Lavastorm Analytics Library
Version 5.1.36
Release Notes

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Contents

LAL Node and LAE Compatibility

As of LAE 5.0 there was a change to the Lavastorm Analytics versioning of releases. LAL release numbers are now tied more directly to Major/Minor LAE releases. So for each Major/Minor version of LAE there will be a separate LAL release.

Major Version of LAL	Compatible Version of LAE
LAL 1.X.Y	LAE 4.5.Z
LAL 2.X.Y	LAE 4.6.Z
LAL 5.0.20	LAE 5.0.0
LAL 5.0.21 onwards	LAE 5.0.0.1 onwards
LAL 5.1.X	LAE 5.1.X

The idea behind this new LAL node and LAE versioning means that each node released in a LAL version will be fully compatible with the LAE version it is released against. This will simplify the selection of the appropriate LAL version as the user just needs to select the version that corresponds to the LAE release they have installed.

Installation Instructions

For LAE Desktop and Server users, there is a single installation stage, which is to run an installer on their Windows based machine.

For LAE Enterprise customers, there are two installation stages:

1. Run the installer on their Windows system(s).
2. Run the .sh file on the UNIX system where they have installed their LAE Server.

Installing on Windows

For both LAE Desktop and LAE Enterprise customers, there is a LAL Windows installer. Both types of customers will use the same installer, and will follow the same installation steps, as described below. Prior to installing, the user should shut down the windows LAE server if it is running (green dot labeled "Lavastorm Console" in the system tray, which BRE typically starts for you). You can stop this by right clicking on it, and choosing "Exit". For Windows Server installations this is achieved by stopping the Windows service "LavastormLAEServer5.1-*PortNumber*" – the PortNumber being the port LAE server is set to use, which by default is 7721.

On Top of Existing LAL Installation

If you have a previous version of LAL installed on your Windows system, run the LAL installer *Lavastorm_Analytics_Library_Pack- 5_1_X_Y_Z-windows-x86-32.exe (*where the actual name of the file matches the current release, replacing X,Y and Z with correct numbers). Be sure to have the installer install the LAL library into the same location as your last install, or the old library will not be overwritten.

Installing on UNIX for Enterprise Customers

Enterprise customers, who have their LAE Server on a UNIX machine, must take the additional steps outlined below to add LAL-related files to their LAE Server installation. The process is similar to the process of applying an LAE patch to the UNIX system.

There is a .sh file called Lavastorm_Analytics_Library_Pack-5_1_*X_Y_Z-<arch>*.sh *(*where the actual name of the file matches the current release, replacing X,Y and Z with correct numbers; Where <arch> is your operating system architecture (i.e., linux-x86-64). To add this to the LAE Server:

1. Shut down the current LAE Server, if it is running (If you don't you'll receive an error message regarding permissions).
2. Identify the Installation Directory where the existing LAE Server is installed.
3. Change the working directory to the Installation Directory, using the *cd* command:

   ```
   cd <installation-directory>
   ```

   where "<installation-directory>" is replaced by the name of the directory.
4. Copy the archive file into the Installation Directory.

5. Run the installer. To do this, execute the command:

   `sh Lavastorm_Analytics_Library_Pack-5_1_X_Y_Z-<arch>.sh`

   Where *<arch>* is your operating system architecture.

6. Follow the on screen prompts
7. Restart the LAE Server.

Using the LAL Library

Upgrading Existing Graphs to latest LAL V5.1.

All graphs that used an older LAL version will simply pick up the new LAL library, provided that the new libraries were installed over the old LAL library.

LAL V5.1.36

Overview

New in Version 5.1.36 of LAL, the following nodes within the Statistical and Predictive Analytic Node Pack:

- The Linear Regression Diagnostics node
- The Logistic Regression Diagnostics node

The Statistical and Predictive Analytic Node Pack (Powered by TIBCO®) is Premium licensed.

Note – The nodes above and the Power R node are supported on the Windows platform and Linux 64bit platform only unless otherwise stated.

Details of New Functionality

The Linear Regression Diagnostics node generates diagnostic plots from a linear regression model.

The Logistic Regression Diagnostics node generates diagnostic plots from a logistic regression model.

Bugfixes

The Output Excel and Append Excel nodes FormatOutput parameter has been updated to include a "From Template" option; this allows a template file to specify the cell formatting.
Previously the FormatOutput parameter only provided a True/False option.
In addition, two further options have been included; "From BRD" (which behaves in the same way as the previous "True" Boolean option) and "No Formatting" (which behaves in the same way as the previous "False" Boolean option).
The True/False options remain so that users with existing graphs can continue to run their graphs without any impact. LAL-2078.

LAL V5.1.35

Overview

New in Version 5.1.35 of LAL, the following nodes within the Statistical and Predictive Analytic Node Pack:

- The Decision Forest node
- The Predict Decision Forest node

The Statistical and Predictive Analytic Node Pack (Powered by TIBCO®) is Premium licensed.

Note – The nodes above and the Power R node are supported on the Windows platform and Linux 64bit platform only unless otherwise stated.

Details of New Functionality

The Decision Forest node models data using the Random Forest model allowing identification of data trends using an 'ensemble' of decision tree models.

The Predict Decision Forest node predicts the value or classification for a dependent variable in a Random Forest model based on the value of the independent variables.

Bugfixes

The Time Series Diagnostics node now supports "OtherInterval" to be specified for the Time Series plot type LAL-4292

The Time Series Forecast node now supports "OtherInterval" to be specified for the Trend & Seasonal series type. LAL-4315

The Fuzzy X-Ref and Fuzzy Join nodes now support multiple fields to be defined for the Exact Expression and the Fuzzy Expression. LAL-1587/LAL-4229/LAL-3791/LAL-1467

The Hive Join and Hive Sample nodes now correctly display numerical values on Linux 64 bit platforms. LAL-4282

LAL V5.1.34

Overview

New in Version 5.1.34 of LAL, the following nodes within the Statistical and Predictive Analytic Node Pack:

- The Time Series Forecast node
- The Time Series Diagnostics node

The Statistical and Predictive Analytic Node Pack (Powered by TIBCO®) is Premium licensed.

Note – The nodes above and the Power R node are supported on the Windows platform and Linux 64bit platform only unless otherwise stated.

Details of New Functionality

The Time Series Forecast node uses the Holt-Winters method to forecast a time series that can optionally contain a trend and seasonal variations.

The Time Series Diagnostics node generates plots of univariate time series data.

known issues/considerations

- The time series plot option only currently supports the yearly (default) option. LAL-4292 for Time Series Forecast and LAL-4315 for Time Series Diagnostics.

LAL V5.1.33

Overview

New in Version 5.1.33 of LAL, the following nodes within the Statistical and Predictive Analytic Node Pack:

- The Market Basket Analysis node
- The Market Basket Miner node

The Statistical and Predictive Analytic Node Pack (Powered by TIBCO®) is Premium licensed.

Note – The nodes above and the Power R node are supported on the Windows platform and Linux 64bit platform only unless otherwise stated.

Details of New Functionality

The Market Basket Analysis node generates Frequent Itemsets and Association Rules from transactional data.

The Market Basket Miner node Extracts association rules from an association rule model.

Third party known issues/considerations

- The latest Matrix binary (1.1.5) is incompatible with LAE, as a result, we have configured the R Library Package Download node to retrieve version 1.1.4 from https://github.com/TIBCOSoftware/terr-Matrix/tree/master/inst/binary.
  Users of the Power R node, who do not have the R Library Package node, are expected to use the above location in line with the install.packages command and save the libraries to *<LAE temp directory>/TERR/libs/*. Issue LAL-3620

LAL V5.1.32

Overview

Version 5.1.32 of LAL:

- The HDFS Download node
- The FTP nodes (Get and Put) enhancement

Prerequisites

- To utilize the HDFS nodes you must have a working instance of a Hadoop Hive Cluster.

Details of New Functionality

The HDFS Download node Downloads file(s) from a specified HDFS server using the WebHDFS API.

The FTP Put and FTP Get nodes now include the following two new parameters (LAL-3556):

- The 'PassiveMode' parameter to support Active and Passive FTP modes.
- The 'ConnectionTimeout' parameter to deal with no response scenarios.

Third party known issues/considerations

- When downloading files from the Hadoop Hive Cluster, the WebHDFS API automatically encodes files to base64 format. As a result, it is not always possible to view the contents of the download in the fields on the output.

  For example, if the 'DataOutputMode' parameter is set to "Field", due to the automatic base64 encoding, the encoded result will be visible instead of the contents.

  In order to potentially view the contents, the 'DataOutputFieldEncoding' parameter must be set to "None". However, this is not always possible due to un-supported characters in the original file. If a user does come across this issue then the workaround is to set the 'DataOutputMode' to "File" and then import the data using one of the data acquisition nodes.

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LAL V5.1.31

Overview

New in Version 5.1.31 of LAL, the following nodes within the Statistical and Predictive Analytic Node Pack:

- The Hierarchical Clustering node
- The K-Means Advisor node
- The K-Means Clustering node
- The Linear Regression node
- The Logistic Regression node
- The Predict Linear Regression node
- The Predict Logistic Regression node
- The R Library Package Download node (only supported on Windows platform)

The Statistical and Predictive Analytic Node Pack (Powered by TIBCO®) is Premium licensed.

Note – The nodes above and the Power R node are supported on the Windows platform and Linux 64bit platform only unless otherwise stated.

Details of New Functionality

The Hierarchical Clustering node classifies data into a specified number of clusters. The data are partitioned into a hierarchy of sub-groups. The hierarchy of sub-groups is constructed from the bottom up by clustering the observations such that the distance between observations is minimized at each step.

The K-Means Advisor node recommends the best number of clusters to use when performing a K-Means analysis of the data.

The K-Means Clustering node classifies data into a specified number of clusters. The data are partitioned into k groups such that the 'sum of squares' distance from the points to the assigned cluster centers is minimized. The node uses the Hartigan & Wong algorithm to partition the observations.

The Linear Regression node models data using linear regression allowing identification of data trends.

The Logistic Regression node models data using logistic regression allowing identification of data trends.

The Predict Linear Regression node uses a linear regression model to predict the value of a dependent variable based on the specified values of the independent variables.

The Predict Logistic Regression node uses a logistic regression model to predict the probability of a successful outcome of a dependent variable based on the specified values of the independent variables.

The R Library Package Download node downloads the primary 'Comprehensive R Archive Network' (CRAN) R Library packages that are prerequisites for the correct operation of the nodes within the Statistical and Predictive Analytics Node Pack.

known issues/considerations

- We utilize the 32-bit version of TIBCO Enterprise Runtime for R on LAE editions running on Windows platforms.
- When using the Power R based nodes on a 64 bit linux system there is an issue with large data sets causing the R node to fail to complete, or to complete without producing row count information. This issue can be eliminated by appending the following to the end of the servers site.prop file:
  ls.brain.drone.controliomethod=socket
  If an Out of Memory error occurs, add the following string parameter to the nodes parameter list:
  JvmMaxHeapSize
  This parameter controls the maximum amount of memory available to the Power R system, and should be increased as needed. Some examples of possible values of the parameter:
  200M = 200 Megabytes available to the Power R System
  10G = 10 Gigabytes available to the Power R System
- The Logistic Regression node does not support Unicode for categorical data.

LAL V5.1.30 (Internal Beta Release Only)

Overview

This was an internal beta release only

LAL V5.1.29

Overview

New in Version 5.1.29 of LAL:

- Send Email + node additional functionality
- The HDFS Upload node

Details of New Functionality

The Send Email + node now includes the cc recipients functionality typically found in mail clients.

The HDFS Upload node uploads file(s) to a specified HDFS server using the WebHDFS API.

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LAL V5.1.28

Overview

New in Version 5.1.28 of LAL:

- Issues fix in a previously released LAL node

Bugfixes

The TERR Connector node has been renamed to the Lavastorm 'Power R' node.

LAL V5.1.27

Overview

New in Version 5.1.27 of LAL:

- Issues fix in a previously released LAL node
- The Upload for SharePoint 2010 node

Details of New Functionality

The Upload for SharePoint 2010 node Uploads file(s) to a specified SharePoint server using the SharePoint 2010 SOAP API.

Bugfixes

The HTTP node now has “ConnectionTimeout” parameter LAL-710

The Input Static Undefined {{^_Source_Licensed_^}} Parameter message no longer appears when opening the node. LAL-1671/LAL-1404

The Hive Metadata Query node now handles tables with partitioning, which affected tables containing over 200 columns. LAL-1997/LAL-2004

The Hive Join node now process with partitioned tables LAL-2201

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LAL V5.1.26

Overview

New in Version 5.1.26 of LAL:

- Issues fix in a previously released LAL node
- The TERR Connector node
- The Calculate Workdays node

Details of New Functionality

The TERR Connector node (Powered by TIBCO®) runs an R script on the embedded TIBCO Enterprise Runtime for R engine.

The Calculate Workdays node calculates the number of whole workdays between two dates.

Bugfixes

The Send Email+ node no longer responds with “Send hello first” when connecting to a SMTP server using TLS Encryption. LAL-1593

The Send Email+ node error received when HtmlMessageBody is set to Field but no field is specified has been improved. The error received now is “Field parameter not defined (HtmlMessageBody)” LAL-1592

The FTP nodes now support the @ character in both the username and password fields. LAL-1326

The HTTP node tooltip for the MaxDataFieldSize parameter has been changed to “Set the maximum size of response content in bytes. This parameter only applies when DataOutputMode is set to "Field". By default the response size is 52428800 bytes (50 Megabytes).” LAL-1800

The MongoDB node has had various enhancements to the help documentation. LAL-1210

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LAL V5.1.25

Overview

New in Version 5.1.25 of LAL:

- Brings the previous LAL installs (up to LAL 5.0.24) into the LAE 5.1 platform

LAL V5.0.24

Overview

New in Version 5.0.24 of LAL:

- The Download for SharePoint 2010 node
- The Folder List for SharePoint 2010 node

Details of New Functionality

The Folder List for SharePoint 2010 node lists the contents of a SharePoint 2010 folder using the SharePoint 2010 SOAP API.

The Download for SharePoint 2010 node Downloads file(s) from a specified SharePoint server using the SharePoint 2010 SOAP API.

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LAL V5.0.23

Overview

New in Version 5.0.23 of LAL:

- The Output Tableau node enhancement
- The Send E-mail+ node

Details of New Functionality

The Tableau Data Extract API has been updated to version 8.1.2 and as a result Tableau 8.0 or later releases are required to process files produced by this node. The installation now includes the binaries for linux; Tableau does not officially support Red Hat environments at this time so this functionality is released as beta; as a result we cannot guarantee that this will work as designed nor is this supported by any existing maintenance contracts.

The Send E-mail+ node sends a Unicode-encoded e-mail or group of e-mails with file attachments to a designated set of recipients.

Bugfixes

The Http node now includes a new parameter called MaxDataFieldSize which defaults to 50MB. This has been introduced to reduce the occurrence of the "Out of Memory" message that users experience when attempting to process large files. LAL-1230

The Change Metadata node now allows datetime records to be converted to date records. LAL-1225

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LAL V5.0.22

Overview

New in Version 5.0.22 of LAL:

- The Output for TIBCO Spotfire node

Details of New Functionality

The Output for TIBCO Spotfire node Outputs LAE data to the TIBCO Spotfire STDF file format, allowing users to work with the output data within the TIBCO Spotfire application.

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LAL V5.0.21

Overview

Version 5.0.21 of LAL:

- The Hive Join node
- The Hive Metadata Query node
- The Hive Sample node

Prerequisites

- To utilize the Hive nodes you must have a working instance of a Hadoop Hive Cluster.
- The machine hosting the LAE server must be provisioned with an ODBC connection to the target Hadoop Hive cluster. See "Lavastorm ODBC Driver for Hive Configuration Guide.pdf" for setup instructions.
- LAE 5.0.0.1 or newer

Details of New Functionality

The Hive Sample node generates a sample of the data in the specified Hive table.

The Hive Metadata node queries a Hadoop environment to retrieve schema Metadata.

The Hive Join node executes a single specified join within the Hive environment.

Third party known issues/considerations

- The shipped ODBC driver has the DefaultStringColumnLength set to 255; if a data field returned from Hive contains a string longer than the specified maximum, it is silently truncated by the driver. This is a configurable setting should you require larger String column lengths.
- The focus of the release notes is the new nodes; however the ODBC driver can also be used with the pre-existing DB Query and DB Execute nodes.
- If you use different ODBC drivers to those automatically installed then some error messages may differ from those expected.
- The ODBC driver does include the facility to connect to Hiveserver 1 however the Lavastorm functionality only supports Hiveserver2.
- Hive does not support Unicode characters – because of this limitation we have set the default DataOutputType to string for situations where the user would "chain" the different nodes together. i.e. using the Hive Metadata node to get the list of tables and using the results to query a table.
- For other supported data types please see the "Lavastorm ODBC Driver for Hive Configuration Guide.pdf" document
- The Hive Sample node can be configured to request the First N records of a Hive table (partition). Not all vendor's distributions of Hadoop support this feature.

- The Hive Sample node can be configured to request a sample comprising a percentage of the table based on its size. This is subject to the Hive limitation that a minimum of one HDFS block of data will be returned. This may still represent a large number of rows.

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LAL V5.0.20

Overview

Version 5.0.20 of LAL:

- This latest release brings all the remaining LAL nodes (up to and including LAL-2.20.1 release) into the LAE5.0 application.
- The ERP Metadata and ERP Connector nodes are now supported on Linux/Solaris installs. Users are required to download the applicable binaries and java files from the SAP website and manually install them into the LAE install directories.

Known Issues

- There are still occurrences of the XML Data node failing to complete as reported in LAL-439. This issue has been re-opened for further investigation. LAL-439
- In the LAE5.0 release of LAL the http NTLM authentication has regressed. Currently only Basic authentication is supported on LAE5.0. LAL-648
- If the SharePoint nodes are executed against an older (pre 2013) version of Microsoft SharePoint then the user receives an error “parsing servers response”. The error message is to be changed to advise this version of SharePoint is not supported. LAL-683

LAL V3.0.0

Overview

Version 3.0.0 of LAL:

- This was bundled with the Windows installation of LAE5.0 by default and included LAL functionality up to and including LAL v2.17.0

LAL V2.20.1

Overview

New in Version 2.20.1 of LAL:

- Issues fix in a previously released LAL node

Bugfixes

When processing XML files with a certain data structure, the XML Data node was occasionally failing. The failures were due to a regression in LAL 2.20 caused by fix LAL-439. While the fix for LAL-439 resolved most of the cases it was intended to fix, in some cases rather than improving the node's performance significantly, it would cause the node to fail. In addition to fixing the problem where the node was occasionally failing on some data formats, the data produced by the node is also different in some cases. If an XML file contained different repeating sub-elements and the order of those sub-elements within the containing element was not fixed, in some cases, the node would previously output data from sub-elements to records where they did not belong. Note that since both XML Data & JSON Data nodes use the same underlying infrastructure, the fix affects both the nodes even though the issue was only reported against the XML Data node. LAL-626

LAL V2.20.0

Overview

New in Version 2.20.0 of LAL:

- The Folder List for SharePoint node
- The Download for SharePoint node
- The Upload for SharePoint node
- Issues fix in a previously released LAL node

Prerequisites

To utilize the SharePoint nodes you must have a working instance of SharePoint 2013.

Details of New Functionality

The Folder List for SharePoint node lists the contents of a SharePoint document library or folder using the SharePoint API.

The Download for SharePoint node downloads file(s) from a specified SharePoint server using the SharePoint API.

The Upload for SharePoint node uploads file(s) to a specified SharePoint server using the SharePoint API.

Bugfixes

- The JSON and XML Data nodes now cater for duplicate field names by adding "_" to the substitution (or '-' values in the output field name) until there is no collision. LAL-436
- When the ERP Connector node received data from input pins to export to SAP parameters, and no ExecutionIdentifierField was used, the node was ignoring the first field in the input records. This has been fixed. LAL-437
- The HTTP node now has tooltips for all parameter options. LAL-438
- The HTTP node supports the use of system proxy and as a result has an additional parameter called IgnoreSystemProxy to override your system proxy and use the one defined in the node. LAL-478
- When running the XML or JSON nodes taking multiple data files as an input, the nodes would process the data slower on each subsequent file for certain formats. This appeared in some cases for XML and JSON data which contained repeating fields which required a new record per field iteration, followed by a field which was to be output on all records. This issue has been fixed. LAL-439

Known Issues

- The Download for SharePoint node does not handle Unicode characters in the filename, the brd results show the expected filename however the physical file includes "?". LAL-552

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LAL V2.19.0

Overview

New in Version 2.19.0 of LAL:

- The Lavastorm Query for Salesforce node (Compatible with 4.6.1 or newer)
- The Lavastorm Transact for Salesforce node (Compatible with 4.6.1 or newer)
- The Net Present Value node

Details of New Functionality

The Lavastorm Query for Salesforce node queries SALESFORCE.COM objects via SOQL over the SALESFORCE.COM REST API.

The Lavastorm Transact for Salesforce node creates, reads, updates, and deletes records in SALESFORCE.COM objects via the SALESFORCE.COM REST API.

The Net Present Value node calculates the Net Present Value (NPV) of an investment based on the discount rate and a set of future payments and income in the input data set.

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LAL V2.18.0 (Compatible with 4.6.1 or newer)

Overview

New in Version 2.18.0 of LAL:

- Issues fix in a previously released LAL node
- The Query for MongoDB, Update for MongoDB and Get MongoDB Data (compatible with 4.6.1 or newer) nodes.

Details of New Functionality

The Get MongoDB Data node converts Json data output from MongoDB queries to brd tabular format; very similar to the JSON data node.

The Query for MongoDB node performs queries on a MongoDB database and outputs the results as JSON documents.

The Update for MongoDB performs updates and deletions to documents within a MongoDB database.

Bugfixes

- This version of LAL has fixed an issue where the XML Data node would previously error when attempting to read certain XML files. Issue 5417
- The ERP Connector and Extract ERP Metadata nodes now both allow for Logon Load Balancing using a Group/Server connection. As such, the connection parameters to the node have been modified to add the additional parameters:

  ConnectionType
  Specifies "Group/Server" or "Custom Application Server". This is a new required parameter so existing nodes which were working using the old mechanism will need to be updated to set this to "Custom Application Server".
  Group/Server - Required to specify the group server to use when logon load balancing is in place and "Group/Server" is selected as the ConnectionType.

  R3Name - System ID of the SAP system
  MessageServerHost - Required for Group/Server connections
  MessageServerPort - Optional for Group/Server connections. Issue 5418

- The ERP Connector node has been enhanced to allow for executing a BAPI function multiple times based on its input data. Issue 5419
- The ERP Connector node now has a new parameter "AdditionalParameterBehavior". This parameter defines the action to take when the node has inputs for scalar, structure or table import parameters which contains fields that do not exist on the corresponding function in the BAPI to execute. Issue 5420

- The ERP nodes have a new parameter called "LargeDecimalAsDouble". This parameter allows the user to specify that even though the data may not fit into a double field, they want it to be output in such a field. Issue 5421

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LAL V2.17.0 (Compatible with 4.6.1 or newer)

Overview

New in Version 2.17.0 of LAL:

- The JSON Data node (Compatible with 4.6.1 or newer)

Details of New Functionality

The JSON Data node reads and converts JSON data from an input data source into tabular brd data.

LAL V2.16.0 (Compatible with 4.6.1 or newer)

Overview

New in Version 2.16.0 of LAL:

- The XML Data node (Compatible with 4.6.1 or newer)

Details of New Functionality

The XML Data node reads and converts XML data from an input data source into tabular brd data.

LAL V2.15.0 and V2.15.1 (Internal Beta Release Only)

Overview

This was an internal beta release only

LAL V2.14.0

Overview

New in Version 2.14.0 of LAL:

- The FTP nodes (Compatible with 4.6.1 or newer)
- Bugfix to erp

Details of New Functionality

The FTP Get node Downloads files from a server using the FTP, FTPS, or SFTP protocol.

The FTP Put node Uploads files to a server using the FTP, FTPS, or SFTP protocol.

The ERP nodes now allow date data from an input pin to be correctly transformed to be sent to the SAP system. Issue 5281

LAL V2.13.1

Overview

New in Version 2.13.1 of LAL:

- Issues fix in a previously released LAL node

Bugfixes

- This version of LAL has fixed a packaging issue introduced in LAL V2.13; some nodes that inadvertently required LAE 4.6.1 now correctly work with LAE 4.6.0 as intended. Issue 5260

LAL V2.13.0

Overview

New in Version 2.13.0 of LAL:

- The ERP Metadata and ERP Connector nodes
- Updates to the Output Tableau and Output QlikView nodes

Details of New Functionality

The ERP Connector provides integration with the SAP platform using the BAPI collection of interfaces, allowing users to acquire data from and publish data to the system.

The Extract ERP Metadata extracts metadata for available BAPIs from a SAP system.

The Output Tableau and Output QlikView are now available to all Lavastorm users. In the past, they were restricted to paying customers. Issue 5190

LAL V2.12.1

Overview

New in Version 2.12.1 of LAL:

- Issues fix in a previously released LAL node.

Bugfixes

- The HTTP node help has been amended to expand the cookie explanation. Issue 4335
- The HTTP node now supports writing the results to disk. Issue 4706
- The HTTP node now supports HTTPS requests. Issue 4717
- The HTTP node now supports proxy authentication. Issue 5120

LAL V2.12.0

Overview

New in Version 2.12.0 of LAL:

- The Input Raw and Input Static nodes
- Updates to the Output Raw and Output Static nodes
- Bugfix to Change Metadata

Details of New Functionality

The Input Raw node inputs binary data (e.g. images) or textual data that contain commas, double quotes, non-printable ascii characters like tabs or carriage returns (e.g. XML data). It can read multiple files and insert their (optionally encoded) data into output fields (one per field).

The Input Static node is similar, only the data is provided manually by the user, in similar fashion to the Static Data node, only without any interpretation.

The Output Static and Output Raw nodes have been enhanced to take specific filenames, and no longer require the output to be auto generated files.

The Change Metadata node can properly add duplicate fields with different types and names correctly. Issue 5133

LAL V2.11.0

Overview

New in Version 2.11.0 of LAL:

- The Output QlikView node

Details of New Functionality

The Output QlikView node takes LAE data and writes it in the QlikView QVX format such that QlikView can read it directly in. This node allows users to create graphs that publish results in a repeatable automated fashion that can be used by QlikView users for dashboards and other visual analysis.

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LAL V2.10.0

Overview

New in Version 2.10.0 of LAL:

- The Output Tableau node.
- Various issues fixed with HTTP and Convert Tabular XML nodes

Details of New Functionality

The Output Tableau node allows a user to store LAE data in Tableau format to a file. The user can then use Tableau application to view data in the stored file. The node supports LAE data types String, Long, Double, Integer, Boolean, Unicode, Date, Time, and Datetime.

Notes on this node:

1. As of May 2013, the Tableau API (and therefore this node) only runs on Windows. In March 2014 the Tableau Data Extract API was enhanced to support Windows and Linux platforms, Lavastorm Analytics intend to develop in a future release an updated version of the Output Tableau node that will also provide Linux support
2. Tableau 8.0 or later releases are required to process files produced by this node.

Issues

- The HTTP node has improved help documentation. Issues 4336, 4788, 4921
- The HTTP node properly hides internal Java parameters. Issue 5024
- The HTTP node has an improved error message when there is nothing to output. Issue 5005
- The Convert Tabular XML node now has configurable error logging via the normal LogLevel mechanism. Issue 4965
- The Convert Tabular XML node has improved help. Issue 4961

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LAL V2.9.0

Overview

New in Version 2.9.0 of LAL:

- The Histogram+ node.
- Various Issues Fixed

Details of New Functionality

The Histogram+ node combines the Histogram and InFlow Bar nodes to create a histogram of the input data and a bar chart that displays the histogram data. For the histogram output, there will be one row for each unique occurrence of the values in the fields listed in InputFields, and a count of the number of input records with those values.

Issues

- The Convert Tabular XML Node now properly handles cases where the input file has zero records. The metadata is correctly transferred through per the PassThroughFields setting, and no processing is done. Issue 4937
- The Convert Tabular XML node now implements the InputPrefix feature, to optionally rename PassThroughFields, to avoid name collision. Issue 5010
- The Change Metadata node help was updated to clarify usage. Issue 5032

LAL V2.8.0

Overview

New in Version 2.8.0 of LAL:

- The Deep X-Ref node.

Details of New Functionality

The Deep X-Ref extends the basic X-Ref node functionality. While the X-Ref node compares records by the set of key fields, the Deep X-Ref will also inspect, for those records with matching key fields, the differences in all other fields between those two records. It will identify all those records that match in their entirety, and for those that do not, it will provide a detailed report of each field's values that do not match. It also can handle some type conversion and partial overlap for those non-key fields, via configuration options. This node can be very useful when inspecting two sources of data that are expected to be identical (at least in all overlapping fields).

LAL V2.7.0

Overview

New in Version 2.7.0 of LAL:

- The Change Metadata node.
- Bugfix to the Pivot Table node.

Details of New Functionality

The Change Metadata node allows the user to change a field's name and data type within the source data. It also allows the fields to be reordered, and fields to be duplicated as well.

Bugfixes

- The Pivot Table node now works with more data types. Issue 4945

LAL V2.6.1

Overview

New in Version 2.6.1 of LAL:

- Issues fix in a previously released LAL node.

Bugfixes

- The Pivot Table allows aggregation type of Mean on GroupForRow field of any name. Issue 4946
- The Pivot Table node now allows Unicode files for the GroupForRow parameter. Issue 4945
- The Pivot Table node now allows spaces in field names. Issue 4944

LAL V2.6.0

Overview

New in Version 2.6.0 of LAL:

- The Pivot Table node.
- Improvements and bugfixes to various nodes.

Details of New Functionality

The Pivot Table node creates a cross tabulation of data, summaries of two criteria, similar to the pivot table functionality in MS Excel, as an example. It allows for data to be counts, or optionally aggregated over a field for calculating the sum, mean, min or max or count of nulls in the field.

Bugfixes

- A new fuzzy algorithm was added for the type Date. The Date algorithm take two input keys, both of type Date, and a FuzzyThreshold in days. The node records a match if the absolute difference in days between two date keys is less than the FuzzyThreshold. Issue 3939.
- Improvements to the Fuzzy Matching node help. Issues 4025, 4072
- The URL Query Builder now handles Unicode properly. Issue 4124.
- Improvements to the URL Query Builder help. Issue 4193.
- The Band by Strata node no longer throws an exception when the InputExpr is a double, and the Increment is a double. In addition, the node now throws an exception if the InputExpr is a long, and the Increment is a double. Issue 4923.

LAL V2.5.1

Overview

New in Version 2.5.1 of LAL:

- Issues fix in a previously released LAL node.

Bugfixes

- The Convert Tabular XML node experienced a regression where zero-record inputs caused the node to fail. The node now behaves as it used to. Issue 4851
- The Convert Tabular XML node was refactored into a Composite, and in doing so, lost its node licensure. License properly set to Standard. Issue 4884

LAL V2.5.0

Overview

New in Version 2.5.0 of LAL:

- The Quick Stats node
- Updates to Convert Tabular XML

Summary of Function

The Quick Stats node provides the functionality to run a number of statistical functions over numeric data in the input records. These functions are sum, min, max, average, count, range and null count. The fields on which to perform the stats on can also be in the form of a regular expression. By default the stats are run over the full set of records, but a group by expression can optionally be given to provide more granular results.

The Convert Tabular XML node has been enhanced with new functionality. The node now can be configured to support namespaces in the XML, and can handle optional tags in the data. When the data structure for each record varies, such that fields may be present in some records but not others, the user now has a choice of Exact, Union and Intersection for dealing with those variances.

LAL V2.4.0

Overview

New in Version 2.4.0 of LAL:

- The Encrypt and Decrypt nodes.

Summary of Function

The Encrypt Fields node takes an input BRD file and encrypts fields of the user's choosing using the triple DES algorithm and SHA-1 password hashing technique. The user chooses the password, and can distribute it to the colleagues cleared to see the encrypted information. The node will pass through the fields the user does not want encrypted. The BRD files that this node partially encrypts are meant to be decrypted by the Decrypt Fields node.

The Decrypt Fields node takes an input BRD file with fields encrypted by the Encrypt Fields node. The user has to provide the Decrypt Fields node with the same password and SaltPassword choice that he uses to produce the above input BRD file, and the node will decrypt all encrypted fields.

The encrypted data can be used and passed through other standard nodes, and even used in joins and aggregates, if proper conventions are followed as described in the node help.

LAL V2.3.0

Overview

New in Version 2.3.0 of LAL:

- The Get Metadata and Metadata X-Ref nodes.

Summary of Function

The Get Metadata node produces an output describing the metadata on the input given, by producing a record for each field in the input, describing the metadata for that field.

The Metadata X-Ref node takes 2 inputs and performs a cross-reference against the metadata of the inputs, to find the common fields and types of the two inputs. It produces three outputs that classify the input metadata into appropriate categories of matched and unmatched, and for the matched, describes any differences in the match.

LAL V2.2.0

Overview

New in Version 2.2.0 of LAL:

- The Output Raw and Output Static nodes. These nodes enable a user to easily write data directly to files.

Summary of Function

The Output Raw node takes data from a provided field, and writes it to a data file. If the data is encoded using our internal encoding, such as produced by the HTTP node, it will decode the data and write the raw file directly to the disk. Otherwise, the text found in the field is written directly to file without interpretation. The Output Static node takes any text that is entered into the text box and writes those contents directly to a file, also without interpretation.

LAL V2.1.0

Overview

New in Version 2.1.0 of LAL:

- The Remove Duplicates node. This node enables a user to easily remove duplicate records.

Summary of Function

The Remove Duplicates node can take multiple inputs (of exactly the same type) and can be configured to easily remove duplicate records from across all of its inputs. By default it will look for complete duplicate records, inspecting all fields to determine if a record is a duplicate. It can be configured to inspect a subset of fields or expressions as well.

LAL V2.0.2

Overview

New in Version 2.0.2 of LAL:

- The HTTP node. This node enables a user to make an HTTP request from the LAE.
- One bug fix in a previously released LAL node.

Summary of Function

The HTTP node can make either a single HTTP request without an input pin or can make multiple input requests by accepting an input pin. If an input pin is present, the node will make one HTTP request for each input row, and will output the results of each request as a single record on the output pin. All parts of the HTTP request must come either from an input record or from a literal value provided on the node interface. The HTTP response can be output either in whole or in part, as specified by the node parameters.

This node can use any HTTP request method (GET, POST, PUT, DELETE, PATCH, HEAD, TRACE, CONNECT or OPTIONS). The HTTP request method influences how the URL must be encoded before being input into the node. For instance, the GET call requires that the URL have the request's query string appended to the end of the path. For a POST call, appending the query string is optional.

Bugfixes

- The Tabular XML node no longer fails if it is presented with a zero-record input. Issue 4257.

LAL V2.0.1

Overview

New in Version 2.0.1 of LAL:

- The Convert Tabular XML and Tabular XML File nodes. These two nodes extract data from an XML document, based on parameters that describe the structure of the document via XPath expressions. A user can provide XML data in two ways, and the two nodes handle these two data access methods:
  - Tabular XML File node - reads XML document from a file on disk
  - Convert Tabular XML node - receives XML data that is stored in a string field on the input pin

  These two nodes differ *only* in how they get the XML data and are identical in all other aspects.
- Change in the URL Query Builder node's *PassThrough* parameter.

Summary of Function

Tabular XML Nodes

The two Tabular XML nodes extract data from "tabular" XML documents. An XML file has a "tabular" structure when a single element contains the field names and values of a single output record. The node uses XPath to identify record boundaries and to extract field values and names from the XML file. Specifically, the user must supply the following three XPath expressions:

- A *RecordXPath* that defines the boundaries of records in the XML file. The node will produce an output record when it reaches the end tag of one of these elements.
- A *FieldNameXPath* that identifies the field names of the output record under the *RecordXPath*.
- A *FieldValueXPath* that identifies the values of the output record under the *RecordXPath*.

Two more XPath expression parameters are available to handle specific conditions regarding field names and field values:

- *FieldNameFunction* to handle possible field name conflicts.
- *FieldValueFunction* to handle empty tags (i.e. <tag/>).

URL Query Builder Node

In LAL version 2.0.0, the URL Query Builder node had a *PassThrough* parameter. In LAL version 2.0.1, this parameter has been renamed *PassThroughFields*, and its values are now "All", "None", "Used" and "Unused".

If you have used the V2.0.0 URL Query Builder node in your graphs, you should:

1. Delete the value in the old *PassThrough* parameter from any existing instances of the V2.0.0 node.

2. Fill in the new *PassThroughFields* parameter with a value equivalent to the value in the old *PassThrough* parameter.

LAL V2.0.0

Overview

New in Version 2.0.0 of LAL:

- The URL Query Builder Node. This node offers functionality that you can use as a component of a Web services node—that is, a node that accesses an external Web service. This node will appear in the "Interfaces and Adapters" category in the node palette in BRE.

Summary of Function

The URL Query Builder node takes in a list of URL's and a list of parameters and outputs a list of URL-encoded query strings to be used for an HTTP request. The URL Query Builder node takes in one input with anywhere from one to infinitely many rows and outputs one URL-query string pair for each input record.

If the user wishes to implement a GET HTTP request, this node can output a single field with the URL and the query string appended together in the accepted GET method format, or the node can output the URL and Query Strings separately if the user wishes to implement a POST HTTP request.

LAL V1.0.2

Version 1.0.2 of Lavastorm Analytics Library contains an updated version of the Fuzzy Join and Fuzzy X-Ref nodes. The updated nodes have improved capacity and performance, compared to the nodes in Version 1.0.1. There are some limitations and guidelines for data volumes and performance with these nodes:

1. These two nodes are memory intensive, and even in Version 1.0.2, there are limits to the size of the input data they can handle. In particular, both nodes have to load and keep in memory some data from the right-hand pin:
   - If only FuzzyExprs are defined, the nodes load all the data for FuzzyExprs from all the rows in the right input pin into memory.
   - If both FuzzyExprs and ExactExprs are defined, or if only ExactExprs are defined, the nodes load all the data for ExactExprs from all the rows in the right input pin into memory.

   There is a 600MB limit on the total size of FuzzyExprs or ExactExprs data that the nodes can load into memory.
2. Since either FuzzyExpr or ExactExpr of the right input will be loaded into memory, for best performance, the right input pin should contain the smaller data set.
3. Numeric operations are more efficient than string operations, so numeric values for FuzzyExprs and ExactExprs will provide better performance than string values.
4. For the Fuzzy X-Ref node, when disk space or processing time is a concern, it is recommended that Fuzzy Join is used instead because Fuzzy Join does not produce left and right orphans.

LAL V1.0.0

Overview

This is the first release of Lavastorm Analytic Libraries, a new product distribution effort which is intended to deliver more rapid additions to the Lavastorm Analytic Engine node library than have previously been available. This first release is focused on enhanced analytic functionality, and provides the following new nodes:

Correlation:

- *Fuzzy Join* - implementation of several matching algorithms which deal with inexact matches among key expressions
- *Fuzzy X-Ref* – cross-reference version of Fuzzy Join, yielding both matched and unmatched records from each input set

Profiling and Patterns:

- *Band by Strata* – organizes data into sets defined by a user-specified interval
- *Band by Deviation* – organizes data into sets defined by the number of standard deviations between each value and the mean of the input set
- *Percent Rank* – calculates the percentage rank of each value within a number set
- *Interval Inspection* – identifies gaps in sequenced data sets
- *Threshold Test* – identifies records within an input set which, when summed with preceding records, exceed a user-specified threshold value
- *Dimensional Analysis* – aggregates data along each intersection of values within a user-specified column list, and applies a scoring function to highlight inflection points among these aggregates which may indicate avenues for further analysis

Detailed descriptions of the nodes are available in the product help facilities**.**

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