single apostrophes (for example, value='That''s Life').

- **WFToken.** Updates the embedded/encoded timestamp with the current time.

Syntax:

```
wftoken=<updated encrypted wftoken>
```

For example:

```
wftoken= %2b4MykaegvzDBCZXVoRhdWS88WbUho%2baw1wMsIu1MvuY%3d
```

- **CSRF Token.** Cross-site Request Forgery (CSRF) token enhances security.

  Syntax:

  ```
  <IBI_CSRF_Token_Name>=<IBI_CSRF_Token_Value>
  ```

  For example:

  ```
  IBI_CSRF_Token2013=985602357yfhva382740
  ```

```
<html xmlns='http://www.w3.org/1999/xhtml'>
<head>
    <meta http-equiv='Content-Type' content='text/html; charset=utf-8' />
    <title>WebFOCUS Drill Out</title>
</head>
<body>
    <div style="display: none;">
        <form id='reportForm' method='post' action='http://installvisdis:8080/ibi_apps/WFServlet.ibfs?IBIAPP_app=ibisamp&IBIF_ex=movismqm'>
            <p>
            <input type="text" name="CATEGORY" value="'CHILDREN' OR 'COMEDY'" />
            <input type="text" name="LISTPR" value="14.95 OR 14.98 OR 19.95 OR 19.98 OR 26.99 OR 29.95 OR 44.95 OR 59.99" />
            <input type="text" name="DATE" value="'7/3/1942' OR '7/21/1951' OR '9/4/1987' OR '2/16/1988' OR '5/13/1988' OR '7/23/1988' OR '8/
            <input type="text" name="COPIES" value="1 OR 2 OR 3 OR 4" />
            <input type="text" name="wftoken" value="%2b4MykaegvzDBCZXVoRhdWS88WbUho%2baw1w4sIu1MvuY%3d" />
            <input type="text" name="IBI_CSRF_Token2013" value="985602357yfhva382740" />
            </p>
        </form>
        <script type="text/javascript">
            document.getElementById( "reportForm" ).submit();
        </script>
    </div>
</body>
</html>
```

Publishing a Project to the WebFOCUS Visual Discovery Server AE

Once the project is designed, you must publish the project to WebFOCUS Visual Discovery Server AE. This allows the project to be shared with a larger audience.

Procedure: How to Publish a Project to the WebFOCUS Visual Discovery Server AE

1. From the File menu, select *Publish Dashboard*.
2. Enter the following URL in the Server Address field or the path to the default ADV virtual directory as configured in IIS:

   ```
   http://<server_name>/ADV
   ```

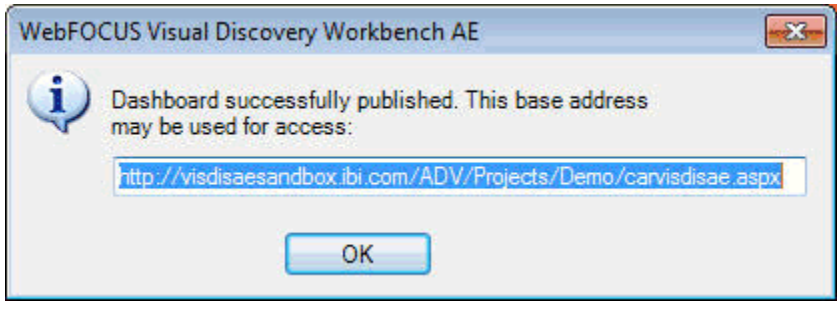
   where:

   <server_name>

   Is the host name of the system where WebFOCUS Visual Discovery Server AE is installed.

3. Select a destination folder and click *Finish*.

   A message indicating that the dashboard has been successfully published is displayed along with the URL, as shown in the following image.



   Note: This base address can be appended with query string parameters, to filter WebFOCUS procedures.

4. Copy and save the URL, which will be used later in the process.

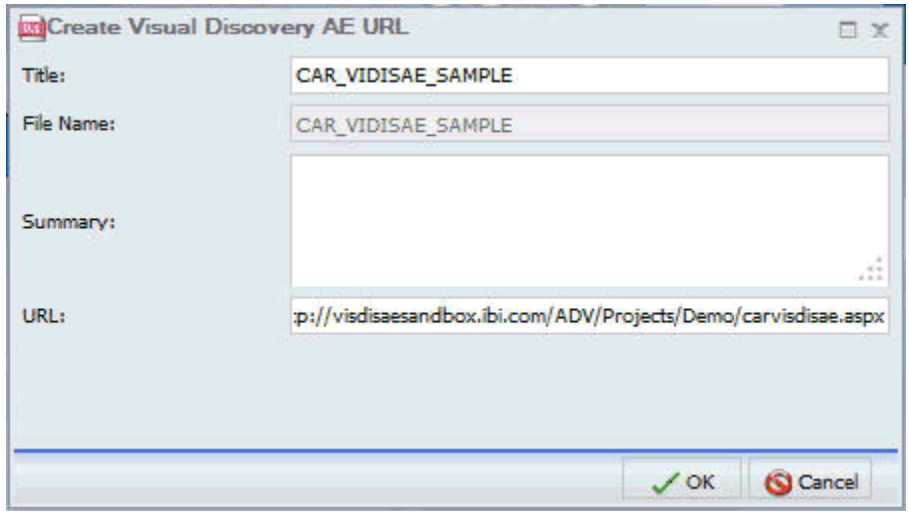
Presenting a Project as a WebFOCUS Business Intelligence Portal Item

Using WebFOCUS, the published project can be presented in a variety of ways. For demonstration purposes, presenting a project as a WebFOCUS Business Intelligence (BI) Portal item is described in this section.

Procedure: How to Present a Project as a WebFOCUS BI Portal Item

1. Open the WebFOCUS BI Portal and create a new folder (for example, visdisproj).
2. Create a new *Visual Discovery AE* object from the context menu.

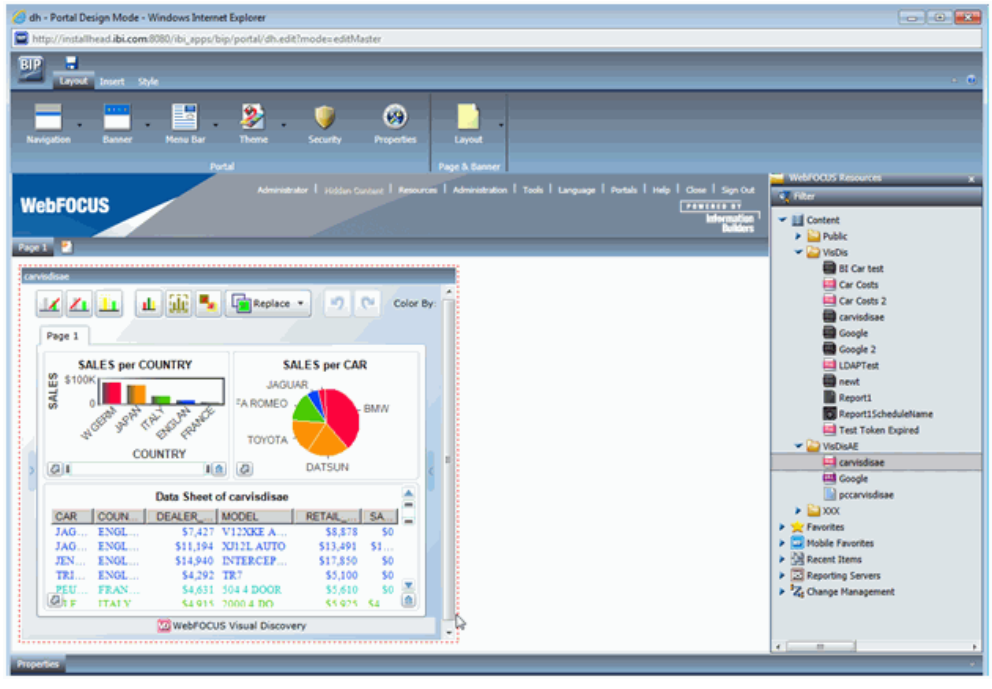
The Create Visual Discovery AE URL dialog box opens, as shown in the following image.



3. Enter a title for the WebFOCUS Visual Discovery AE dashboard that is being added as a WebFOCUS BI item.
4. Enter the URL that points to the published dashboard, which was generated by the WebFOCUS Visual Discovery Workbench AE.
5. Click *OK*.

   The published Visual Discovery AE dashboard is added as a new item to the WebFOCUS BI Portal.
6. Right-click the new WebFOCUS BI Portal item and select *View* from the context menu.

The published Visual Discovery AE dashboard is displayed in the WebFOCUS BI Portal workspace area, as shown in the following image.

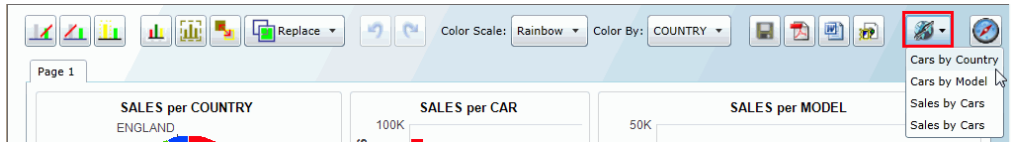


For more information on using the WebFOCUS Business Intelligence Portal, see the *Business Intelligence Portal* documentation.

Accessing External Links in the WebFOCUS Visual Discovery Server AE

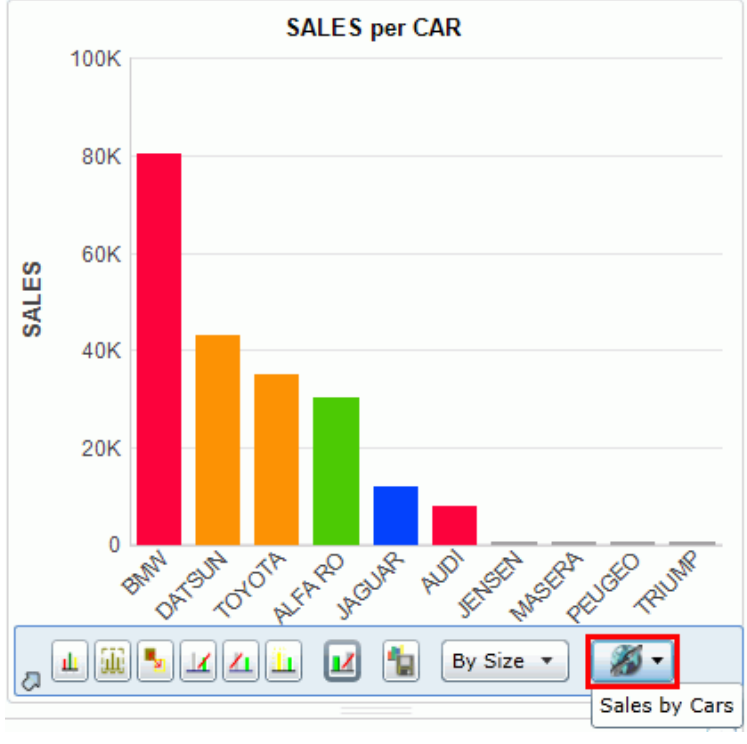
External links in the WebFOCUS Visual Discovery Server AE can be accessed as follows:

- **External Links Button in the Project Toolbar.** The Server AE Project toolbar now includes an External Link Launch button combined with a drop-down list to present and execute external links, as shown in the following image.



Only external links assigned to the overall project are listed here. You can select an external link from the drop-down list and then click the External Link Launch button to execute the selected external link. The External Link Launch button combined with a drop-down list is enabled only when external links have been assigned to the project and are available across all pages.

- **External Links Button in the Chart Toolbar.** Each chart now includes an External Link Launch button combined with a drop-down list on the toolbar, which lists associated external links that can be executed, as shown in the following image.



The drop-down list of external links includes only those external links that are assigned to the specific chart, or to all charts. If an external link is set to all charts, then this option is automatically available, even upon future chart creation. The External Link Launch button in the chart toolbar is disabled by default and is enabled only when external links have been assigned to the chart, either specifically or globally. You can associate multiple external links with a single chart, and an external link can be associated with multiple charts if required.