

Intellicus Enterprise Reporting and BI Platform



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#### Acknowledgements

Intellicus acknowledges using of third-party libraries to extend support to the functionalities that they provide.

For details, visit: <u>http://www.intellicus.com/acknowledgements.htm</u>



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# **Query Objects**

Query Objects form the business Meta layer for end user reporting. Query Objects hides the physical database details, SQL complexities, table names from the end user who can design ad hoc reports, charts, KPIs and dashboards without knowing where and how the data is fetched from the database.

A query object contains details to fetch desired data from a desired data connection. A Query Object provides data for reports and Cube Objects.

A Query Object can be a source for another Query Object.

#### Pre-requisites

#### License

Ensure that Intellicus system you are using is licensed for Ad hoc Reporting feature.

#### **Access Rights**

Ensure that currently logged in user has 'Data Administrator' privilege. Ensure that currently logged in user has access rights granted on the database connections on which Query Object needs to be designed.



# **Workflow Enabled Query Objects**

### **Query Object Editor**

Following are main sections in the query object designer.

- Editor or design canvas the central area of the Query Object designer that diagrammatically represents the design of the currently opened Query Object.
- 2) Step Selector the left pane from where you can drag required Steps to design the Query Object
- 3) Properties tab the bottom area where you can edit properties of any selected item on the editor
- 4) Results tab the bottom area where you can view data result set processed up to currently selected step
- 5) Button palette Action buttons on the top for CRUD operations





Editor section is a plain canvas. When you add a new Query Object the designer gives you already created two steps – data Source and Format.

An edge line joins the two steps, with an arrow depicting the flow of data.

You can select a new step from the step selector and drag it on the editor and then join the step with another. Draw the joining line in the direction of dataflow.

You can also directly drop a step on an existing edge line, to insert the new step between the two existing ones joined by that line. For example, to insert a filter step between Data Source and Format, drop the Filter step on the line.

You can have multiple Data Source steps in a Query Object.

Based on standard data processing rules, some steps can take multiple inputs. For example, a join step can take two inputs and a Union can take more than two inputs.

At each step you can select the Result tab to see the result data set up to selected step. This is a sample data set and may not be complete data.



# **Simple Steps**

Following are the primary steps with their behaviour and properties explained:

#### Data Source step

The Data Source step brings data into this Query Object.

We can bring data into this Query Object from

- i) RDBMS source using SQL or stored procedure
- ii) File source
- iii) Web service
- iv) Another Query Object

There can be any number of Data Source steps in a Query Object.

Each Data Source step has following properties to set:

#### Properties

Property	rty Values Comments				
New Source/	New Source/	You choose whether a new SQL or file			
Existing QO	Existing QO	source to be created or you can use an			
		existing Query Object			
Connection	Select from available list or Select (Parent)	When selected (Parent), then this Data Source fetches data from the connection specified at Query Object level (at the top, below the button palette), or falls back to default connection configured for the user. When a connection name is selected, then this Data Source fetches data only from that connection, irrespective of Query Object connection or connection of other			
		Data Source in this Query Object			
SQL	A Complete SQL statement designed with	This property is visible when you select a connection that points to an RDBMS.			
	the help of SQL Wizard	The SQL Designer window opens for you to design an SQL or procedure. See below for SQL Designer details.			
File/Stream Source	File name, File type and parsing details designed	This property is visible when you select a connection that points to a file system.			
	with help of File Selector Wizard	The File Selector window opens for you to specify File name, File type and parsing details			
Web Service	Web service, method name and	This property is visible when you select a connection that points to a Web Service.			



	Record pattern details designed with help of Web Service Selector	The Web Service Selector window opens for you to specify Web service, port, method name and Record pattern
Existing QO	Select an existing	The output of the select Query Object
	Query Object	becomes input of this Data Source
Sorted	Check/Uncheck	Check = You specify if this data is already sorted on one or more fields. This flag helps in optimizing sort dependant steps or processes later in the data flow
Fields	Lists all fields available in this Data Source	The fields along with Field Properties can be set as discussed later

#### SQL Designer

This wizard allows you to design SQLs by dragging and dropping tables (Design tab) or by typing the complete SQL (Edit tab).

SQL Designer			💐 Insurance				Schema refreshed on: 26/6/12 3:03 PM 🛛 🕜			
• Table		0 1	/iew_	Design	Edit	Result	Procedure			
C Procedure Show 1-14		C <u>s</u> of 14	Synonym Prev Next		bo].[FactInsura 1 *	nce]				<b>^</b>
Entities [PARAI/ETERS] [dbo].[DimAgenc: [dbo].[DimPeris] [dbo].[DimPeris] [dbo].[DimPolicy <sup>7</sup> [dbo].[DimTerito] [dbo].[DimTime] [dbo].[DumTartin [dbo].[DupFactin: [dbo].[Factinsura	y] aphy] Holder] [ype] [ypeHor ry] surance nce]	ne] ]			[AgencyKey] [PolicyDateKey] [PolicyHolderK [PolicyTypeKey] [PerilKey] [TerritoryKev]	/] ey] /] ▼				*
Select	[dbo].[F	actinsurar	nce].*							×
From	[dbo].[F	actinsurar	nce]							*
Where	÷	Open	Operand1		Operator	Operand2			Close	Relation
Group By										*
Having	÷	Open	Operand1		Operator	Operand2			Close	Relation
Order By	ntities ar	nd attribute	s into SQL clauses. De	esian SOL claus	es bere. Full SQ	I will be constru	icted in Edit tab			
<ul> <li>Brag arop or</li> </ul>		attractio	o de siddoos. De				and a mean tub			

Figure 2: SQL Designer



#### File Selector

This wizard allows you to select a file and provide parsing properties to fetch records from that file.

Properties Results				2
Look In (Root)		'e. 🧀 🗈		
Composition DemoInsuranceFiles	08/26/2013 11:54:22		0	
🗁 DemoUnionFiles	08/26/2013 11:54:22		0	
population_Country.csv	08/20/2012 10:01:00		4	
Sales_Data.csv	07/16/2012 10:29:30		12	
Sensex_Monthly_20yrs.csv	08/20/2012 10:01:00		16	=
Temperature.csv	08/20/2012 10:34:00		2	
i zipcode.csv	07/16/2012 12:29:30		1749	-
4				
File Name MetaData.txt File Type CSV CSV Line Separator 1/In Escape Character 1 Contains Header Contains Header Encoding ASCII Input Date	Field Separator , Enclosed By Skip Top Lines 0			
			OK	Cancel

Figure 3: File Selector



#### **Web Service Selector**

This wizard allows you to select a web service available from the connected web Service provider and also provide Method, Record pattern details.

By reading the WSDL, it also prompts for parameters required to request the Web Service.

Select Service	Results				$\bigcirc$
Service	GlobalWeather				
Port	GlobalWeatherHt	tpPost			
Method	GetWeather		•		
Record Pattern	//string				•
Parameters					
Parameter Name	Туре	Value			
CountryName	String				
CityName	String				
				O	K Cancel

Figure 4: Web Service Selector



#### XML as Source

You can use XML as the source for designing query objects. The XML can be fetched from a Local path, Network path, HTTP URL or from a Database field.

You can create a connection to a Web URI. From that Web URI, data administrator can query (SOAP) whichever web services are available and create Query Objects from Web Service Result.

Data Source	Format					0
		Properties	Results			
	- 12	Request Path	h index.xml			
		Request Met	hod GET 💌			
		Parameter	rs			
			Name	Value	Use Parameter	<u>^</u>
		$\pm$ ×				
< [						E
Properties Result		ΞX				
Fields	New Source      Existing QO	Ξ×				+
Aa //wx_station_index/station Aa //wx_station_index/station/station_id Aa //wx_station_index/station/station_id Aa //wx_station_index/station/station Aa //wx_station_index/station/statiude 12 //wx_station_index/station/longitude Aa //wx_station_index/station/tms_url Aa //wx_station_index/station/trs_url Aa //wx_station_index/station/xml_url	Connection: XML_HTP File/Stream Source Select Index.xml Sorted Field Properties Data Type: CHAR  Data Sort Priority: Sort Qualified Name:	Response Ty -XML	Pettern [/wx_station_index/station g ASCII I Input Date	Format		ncel

Figure 5: XML as Source

#### Field Level Properties at Data Source step

<ul> <li>Field Properties</li> </ul>	S						
Data Type:	CHAR 💌	Data Format:	,,,		Dat	abase Time Zone:	~
Length:	2147483647	Scale:	0	Locale:	Default	*	
Sort Priority:		Sort Criteria:					
Qualified Name:						]	

Figure 6: Field Level Properties



Property	Values	Comments
Property		Collect the data tune of the incoming data
Data Type		Select the data type of the incoming data
	NUMBER,	
	DATE,	
	BINARY	
Data Format	Format String	Specify the format of the incoming data.
		This is useful only if Date or IP Address
		type data are incoming in CHAR fields but
		needs to be converted to Date and
		Number types for further use
Database Time	Select Time zone	Specify the time zone in which the
Zone	from the list	incoming date data is stored. This is
		useful only if date time data needs to be
		converted to other time zone data based
		on reporting requirement
		For example when incoming GMT data
		need to show EDT (or any requested T7)
		value in report specify that the incoming
		data is CMT. The autout format is
		data is GMT. The output format is
		generally specified in Format step or in
	<b>T</b> 16	user preference
Length/Precision	Type yourself	Length of field for Char data type
		Provision or longth of field for Number
		dete ture
Scala	Type yourself	Coole or number of digite ofter designal
Scale	Type yoursen	scale of number of digits after decimal
	Coloct from the	Coloct the language ( country in which the
Locale	Select from the	Select the language/ country in which the
	list	incoming date data is stored
Sort Priority	Number 0-N	If the data is sorted on multiple fields
		then specify sort priority number of this
		field.
		Primary sort field should be the lowest
		number
Sort Criteria	Ascending/	Specify sort as either ascending or
	Descending	descending order
Qualified Name	Type yourself	This name helps using the field name in
		all the SQL clauses such as WHERE and
		ORDER BY or to resolve field name
		ambiguity when same field comes from
		two tables or expressions



#### Format step

Format step primarily lists all fields provided by this Query Object. Format step generally is the last step, captures captions etc. and acts as business view of the Query Object.

Field. Agency/Key	
Source: Data Source	
Caption: Agencykey HyperLink:	
roup Label: (Select to add group label) 😺 📃 Hidden	
🔄 GIS Enabled	
Format	
Width: 10 Output Format .	
Align: Right 💌 Input Format:	
Time Zono	_
Inter colo	
	-

Figure 7: Format Step

For each field following properties are set:

Property	Values	Comments
Field	Name of Field	Original name of field.
	(read only)	
		When you change the caption, the caption
		keeps showing in the field list
Source	Step Name	In which step did this field originate in
	(read only)	this Query Object.
		Helps in tracking a field source in a
		complex Query Object
Cantion	Type yourself	This is what end user sees this field as
Hyperlink	Drilldown detail or	Detailed steps of specifying hyperlink is
, p =	Hyperlink URL	mentioned below in a separate section
Group Label	Type Yourself or	To create a new group, Type the new
	Select from list	group name.
		To put this field into an existing group,
		select group name from the drop down list
Hidden	Check/Uncheck	Check = makes this field invisible to users
		for reporting process.
		Object if this Query Object is used as a
		Data Source
GIS Enabled	Check/Uncheck	Check = This field has GIS classification
	,	data such as country names, state or city
		names.
		GIS enabled field appear in selection list
		for grouping option in GIS mapping
		visualization screens
Format		



properties						
Width	Number 1-100	Default width of this field when dragged onto a report				
Output Format	Format String	This field value will be formatted using this format string. Useful for Date and Number formatting. If you need to decide the format string at run time, then select "Apply Locale Default" property in the Format String selector dialog				
Align	Left, Right, Center	This field, when put on a report, its values will be aligned to the selected side by default				
Input Format	Format String	This format string decides the Prompting format for the value for this field in Ad hoc Filter screen. This is useful in prompting date values in desired format. This is also used to input IP Address format for number values				
User Time Zone	Select Time zone	Specify the time zone in which the date data is to be converted and displayed. The Report Server calculates the difference between Database Time Zone and User Time Zone, and does time conversion. For deciding User Time Zone at run time, select SYS USER TZ value.				



#### Data Format Dialog

Data Format dialog is used to set the format string using selections. As an alternate you can also type-in the format string in the format text box.

#### Data format dialog properties:

Format	General Number Currency Date Time Percentage Scientific Text Network ID	Specifies general data type of data being input or output			
	General	No special treatment to the data			
	Number	Treat the data with number validations and with validations according to detailed settings.          Data Format			
		Percentage         Scientific         Text         Network Id         Sample: 1234567         Format: 0			
		OK Cancel			
		Apply Locale Default = Instead of providing a fixed format here, pick the format from Localeconfigurations.xls for user's current selected locale or the default settings.			
		Decimal places = maximum number of decimals allowed in input Padding or rounding up to these many decimals in output Use 1000 Separator = Yes = apply thousand separator in output Negative numbers = whether to enclose in braces or prefix with minus			
	Currency	Treat the data with currency number validations and with validations according to detailed			



	settings.		
	Data Format		0
	General  Number	Apply Locale Default	
	Date	Use 1000 Separator	
	Percentage Scientific Text Network Id	Negative Numbers	-1234.56 (1234.56)
		Currency	None 💌
	Sample: 1234567 Format: 0		None \$ Rs. €
	Apply Locale D Localeconfigura selected locale	efault = It picks ations.xls for or the default set	the format from user's current ttings
	Decimal places allowed in inpu Padding or rou in output Use 1000 Sep separator in ou Negative num	= maximum nur t nding up to thes arator = Yes = tput bers = whether	mber of decimals e many decimals apply thousand • to enclose in
	Currency = S	elect currency	symbol/chars to
Date	Treat the data validations accord	with date valic ording to detailed	lations and with settings.



	Data Format	0
	General Number Currency Date Time Percentage Scientific Text Network In	Apply Locale Default  Append Time Format MM//dd/yy dd/MM/yy dd-MMM-yy
	Sample: 01/01/190 Format: MM/dd/yyyy	10 /
		OK Cancel
	Apply Locale d fixed format h localeconfigurat selected locale	efault = Instead of providing a ere, pick the date format from ions.xls for user's currently or the default settings
	Append Time = localeconfigurat format string fo	Append the time format from the ions.xls and create date + time r user's currently selected locale
	Format = Select formats' list supported by th user to fill the c	t a format string from the fixed (Some formats may not be le calendar control that helps end late value)
	In case you nee or output forma contain both da	ed fixed format date + time input ats select the format strings that te and time parts
	Date Time Percentage Scientific Text Network Id	Format MM/dd/yyyy HH:mm:ss MM/dd/yyyy HH:mm MM/dd/yyyy hh:mm:ss a
Time	Treat the data a	as time part only.



	Data Format
	General Number Currency Date Time Percentage Scientific Text Network Id Sample: 13:4
	Format: HH:mm
	OK Cancel
	Apply Locale default = Instead of providing a fixed format here, pick the time format from localeconfigurations.xls for user's currently selected locale or the default settings
	Format = Select a format string from the fixed formats' list (Some formats may not be supported by the calendar control that helps end user to fill the date value)
Percentage	Treat the data as percent division so multiply by 100.
	Data Format     Image: Constraint of the second secon
	Sample: 1234567.12%
	OK Cancel
	Decimal places = Decides number of decimal places in the output
Scientific	Treat the data as a big number that needs conversion into scientific format.



	Data Format 🕜
	General  Number Currency Date Time Percentage Scientific Text Network In
	Sample: 1E+06
	OK Cancel
	Decimal places = Decides number of decimal
	precision places in the output
lext	string.
	Data Format 🔗
	General Number Currency Date Time Percentage Scientific Text Network In
	Sample: Sample Text Format:
	OK Cancel
	Formats = Select format types UCase = Convert text into all upper case LCase = Convert text into all lower case
Network ID	This format is applicable on number fields. This format treats the number 32 bit IP number and converts to respective IP display formats.





The path for locale configuration file is:

**Folder**: <Install Dir>\ReportEngine\Config\i18n **File**: localeconfigurations.xls

You may need to consult with your system administrator, in case you don't have access to this file.



#### Filter Step

Filter Step is used to apply pre-defined filters and set Lookup values.

Filter step can take input from any step and provide output to any step in the flow of Query Object.

The properties tab shows two sections for a Filter step.

- 1) Ad hoc Filters
- 2) Field properties

Properties Result		
	and and and and and	Ad hoc Filters
Fields 12 AgencyKey 12 PolicyDateKey 12 PolicyDoteKey 12 PolicyTopeKey 12 PolicyTopeKey 12 TerritoryKey 12 TerritoryKey 12 TotalAmount 12 UtilisedPremium 12 BalancedAmount 12 PremiumAmount 12 ClaimAmount 12 AmountPaid	Connection: (Parent)	Field Level Filter Properties
	Display Column:	

Figure 8: Filter Step

#### Ad hoc Filters

You select available Field name, Criteria and Value to apply ad hoc filters for this step.

Only the data that matches the filters can pass through this step.

#### **Field Properties**

For each select field, following properties are set:

Lookup ValuesCheck/UncheckCheck = Whether this field provides a list of lookup values for end user to easily choose values to apply filterMandatoryCheck/UncheckCheck = Will mandate reports using this Query Object to apply filter on this fieldHideCheck/UncheckCheck = Will remove this field for filter options. End user will not see this field in filter-on field listLookupLookupImage: Check = Will remove the set as Mandatory or be set as Hide	Property	Values	Comments
MandatoryCheck/UncheckCheck = Will mandate reports using this Query Object to apply filter on this fieldHideCheck/UncheckCheck = Will remove this field for filter options. End user will not see this field in filter-on field listLookupLookupEnd Composition	Lookup Values	Check/Uncheck	Check = Whether this field provides a list of lookup values for end user to easily choose values to apply filter
Hide       Check/Uncheck       Check = Will remove this field for filter options. End user will not see this field in filter-on field list         A field can either be set as Mandatory or be set as Hide       A field can either be set as Mandatory or be set as Hide	Mandatory	Check/Uncheck	Check = Will mandate reports using this Query Object to apply filter on this field
Lookup	Hide	Check/Uncheck	Check = Will remove this field for filter options. End user will not see this field in filter-on field list A field can either be set as Mandatory or be set as Hide
	Lookup		



Key FieldValue Select a fieldWhen we have Lookup values with display and value columns, the value should apply to filter on key field, instead of display applying filter on this field. This is a SQL optimization option.If you create a lookup with customerID and customer name and your table is indexed on customerID, then for the customer name field, set customerID as Network valuesDynamicCheck/UncheckCheck = You can set a source (SQL or another Query Object) for the Lookup valuesStaticCheck/UncheckCheck = You can type in the lookup values to another Query Object) for the Lookup valuesStaticCheck/UncheckCheck = The list shown to the end user for selecting values for filtering should not allow typing in new value other than listFetchNow, On Every use, Lazy, By SearchNow = Fetch the values only upon saving of this Query Object On Every use= Fetch the values when user selects this field for filtering and clicks on combo for value selection by Search = Fetch matching values whe user starts typing values in the filterMin.Key LengthNumber 0-4By search fetching of data starts only after these many characters are typed by the userUser DefinedCheck/UncheckCheck = You will provide a user defined SQL or data source of lookup values Uncheck = Automatically generates DISTINCT based query to get lookup valuesNew Source/ Evisting QONew Source/ Existing QUWether user defined is new SQL or an existing QUNew Source/ Evisting QOSelect from List Fore lookup value result set, select the field of display ValueLink too Pare	Details		
andcustomernameandyourtableisindexedoncustomerID,thenforthenfortheDynamicCheck/UncheckCheck = Youcan set a source (SQL or another Query Object) fortheLookupStaticCheck/UncheckCheck = Youcan type in the lookup valuesRestricttoCheck/UncheckCheck = ThelistFetchNow, OnEvery use, Lazy, By SearchNow = Fetch the values only upon saving of this Query ObjectOnEvery use time end user screen loads for prompting filtersMin.Key LengthNumber 0-4By Search = Fetch matching values when user starts typing values in the filterMin.Key LueryNumber 0-4By search fetching of data starts only after these many characters are typed by the userUser DefinedCheck/UncheckCheck = You will provide a user defined SQL or data source of lookup values Uncheck = Automatically generates DISTINCT based query to get lookup valuesNew Source/ Luisting QOExisting QO Existing QOFrom lookup value result set, select the field of valuesLinkto Check/UncheckCheck = Specifies that this is a nested lookupLinkto Check/UncheckCheck = Select the parent field field of this property of State field Note that you must use the parent field for this property of State fieldNoCheck/UncheckCheck = Specifies that this in a nested lookupLinkCheck/UncheckCheck = Select the parent field field for this p	Key Value Field	Select a field	When we have Lookup values with display and value columns, the value should apply to filter on key field, instead of display applying filter on this field. This is a SQL optimization option. If you create a lookup with customerID
DynamicCheck/UncheckCheck = You can set a source (SQL or another Query Object) for the Lookup valuesStaticCheck/UncheckCheck = You can type in the lookup valuesRestrict to listCheck/UncheckCheck = The list shown to the end user for selecting values for filtering should not allow typing in new value other than listFetchNow, On Every use, Lazy, By SearchNow = Fetch the values only upon saving of this Query ObjectMin.Key Lery By SearchNow = Fetch the values when user selects this field for filtering and clicks on combo for value selection By Search = Fetch matching values when user starts typing values in the filterMin.Key LengthNumber 0-4By search fetching of data starts only after these many characters are typed by the userUser DefinedCheck/UncheckCheck = You will provide a user defined 			and customer name and your table is indexed on customerID, then for the customer name field, set customerID as Key value Field
StaticCheck/UncheckCheck = You can type in the lookup valuesRestrictCheck/UncheckCheck = The list shown to the end userlistCheck/UncheckCheck = The list shown to the end userFetchNow,Now = Fetch the values only upon saving of this Query ObjectDevery use, Lazy, By SearchNow = Fetch the values only upon saving of this Query ObjectMin.KeyLazy = Fetch the values when user selects this field for filtering and clicks on combo for value selection By Search = Fetch matching values when user starts typing values in the filterMin.KeyNumber 0-4By search fetching of data starts only after these many characters are typed by 	Dynamic	Check/Uncheck	Check = You can set a source (SQL or another Query Object) for the Lookup values
Restrict listCheck/UncheckCheck = The list shown to the end user for selecting values for filtering should not allow typing in new value other than list allow typing in new value other than list allow typing in new value other than list allow typing in new value other than listFetchNow, 	Static	Check/Uncheck	Check = You can type in the lookup values
FetchNow, On Every use, Lazy, By SearchNow = Fetch the values only upon saving of this Query Object Dn Every Use = Fetch the values every time end user screen loads for prompting filters Lazy = Fetch the values when user selects this field for filtering and clicks on combo By Search = Fetch matching values when user starts typing values in the filterMin.Key LengthNumber 0-4By search fetching of data starts only after these many characters are typed by the userUser DefinedCheck/UncheckCheck = You will provide a user defined SQL or data source of lookup values Uncheck = Automatically generates DISTINCT based query to get lookup valuesNew Source/ Existing QONew Source/ Existing QOWhether user defined is new SQL or an existing QO Existing QOValue ColumnSelect from List From lookup value result set, select the field of displayValue During Link to Parent FieldCheck/UncheckCheck = Specifies that this is a nested lookupLink to Parent FieldCheck/UncheckCheck = Select the parent field to which this field will be nested. For example, Set Country as the parent field of this property of State field Note that you must use the parent value in the where clause of lookup SQLLinkCheck/UncheckCheck = Before anplying a filter on Parent	Restrict to list	Check/Uncheck	Check = The list shown to the end user for selecting values for filtering should not allow typing in new value other than list
Min.Key LengthNumber 0-4By search fetching of data starts only after these many characters are typed by the userUser DefinedCheck/UncheckCheck = You will provide a user defined SQL or data source of lookup values Uncheck = Automatically generates DISTINCT based query to get lookup valuesNew Source/ Existing QONew Source/ Existing QOWhether user defined is new SQL or an 	Fetch	Now, On Every use, Lazy, By Search	Now = Fetch the values only upon saving of this Query Object On Every Use= Fetch the values every time end user screen loads for prompting filters Lazy = Fetch the values when user selects this field for filtering and clicks on combo for value selection By Search = Fetch matching values when
User DefinedCheck/UncheckCheck = You will provide a user defined SQL or data source of lookup values Uncheck = Automatically generates DISTINCT based query to get lookup valuesNew Source/ Existing QONew Source/ Existing QOWhether user defined is new SQL or an existing Query ObjectDisplay ColumnSelect from List From lookup value result set, select the field of displayValue ColumnSelect from ListFrom lookup value result set, select the field of valuesLink Lookup Parent FieldCheck/UncheckCheck = Specifies that this is a nested lookupLink to Parent FieldCheck/UncheckCheck = Select the parent field to which this field will be nested. For example, Set Country as the parent field for this property of State fieldLinkCheck/UncheckNote that you must use the parent value in the where clause of lookup SQLLinkCheck/UncheckCheck = Before applying a filter on Parent	Min. Key Length	Number 0-4	By search fetching of data starts only after these many characters are typed by the user
New Source/ Existing QONew Source/ Existing QOWhether user defined is new SQL or an existing Query ObjectDisplay ColumnSelect from List Select from ListFrom lookup value result set, select the field of displayValue ColumnSelect from List Select from ListFrom lookup value result set, select the field of valuesLink Lookup 	User Defined	Check/Uncheck	Check = You will provide a user defined SQL or data source of lookup values Uncheck = Automatically generates DISTINCT based query to get lookup values
Existing QOExisting QOexisting Query ObjectDisplaySelect from ListFrom lookup value result set, select the field of displayValueSelect from ListFrom lookup value result set, select the field of valuesLink LookupCheck/UncheckCheck = Specifies that this is a nested lookupLink toCheck/UncheckCheck = Select the parent field to which this field will be nested. For example, Set Country as the parent field for this property of State fieldLinkCheck/UncheckNote that you must use the parent value in the where clause of lookup SQLLinkCheck/UncheckCheck = Before applying a filter on Parent	New Source/	New Source/	Whether user defined is new SQL or an
Display ColumnSelect from ListFrom lookup value result set, select the field of displayValue ColumnSelect from ListFrom lookup value result set, select the field of valuesLink LookupCheck/UncheckCheck = Specifies that this is a nested lookupLink to Parent FieldCheck/UncheckCheck = Select the parent field to which this field will be nested. For example, Set Country as the parent field for this property of State fieldLinkCheck/UncheckNote that you must use the parent value in the where clause of lookup SQLLinkCheck/UncheckCheck = Before applying a filter on Parent	Existing QO	Existing QO	existing Query Object
ColumnField of displayValue ColumnSelect from List field of valuesFrom lookup value result set, select the field of valuesLink LookupCheck/UncheckCheck = Specifies that this is a nested lookupLink to Parent FieldCheck/UncheckCheck = Select the parent field to which this field will be nested. For example, Set Country as the parent field for this property of State fieldLinkCheck/UncheckNote that you must use the parent value in the where clause of lookup SQLLinkCheck/UncheckCheck = Before applying a filter on Parent	Display	Select from List	From lookup value result set, select the
Value ColumnSelect from List field of valuesFrom lookup Value result set, select the field of valuesLink LookupCheck/UncheckCheck = Specifies that this is a nested lookupLink to Parent FieldCheck/UncheckCheck = Select the parent field to which this field will be nested. For example, Set Country as the parent field for this property of State fieldLinkCheck/UncheckNote that you must use the parent value in the where clause of lookup SQLLinkCheck/UncheckCheck = Before applying a filter on Parent	Column	Colock from List	Tield of display
Link LookupCheck/UncheckCheck = Specifies that this is a nested lookupLink to Parent FieldCheck/UncheckCheck = Select the parent field to which this field will be nested. For example, Set Country as the parent field for this property of State fieldLinkCheck/UncheckNote that you must use the parent value in the where clause of lookup SQLLinkCheck/UncheckCheck = Before applying a filter on Parent	Column	Select from List	From lookup value result set, select the
LinktoCheck/UncheckCheck = Select the parent field to which this field will be nested. For example, Set Country as the parent field for this property of State fieldNoteNote that you must use the parent value in the where clause of lookup SQLLinkCheck/UncheckCheck = Before applying a filter on Parent	Link Lookup	Check/Uncheck	Check = Specifies that this is a nested lookup
Note that you must use the parent value           in the where clause of lookup SQL           Link         Check/Uncheck	Link to Parent Field	Check/Uncheck	Check = Select the parent field to which this field will be nested. For example, Set Country as the parent field for this property of State field
Link Check/Uncheck Check = Before applying a filter on Parent			Note that you must use the parent value
	Link	Check/Uncheck	Check = Before applying a filter on Parent



Mandatory	field, the nested field lookup values will not be listed Uncheck = Before applying a filter on Parent field, ALL values will be listed for
	nested field. When a filter is applied on parent field, NESTED values will be listed



#### Sort Step

Data passing through a Sort step gets sorted based on the properties set in the step.

Transfo	rmation						
	Da	ata Source	So	rt	Format		
•							
Pro	perties	Result					
		Field		Criteria		Case Insensitive	
+ ×	Sort By	PolicyNumber	•	Ascending	•		
+ ×	Then By		•		•		
+ ×	Then By	ļ	•		▼		
+ ×	Then By	J	•		<b>•</b>		

Figure 9: Sort Step

The properties to set are:

Property	Values	Comments
Sort by Field	Select field from list	You can add multiple such fields using
		Sort by and Then by lines based priority
		order of sort need
Criteria	Ascending/Descending	Sorting criteria as either ascending or
		descending order
Case	Check/Uncheck	Check = ABC is at same level as ABc
Insensitive		XYZ is smaller than abc
		Uncheck = ABC is smaller than ABc
		XYZ is bigger than abc



#### Formula Fields Step

Formula Fields step allows you to add calculated fields that are populated at run time. These calculated fields are generally based on existing fields.

Transformation		
Data Source	Format	
	Formula Fields $f_x$	
•		
Properties Result	in and it is a second sec	
Fields	Formula	
123 AgencyKey	Anne: InterestOnPremium Return Type: NUMBER Precision: Scale:	]
123 PolicyDateKey		
123 PolicyHolderKey		
123 PolicyTypeKey	I InterestOnPremium = PremiumAmount * (ClaimAmount *0.15 + UtilisedPremium *0.25)/100;	
123 PerilKey	2	
123 TerritoryKey	3	
Aa PolicyNumber		
123 TotalAmount		
123 UtilisedPremium		
123 BalancedAmount		
123 PremiumAmount		
123 ClaimAmount		
123 AmountPaid		
🗲 123 InterestOnPremium		

Figure 10: Formula Fields Step

Action Button	Comments
Add	To add a new formula field
Delete	To delete the selected formula field

For each added formula field, following properties are set:

Property	Values	Comments
Name	Type Yourself	Name and caption of the field, as visible in next steps and to the end user
Return Type	Number Char Date	Determines the data type of the formula field
Length/Precision	Type yourself	Length of field for Char data type. Precision or length of field for Number data type.
Scale	Type yourself	Scale or number of digits after decimal point
Formula	Formula String	Java script syntax formula



#### Formula String Syntax

Follow JavaScript Syntax to create a formula. To create a formula, you can use field names and define variables. A formula may have 'if' construct as well as 'nested if' construct. You can use logical operators too. If want to add more than one statements in formula, use semicolon ';' as separator between two statements.

Example:

For a formula field named TotalAmount,

var total ;
if (unitprice < 10 )
{total = unitprice\*quantity;}
else
{total = unitprice;}
TotalAmount = total;</pre>



# **Advanced Steps**

#### Merging two sources

Intellicus Query Objects support two types of merging of data sets.

- 1) Join Equijoin, Outer joins
- 2) Union Equal columns, Unequal columns

#### Join

This step takes two inputs. When the data is passing through this step, the data of both inputs will be joined based on properties set for this step.



Figure 11: Join Step

The Join step properties are:

Property	Values	Comments
Select Al Fields	Check/Uncheck	Check = All fields from both the sources will be available in the output of this step The ambiguous field names will be automatically renamed (suffixed with a underscore and number) Uncheck = You can choose which fields
		should be available in the output of this step Choosing is done by selecting the checkbox adjacent to field names of both inputs
Join Type	Select from:	Select the type of join from the available
		1150



	Left Outer Right Outer Full Outer		
Join	Field name	Operator	Forms the Join Key
Conditions	Field Name		



#### Union

Union step takes two or more inputs. The data passing through this step appends to one another and forms a single output.

Generally the data inputs selected for Union are of same structure i.e. the columns are same. But this step supports exceptions and allows having extra columns in some inputs. You can decide whether to carry forward the fields coming from only some inputs to output.

During the union process you can decide to take the out sorted or you can prefer unsorted appending.

Transformation													•
	Insuran	ce Q1Data	Insurance Q2I	Data	Jnion	Fo	mat						-
4												Ľ	*
Union Type: C	Unsorted C Sort	ted 🔲 Remove D	uplicate Rows							Column:		000	,
	AgencyKey	PolicyDateKey	PolicyHolderKey	PolicyTypeKey	PeniKey	TerritoryKey	PolicyNumber	TotalAmount	UtilisedPremium	BalancedAmount	PremiumAmount	ClaimAmount	
Sort Priority													
Sort Criteria													
Insurance Q1Data	AgencyKey	PolicyDateKey	PolicyHolderKey	PolicyTypeKey	PerilKey	TerritoryKey	PolicyNumber	TotalAmount	UtilisedPremium	BalancedAmount	PremiumAmount	ClaimAmount	,
Insurance Q2Data	AgencyKey	PolicyDateKey	PolicyHolderKey	PolicyTypeKey	PenilKey	TerritoryKey	PolicyNumber	TotalAmount	UtilisedPremium	BalancedAmount	PremiumAmount	ClaimAmount	,

Figure 12: Union Step

The properties of Union step are:

Property	Values	Comments
Union Type	Unsorted Sorted	The output of this step shall be sorted or not
Sort Priority	Number 1-3	This property is at field level. This is set below the field name. Set the number 1, 2 or 3 to the fields which should be sort key
Sort Criteria	Ascending Descending	Sorting criteria as either ascending or descending order
Remove Duplicate Rows	Check/Uncheck	Check = To get distinct rows from Union step
Column	Type Yourself	The selected field name populates automatically. You can change the caption of the resultant field



Action Button	Comments
Add Column	To add a new Column
Rename Column	To apply typed name to the selected column
Delete Column	To delete the selected Column



## Query Objects with Dynamic Fields

#### **Dynamic Fields Step**

Dynamic Fields step allows you get flexibility of adding or removing fields to a Query Object at run time based on your meta information.

This step has capacity to

- 1) Add dynamic fields by Pivoting data from input Data Source
- 2) Dynamically fetch meta data for field properties

This step takes one input Data Source.

Transfo	rmation						
Data	Source	Dy	namic Fields	FC	ormat		
•							 
Pro	perties F	Result					
Dyna	mic Metadata	Pivoting					
New	Source O Existin	ng QO		P			
Connec	tion: Oracle			•			
SQL	_						
Desig							
select	HR.CUSTOMFIEL	DS_NEW.^ from I	HR.CUSTOMFIELD	S_NEW			
Field	Attribute Mappin	9	Max Piete			Select All Fixed Fields	
-	Field Id			1 <b>C</b>	= Ô	A EIRST NAME	<u></u>
	Conting			/IL [		Au LAST NAME	=
	Caption		CAPTION			Aa EMAIL	
	Alignment		ALIGNMENT	[		Aa PHONE_NUMBER	
±×	Qualifier		QUALIFIER		•	📝 🔯 HIRE_DATE	
$\pm \times$	Group Label		GROUP_LEVE	L [	•	V Aa job_id	
$+ \times$	Hidden	E	HIDDEN	[		7 123 SALARY	-

Figure 13: Dynamic Fields Step

#### Dynamic Metadata

This step takes an SQL or other Data Source that defines the metadata of the dynamic result set at run time.

This SQL will be fired just before fetching the input Data Source.

The Field Attribute Mapping section takes each field from the metadata result set and maps it to Query Object field properties.

The important mappings are Field ID, Field Name, Caption and Data Type.



#### Pivoting

Pivoting allows you to convert highly normalized, Name Value paired data into flattened tabular data.

Pivot Columns: specifies which column has field ID and which column has value.

Select Grouping: specifies grouping fields, when grouped on which, the normalized data converts to flat table.



### **Custom Step**

#### External Task

External task step allows you to call standard and custom 3<sup>rd</sup> party processes from within Intellicus Query Object. Some may be in-proc and some tasks may be sent to remote execution by appropriate bridge components.

There are few pre-configured external tasks. More external task types can be configured.

Pre-configured external task types:

Task Type	Comments
R Job	R Analytics Server scripts can be executed and results be
	retrieved
Hive Job	Hive jobs can be executed and results retrieved for analysis
Pig Job	Jobs created using Pig scripts can be executed using this
	option
Custom	If you have custom-written scripts, you can use this option
MapReduce	to execute such jobs
Job for	
Hadoop	

Properties in case of an R Job are discussed below:

Property	Values	Comments
Server IP	Type Yourself	This is the IP address of R Server
Plot Type	Select from List:	You can select the Plot Type in case of
	Box	Format Type as image
	Scatter	
	Bar	
	Groupbar	
	Histogram	
	Pie	
	Custom	
	None	
Format Type	Select from List:	You can specify format of the output
	PNG	
	JPEG	
	BMP	
Model_File	Type Yourself	Location of the R Model file
No_Of_Images	Type Yourself	In case the Format Type is an image,
		you can specify number of images in the
-		output
Script	Type Yourself	R script to be performed on the data
Validate	Click the action	Checks and validates R job
	button	

Let us take an example where the Query Object has multiple data sources from .csv files. We have an R script that contains code to process this data.





Figure 14: R Job Example

The output generated is in the form of images as shown below:



Figure 15: R Job Output



# Data Extraction and Forwarding Agent (DEFA) Step

Data Extraction and Forwarding Agent (or DEFA) collects identified data at predefined intervals from a data source and forwards it to a data collector component (Intellicus Report Server) which can transform and load this data. It gives you an ease of receiving only the incremental data as well.

#### **DEFA step in Query Object**

A DEFA step will be defined for receiving data from one or more DEFA agents.

For defining a DEFA step, you need to have a snap shot of data that can be received by this DEFA step. This sampling data is used to understand structure of data that will be sent by configured DEFA agent(s) for this step.

You need to specify a connection for metadata for designing a query. This would help DEFA know which data to fetch.

Steps <	Transformation
Data Source	
対 Join	
Union	Load
Y Filter	
17 Sort	DEFA
fx Formula Fields	
Dynamic Fields	
External Task	<u>«</u>
📝 Format	Properties Sample Data
🗟 Load	Remote Source Fields Connection for Metadata: 33_123
🔯 DEFA	Common Properties SQL
	Select Source 1 Select * from (riho) (th) TestPurchaseSalesData
	152_154
	152_159
	152_73
	▼ 33_123
	33_144
	acvd@#\$ Incremental Column: PurchaseDateTIME
	Schedule
	Data Extraction Start at: 11 🗨 hr : 50 💌 min
	Data Extraction Interval:     00:10:00     (hr.min:sec)     Data Forward Interval:     23:00:10     (hr.min:sec)

Figure 16: DEFA Step

The properties to be defined for DEFA are mentioned in the underneath table.

Property		Values		Comments	
Connection for Metadata		Select list	from	Connection to be used to design query for metadata.	
				Select from already created connections on the Configure>Databases tab	
Incremental Column		Select list	from	Identity column for DEFA to	
Schedule	Data	Select	from	Start time for DEFA to	



Extraction	list	fetch(extract) data
Start at		
Data	Type Yourself	Time interval after which DEFA
Extraction	(as	should fetch data
Interval	hr:min:sec)	
Data Forward	Type Yourself	Time interval after which DEFA
Interval	(as	should send (forward) data to
	hr:min:sec)	Report Server

# **Field Properties**

Property	Values	Comments
Data Type	CHAR, NUMBER, DATE, BINARY	Select the data type of the incoming data
Data Format	Format String	Specify the format of the incoming data. This is useful only if Date or IP Address type data are incoming in CHAR fields but needs to be converted to Date and Number types for further use
Sort Priority	Number 0-N	If the data is sorted on multiple fields then specify sort priority number of this field. Primary sort field should be the lowest number
Sort Criteria	Ascending/ Descending	Specify sort as either ascending or descending order
Length	Type yourself	Length of field for Char data type
Scale	Type yourself	Scale or number of digits after decimal point
Database Time Zone	Select Time zone from the list	Specify the time zone in which the incoming date data is stored. This is useful only if date time data needs to be converted to other time zone data based on reporting requirement. For example when incoming GMT data need to show EDT (or any requested TZ) value in report, specify that the incoming data is GMT. The output format is generally specified in Format step or in user preference
Locale	Select from the list	Select the language/ country in which the incoming date data is stored
Qualified Name	Type yourself	This name helps using the field name in all the SQL clauses such as WHERE and ORDER BY or to resolve field name ambiguity when same field comes from two tables or expressions



### Load Step

Load step under Query Object loads the incoming data (after extraction and transformation) into a target system (File, Relational database, HDFS, No SQL / Columnar system etc.).

You need to select a target Intellicus connection (already created under Configure > Databases) on which data should be loaded. One of the important configurations is the unchecking of the 'Read Only' setting of the target system. If not unchecked, this will not show in the list of target system where the extracted data can be loaded.

There are target connection specific properties required to load data into the system.

< Transformation Steps Data Source 🔀 Join Load U Union E Y Filter 17 Sort DEEA fx Formula Fields Dynamic Fields External Task 📝 Format Properties 🚵 Load Target Connection: 159\_Load • 🚯 DEFA Table Properties Target Table Name: normalUser Suffix TimeStamp If Table Exists: Append Data • Data Properties If Record Exists: Update or Insert Ignore Empty Rows Error Handling Error Threshold: Column Properties Fetch Schema Field Name Constraint Column Name Data Type Size Precision Scale PRIMARY KEY ± ≥ Uniqueld Uniqueld INT • PurchaseDate DATETIME • -

You can fetch list of existing Tables/Files from the connection.

Figure 17: Load Step

The properties of Load step (in case target system is an RDBMS) are:

Property		Values		Comments		
Target Connection		Select	from	Select a target connection on		
		list		which data should be loaded		
Table	Target Ta	able	Select	from	Select target table name using	
Properties	Name		list		the selected Target Connection	
1	If Table Exists		Select list:	from	Action to be performed in case table exists:	



		Append Data	To append data in the end
	Delete Data		To delete data in existing table
		Skip Load	To not perform any action on table and skip load step
		Drop and Create New Table	To drop the table and create new table with same name and new schema.
		Truncate Existing Data	To delete data in existing table, but Admin user is able to roll back this data
	Suffix TimeStamp	Check/Uncheck	Check= suffix timestamp in the chosen format to table
			Select from the available list
Data Properties	If Record Exists	Select from list:	Action to be performed in case record exists:
		Insert Only	Insert the new record
		Update Only	Update the existing record with the new
		Update or Insert	In case of an existing record, update it with the new record Else insert the new record
	Ignore Empty Rows	Check/Uncheck	Check= ignores empty rows in table while loading
Error Handling	Error Threshold	Type Yourself	Specify count of error after which loading process should stop.
			Any positive number>0 means stop processing after that many +1 errors i.e. if its value is 2,
			stop processing upon 3rd error.
Column Properties	Fetch Schema	Click the option	Fetches schema of the existing table
			You can see the field details of the data to be loaded under Column Properties section
	Remove All Columns	Click the option	Removes all columns in the target table

You can run and schedule Query Objects which are of Load type from under Data Model.

Load step can also be followed by the Data Source step further followed by Format step to be used for generating reports.



# E

**Note:** To know about loading into file, HDFS, NoSQL (Columnar) system, please refer WorkingwithLoadStep.doc



# **Query Object Properties**

### Connection

Query Object at the top level has two properties:

Property	Values	Comments
Name	Type yourself	Name of the Query Object
Connection	Select from list	(Default) = Use default connection available at run time based on priority of user selection or server configuration Connection Name = Always run using this named connection, irrespective of user selection

## Access Rights

Access rights on a Query Object can be granted to everyone, selected organizations or select users. Access rights given at Query Object level supersede folder level access rights.

Access rights applicable to Query Object are:

Access Right	Comments
Read	User can see the definition of the Query Object
	User cannot edit, delete the Query Object
	User cannot run reports using this Query Object
Write	User can delete, edit the Query Object.
	This right when given at folder level, user can create new Query Object in that folder, provided that user has Data Administrator system privilege
Execute	User can execute reports using this Query Object.
	User can create new reports using this Query Object

### **Advanced Properties**

Advanced properties can be at each Query Object level to control the behaviour of the Query Object and reports generated using this Query Object.



Advanced Properties: 1	l item selected	_ 🗆 ×
Save	cel	2
Audit Log	(Default)	
Run Priority	(Default)	
Database Connection Timeout		
Data Source Fetch Size		
Max. Rows		
Query Execution	(Default)	
Restrict To Background	(None)	
Restrict To Formats	(None) ACROBAT PDF COMMA SEPARATED HTML iHTML	
Default Memory Usage Per Exec		
Report Server Chunk Timeout		
Sort Area Size Per Exec		
Sort Threads Per Exec		
Data Caching	(None) 💌	
Update Fields At Runtime	(None)	

Figure 18: Advanced Properties

Property	Values	Comments
Audit Log	(Default) Enable Disable	You can switch ON or OFF audit logging for reports generated using this Query Object, irrespective of global audit logging setting
Run Priority	(Default) Low Medium High	Decides the priority in the request queue of Report Server
Database Connection Timeout	Type Yourself	Overrides the same property value at connection or global level
Data Source Fetch Size	Type Yourself	Overrides the same property value at connection or global level
Max. Rows	Type Yourself	Maximum rows restriction from this Query Object. Report level Max. Rows value can further downsize, but that cannot upsize this value



Query Execution	(Default) Synchronous Asynchronous	Asynchronous = Useful to free rendering thread when database is taking long time to process the data before it starts sending data in. Example: Heavy sorting at database, Complex procedures processing data before sending data
		Synchronous = thread waits after sending database request till data returns
Restrict To Background	(None) Enable Disable	Enable = Reports using this Query Object shall be allowed by submitting to Run in back ground only. Useful for long time taking Query Objects. Disable = Both Run and Run in background options will be available. This facility is dependent on scheduler licensing
Restrict To Formats	(None) List of available formats	<ul> <li>(None) = reports using this Query Object can run in all supported formats</li> <li>Selected Values = Reports using this Query Object will be allowed to run only mentioned formats.</li> <li>For example a report with few million rows in the output may be ok only in XLS</li> </ul>
		and Raw text formats
Default Memory Usage Per Exec	Type Yourself	Overrides the same property value at connection or global level
Report Server Chunk Timeout	Type Yourself	Overrides the same property value at connection or global level
Sort Area Size Per Exec	Type Yourself	Decides thread limitations set for in- memory sorting of rows.
		Overrides the same property value at connection or global level
Sort Threads Per Exec	Type Yourself	Decides thread limitations set for in- memory sorting of rows.
		Overrides the same property value at connection or global level
Data Caching	Enable Disable	Enable= To create a copy of data in local data store retrieved by a Query Object to re-use for in-view and post-view operations of a report up to specific time
Update Fields At Runtime	Enable Disable	Enable = If database query returns new fields at run time, this Query Object exposes all of them to the user on Ad hoc Wizard or Power Viewer



#### Data Cache:

Data Cache creates a copy of data in local data store retrieved by a Query Object using a specific set of business parameter values, which can be re-used for inview and post view operations of a report up to specific time.

The cache is created from final result set of Query Object, and re-used for inview and post-view purposes that are automatically identified to work from this result set.

The operations that would re-use cached data are:

- a) Add/Modify/Remove filter
- b) Add/Modify/Remove highlighting
- c) Add/Modify/Remove grouping
- d) Add/Modify/Remove sorting
- e) Add/Modify/Remove Charts, Matrix
- f) Load lookup values derived from main result set

The Data Cache life is determined by DATA\_CACHE\_PURGE\_TIME (in minutes) property in Server Properties. This is set to 30 minutes by default.

#### Caution:

- 1) When Query Object returns large data set with business parameters but filtered to small set with ad hoc filters, then enabling Data Cache is not recommended. The first run of reports could be too slow.
- Dynamically constructed Query Object SQLs may cause cache to be used even when new fields are added in in-view process resulting in incorrect result set. Enabling Data Cache is recommended only for static fields Query Objects.
- 3) Data Cache can be re-used across report run requests depending on matching of business parameters and Cache Purge Time.
- 4) Local data store may not support some field nomenclature; you may have to rename Query Object fields by aliasing or other means to comply with local store, in such case.

#### Update fields at Run time:

Adding newly returned fields from a SELECT \* type of SQL or a dynamic result set returning procedure to Query Object at run time is achieved by this property. The newly added fields do not get saved in the definition of the Query Object permanently. The newly added fields are available in transient at each run time.

#### Caution:

When Query Object is marked for Update fields at run time, then the Query Object may have to be executed more than once to find newer fields, causing slowness.



# **Upgrading from Intellicus 4 or 5**

If you are upgrading from Intellicus 4 or 5, then you will observe the following changes:

#### Changes

- The Query Object Editor has completely changed into a graphical editor
- The New Query Object is based on Multiple Steps concept
- The Query level properties and Field level properties have been categorized and moved into separate steps or sections

#### **Backward Compatibility**

All of your Query Objects created in previous versions of Intellicus are automatically upgraded to the new structure. All reports based on those Query Objects will run properly without doing any manual changes to the Query Object.

When you open the Query Object created in previous versions of Intellicus, then it opens properly in the new designer.

You may have to slightly learn the new graphical user interface, SQL Wizard, the property values are slightly placed differently than older version.

Item		Previous Version	New Version
SQL		Edit button on Query Object Editor screen	Select Data Source step -> SQL Design Button on properties tab
Field properties			
	Formatting	Select field on Query Object Editor Screen, property appears next to the field on right side	Select Format step - > Select field name in the properties tab
	Field Source properties	Select field on Query Object Editor Screen, property appears next to the field on right side	Select Data Source step -> Select field name in the properties tab
	Field Lookup Values property	Select field on Query Object Editor Screen, property appears next to the field on right side	Select Filter Step -> Select field name in properties tab, Select Lookup Values check box
	Mandatory Filters	Filters section on right top section of	Select Filter Step -> Select field name in

#### Mapping the Properties



-	-		
	Query Object Editor	properties	tab,
		Select	Mandatory
		Checkbox	



# **Miscellaneous**

## Hyperlink

When you make a field a clickable hyperlink, you can link a URL or a report with that report. You can make "drill-down" reports using hyperlinked field.

Hyperlink Options							
DRILLDOWN:REPORT_ID=D479A53D-DECB A348432E19D5:ACTION_CODE=002:CATEC 371470A44B7E:DSGN_MODE=ADHOC:REP CUSTOMER%>:~TARGET=0	-35AE-4E1A- GORY_ID=571937DE-9934-90CB-FFD0 ORT_FORMAT=dhtm:prmCustomer=<%	6	~				
			~				
Select Demo Customer Sales Detail	Target New Window	v(_blank)	*				
Report Parameter	Value Field	+					
prmCustomer	<%CUSTOMER%>	× ×					
System Parameter	Value Field	÷					
Report Format	IHTML	▼ ×					
	ОК	Cance	l				

Figure 19: Hyperlink Options dialog box

#### Hyperlink dialog properties

#### URL

The URL is automatically constructed by the "Drill Down to another Report" settings.

You can over write the URL on your own.

For external links such as web links you have to write your own URL text.

![](_page_46_Picture_11.jpeg)

### Drill Down to another Report

Property	Values	Comments
Select	Select Report using	Report to drill down to
Report	Report Selector	
Target	New Window	As per HTML standards
	Same Frame	
	Parent Frame	
	Parent Window	
Report	Parameter of the child	Specify parameter to be passed to child
Parameter	report	report
Report	Select field from this	Select the field whose value to be passed
parameter	report	to child report as the selected parameter
Value Field		
System	Select from list	Select if you need to pass system
Parameter		parameter value from this report or
		exclusively
System	Select value	For each system parameter you choose to
parameter		pass, relevant values for that system
Value Field		parameter populates in the list
		automatically. You shall choose desired
		value

![](_page_47_Picture_3.jpeg)