

BIRT Analytics 4.3

Technical Summary of New Features

The BIRT Analytics 4.3 (BA 4.3) release is focused on integration with BIRT iHub 3, a whole new look, and the addition of new functions and instructions. With BIRT iHub 3 integration, BIRT Analytics customers can leverage common shared services, resulting in improved IT efficiency and faster time to value. With BA 4.3 Actuate has put user experience at the forefront of product design by delivering a consistent, modern, user experience. New functions and instructions in both the Front-End and the Loader module increase productivity for end users and IT administrators alike.

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Introduction

BIRT Analytics (BA) provides fast, free-form visual data mining and predictive analytics. The uniqueness of BIRT Analytics results from a combination of the ease of use of data discovery tools with the power and sophisticated analytic products typically reserved for data scientists, and the operational and management reach of BIRT iHub 3.

One focus of this release has been to leverage key BIRT iHub 3 services, the integration of which provides a simpler architecture across our product lines, and faster time to market from not having to build and maintain these services separately for each product line. Please note that we will continue to package and sell BA as a standalone module, which includes the appropriate iHub 3 foundation elements to take advantage of the new integration points.

Actuate has also made several other technology/architecture improvements and functional enhancements. A summary list of new BA 4.3 improvements appears below:

- Integration points with iHub 3
- Functional enhancements to Loader and Front-End
- Architecture and technology

Integration Points with BIRT iHub 3

The new integration points with iHub 3 include the following:

- Single Sign-On (SSO)
- Integrated User Management
- Integrated logs
- Integrated deployment

These integration points enable you to more quickly realize value from your Actuate investment.

Simplified, Unified and Consistent User Experience

With BA 4.3, Actuate has put user experience at the forefront of product design. The new UI delivers a consistent, modern user experience.

The new UI is focused on several key principles enhancing design, and at the same time delivering a user experience that is:

- **Simple:** Removes extraneous objects, colors, and other visual elements that might distract users from their tasks or that might come across as “noise” in a finished product.
- **Modern:** Updates the design so that its interface, architecture, and other parts of the user’s experience look contemporary and fresh.
- **Elegant:** Recognizes that form is as important as function in crafting an experience with a design vocabulary and style that is sleek, sophisticated, and appealing.
- **Focused:** Ensures that data, data stories and visualization of the content takes center stage, while allowing application elements (fit and finish) to take a visual back seat, while still remaining powerful and effective.
- **Intuitive:** Craft solutions that take advantage of a user’s prior experience and expectations to eliminate confusion, frustration, or long learning curves.

value	columns	in group	remainder	index	zscore	graphic
under 30	[PS](Customer)[Age Band]	20,024	83,898	117.79	20.77	
married	[PS](Customer)[Marital Status]	60,129	295,084	100.57	1.50	
Professional	[PS](Customer)[Occupation]	15,169	75,098	101.09	1.38	
10k to 20k	[PS](Customer)[Income Band]	41,488	205,647	100.58	1.13	
Senior Manage	[PS](Customer)[Occupation]	11,889	58,099	100.82	0.81	
Shop Worker	[PS](Customer)[Occupation]	40,217	201,188	100.27	0.37	
Director	[PS](Customer)[Occupation]	14,858	71,815	100.57	0.65	
Widowed	[PS](Customer)[Marital Status]	39,843	187,384	100.34	0.51	
Self Employed	[PS](Customer)[Occupation]	23,379	73,215	100.39	0.45	
50k to 75k	[PS](Customer)[Income Band]	20,721	102,198	100.06	0.09	
Office Worker	[PS](Customer)[Occupation]	20,113	100,198	100.05	0.07	
over 75	[PS](Customer)[Age Band]	172	847	98.84	-0.84	
10k to 20k	[PS](Customer)[Income Band]	50,373	248,805	99.92	-0.19	
Single	[PS](Customer)[Marital Status]	83,864	314,454	98.60	-0.33	
under 10k	[PS](Customer)[Income Band]	24,143	116,409	98.78	-0.32	
Manual Labor	[PS](Customer)[Occupation]	34,378	120,083	98.78	-0.33	
Houseparent	[PS](Customer)[Occupation]	38,563	51,457	98.61	-0.37	
20k to 50k	[PS](Customer)[Income Band]	66,560	318,006	98.81	-0.31	
Unemployed	[PS](Customer)[Occupation]	9,384	46,058	98.30	-0.58	
over 75k	[PS](Customer)[Income Band]	1,081	5,085	98.28	-0.60	
Manager	[PS](Customer)[Occupation]	21,102	104,897	99.27	-0.01	
60 to 75	[PS](Customer)[Age Band]	9,333	40,540	100.6	-0.60	
Separated	[PS](Customer)[Marital Status]	40,106	243,178	99.21	-1.03	

Figure 1: Customer profile in BA 4.3

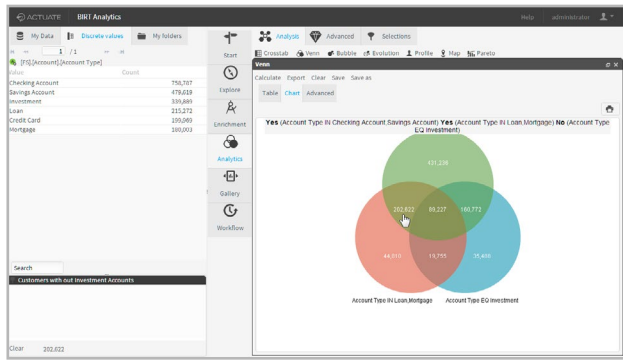


Figure 2: Venn diagram displaying customer segmentation

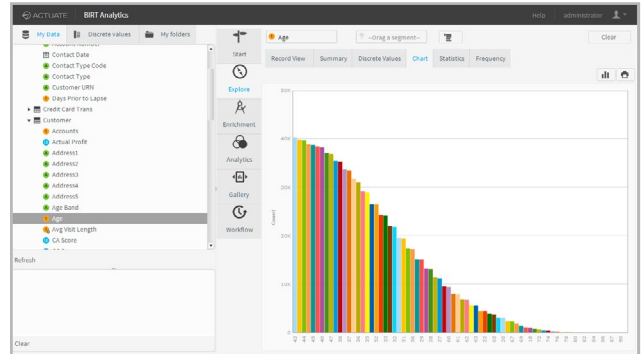


Figure 3: Explore age distribution with BA 4.3 visualizations

Functional Enhancements to Loader and Front-End UI

New Function - WEEKNUMBER

The WEEKNUMBER function returns the week number of any date, as specified in ISO-8601. This function is accessible from the transformation tab in the loader, as well as from within the expressions module in the user interface.

New Instruction - UNPIVOT

UNPIVOT allows creating a new table by unpivoting columns from a source table. It requires the following parameters:

- **Table:** Name for the new table
- **Discrete column:** Column from source table that will be the primary key. It must be 100% discrete.
- **Columns to unpivot:** List of numeric columns (integer or longinteger) to use for unpivoting.
- **Filter:** Optional filter

The process will generate as many records in the target table as the number 'columns to unpivot' indicates in each column to unpivot in the source table.

Source Table				Target Table		
PK	Pv1	Pv2		PK	Seq	Col
1	0	1		1	0	Pv2
2	2	0		2	0	Pv1
				2	1	Pv1
3	2	2		3	0	Pv1
				3	1	Pv1
				3	0	Pv2
				3	1	Pv2
4	0	0				

Figure 4: The table above shows the result of UNPIVOT, with the following parameters:
 Discrete column = PK
 Columns to unpivot = pv1, pv2

Example Use Case for UNPIVOT

An application example of this functionality could be to generate a table with all the dates included in a date interval. In a source table with a primary key (PK) and with columns startdate and enddate, the user can generate a target table with all PK and all the dates in the interval between startdate and enddate.

- First step would be to generate a numeric column in source table for unpivot : (n_days) with the difference of days between enddate and startdate (enddate – startdate)
- UNPIVOT using PK as Discrete column, and n_days as Columns to unpivot
UNPIVOT [Target Table],[PK],[n_days]
- Create a link between Source Table and Target Table
- Transfer the startdate from Source Table to Target Table
- Generate a new column for 'Date' in Target Table with the addition of startdate plus the value of sequence.

New Instruction - RANGEDLINK

RANGEDLINK allows a link between two tables to be created using a pair of columns on the primary table which denotes a range, to a column in the secondary table. The format for RANGEDLINK is as follows:

- Lower value - Name of the column in Table 2 to be linked – lower range.
- Upper value - Name of the column in Table 2 to be linked – upper range.
- Many - Name of the column in Table 1 to be linked Example : RANGEDLINK [Table_2].[Start_Date], [Table_2].[End_Date], [Table_1].[Trans_Date]

Table 1				Table 2			
RecId	Trans_Date	Transaction_Amount		RecId	Start_Date	End_Date	Period_Reference
1	20070520	104.27		1	20070401	20070631	2007-Q2
2	20070410	932.16					
3	20070829	43.33		2	20070701	20071028	2007-Q3
4	20071130	321.21		3	20071029	20041229	2007-Q4

Figure 5: RANGEDLINK between two tables



Discover the Power of BIRT Analytics

BIRT Analytics is a visual data mining and predictive analytics tool that the power of statisticians in the hands of business users for identifying customer insights within the organization.

Start your Free Trial today!

<http://www.actuate.com/free-trial/birt-analytics/>

Learn more about our BIRT Analytics solutions

<http://www.actuate.com/business-analytics/>

Architecture and Technology

A number of changes were made to update the architecture and technology:

- BAadmin and BAfrontend are now in Java
- BAadmin now includes online help
- PostgreSQL replaces MS SQL Server as the back-end database

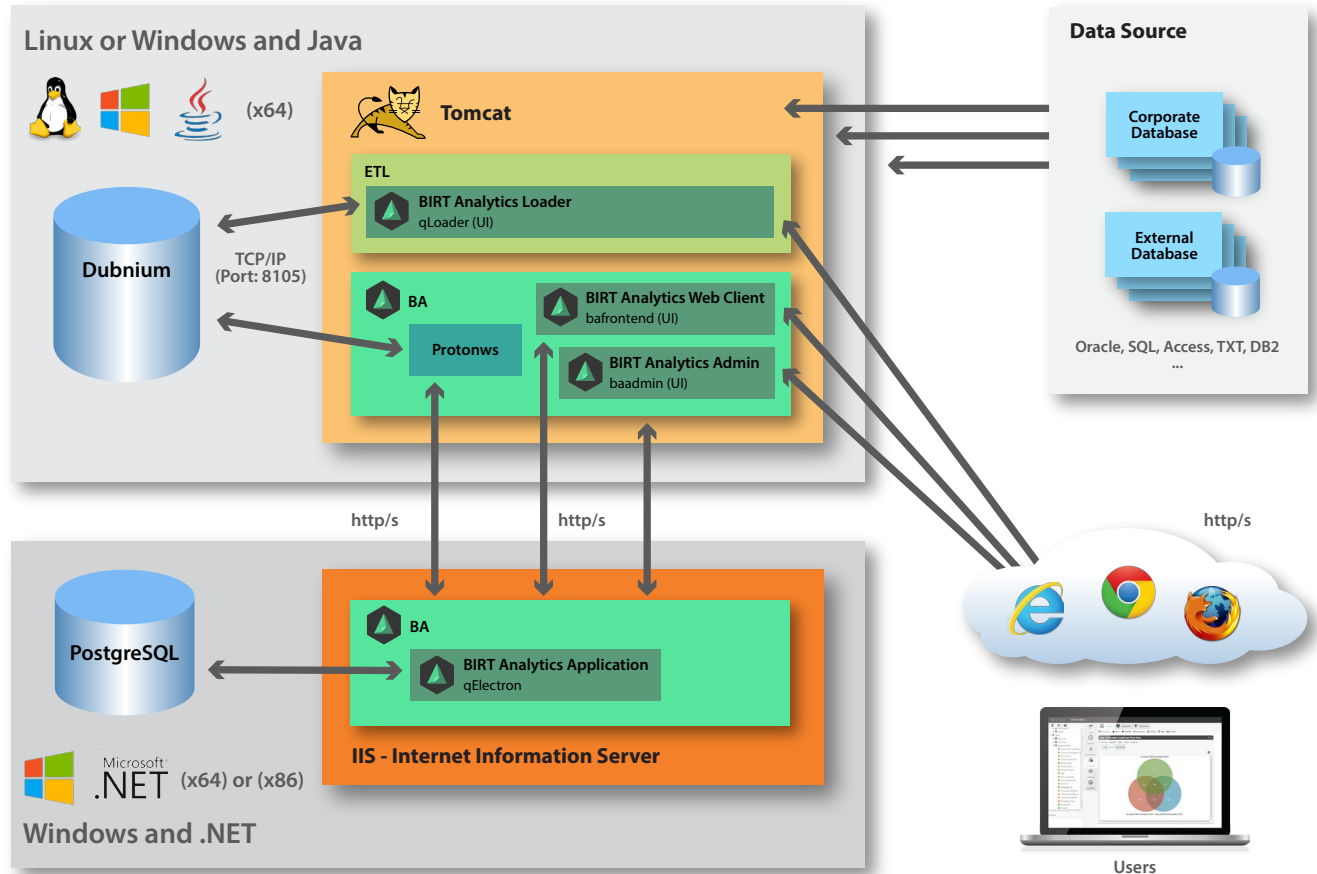


Figure 6: The BA 4.3 architecture

Upgrading to BIRT Analytics 4.3

Upgrading to BA 4.3 requires a new specific license key.

The main steps in the upgrade process include a backup of essential files, uninstallation / reinstallation of the product, and a restoration of the backed up files. The user's data repositories can be preserved and will become accessible after the administrator has resynchronized the repository and reassigned permissions. All the data segments created and saved by users are preserved – these are kept in the SQL Server 'wpt' table, which is not erased during an uninstallation. The loader scripts are preserved as well – these are kept in the dubnium projects and qloader folders, which are not erased during an uninstallation.

The migration from SQL Server to PostgreSQL requires the use of a migration tool provided by Actuate. Also, BIRT Analytics user information will need to be migrated to iHub 3.

For more detail see the '[Upgrade from BA 4.2 to BA 4.3](#)' document.

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