



# Product Development

New Features and Improvements

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# 1. Version 29

## 1.1 General

- Significant performance optimization in Excel and CSV export.
- Enhancement of drag & drop functionality in Designer: Subtables are now directly available.
- Crosstabs can now be linked.
- Tables in the Designer can now have their own frame and background.
- When creating a grouping, an attempt is now made to automatically determine a suitable sort order and optionally apply this directly to the table.
- The print selection dialog now allows much easier selection of a different printer, the number of mouse clicks required has been halved.
- The "Ellipse" and "Rectangle" objects now also provide support for design schemes.
- New option *DOCX.LineSpacingPercentage* for Word export. This can be used to optimize line spacing within Word, e.g. to prevent truncation of descenders.
- New option value "0" for *PDF.ZUGFeRDVersion* for PDF export. List & Label will then try to automatically read the correct version and conformance level from the supplied XML.
- New option *LL\_OPTION\_HIDE\_EXTENDED\_PRINTMODES (399)* to suppress multiple page/poster and scaled printing in the print options dialog.
- 64-bit C++ builder applications are now supported in the FireDAC VCL component.
- Preview controls can now also directly display PDF files when the *FileName* property is set to the path of a PDF file.
- The *TextWidth()* designer function can now directly use the font of the cells in which it is used. Specifying the font properties is now only optional.
- New option *LL\_OPTION\_SVG\_TO\_DIB\_MAX\_SIZE* to control the maximum area (x\*y) a bitmap may get.
- New option *LL\_OPTION\_SVG\_TO\_DIB\_RESOLUTION* to control the conversion of a drawing's rectangle in the project to bitmap pixel dimensions.
- New option *LL\_OPTIONSTR\_DEFAULTCHARTSCHEME* to set the default design scheme for new charts independent of the set project design scheme.
- New design schemes "combit Pastel" and "combit Pastel 2".
- The "Link" property is now supported in XHTML/CSS export.
- New PDF export option *PDF.UseSimpleFrames*, which is based on the existing option *LL\_OPTION\_USESIMPLEWINDOWSPENSTYLE\_FRAMEDRAWING* - but can now be set in isolation and exclusively for PDF export to let Windows draw the standard simple frame lines for tables and objects such as dotted, dashed, dash-dotted and dash-

dot-dotted more effectively (different rendering possible). This can lead to higher overall performance and smaller export files when creating reports.

## 1.2 .NET

- Support for .NET 8 via custom assemblies.
- MySqlConnectionDataProvider/MariaDBConnectionDataProvider: New property *PrefixTableNameWithSchema* to prefix the schema name to the table name to be declared.
- InMemoryDataProviderWrapper: a new provider that can serve as a wrapper for the JSON and XML provider, for example, to support features such as sorts and native filters in it.
- SQLite data now supports views.
- New cloud storage provider for WebDAV.
- The *NextCombinationPrintStepEvent* now provides the ability to reset the page counter and optionally additionally the total page count for the next project when combination printing.

## 1.3 Web Report Designer/Viewer

- Added support for line and area charts.
- Multiple pages are now displayed when reducing the size of pages in the preview.
- Charts now support the definition of signal ranges for X and Z axis.
- Multiple projects can now be downloaded as a ZIP file.
- Charts can now be created as a sub-element of a table.
- Export now supports report parameters and options.
- The contents of the repository can now be displayed and managed.
- Offline use in e.g. intranet applications is now possible.

## 1.4 Report Server

- OAuth 2.0 support for REST data sources and emails has been added.
- The Web Report Designer is now optionally usable.
- The "WebDAV" action for scheduled reports has been added.
- The in-memory option has been added for JSON and XML data sources.
- A search filter is now available when creating new data sources.

## 2. Version 28

### 2.1 General

- Revised UI for report parameter selection for parameters with multiple selection.
- Mail dispatch via Microsoft Graph / Office 365.
- Multiselection for report container content.
- New designer function PageBreak\$() for inserting breaks at arbitrary positions.
- Various new export options, e.g. option to fix headers in XHTML/CSS export, direct export as formula, password protection of spreadsheets and code-side setting of header and footer in Excel export, meta information such as author, title, etc. in Word export and further security options in PDF export.
- Significantly improved performance for multi-level data-bound report parameters.
- New barcode type EPC (GiroCode).
- Greatly enhanced Web Report Designer, e.g. new objects for data graphic and gauges, wizards for new creation of label, index card and list projects, new table editor.
- Automatic support of hierarchies (folder structure) in the repository.
- Improved passing of images from byte arrays.
- New LL\_OPTIONSTR\_REPORTPARAMDLGTITLE option to set the title in the report parameter dialog displayed during export.
- New LL\_OPTION\_PROHIBIT\_OLE\_OBJECTS\_IN\_RTF option to prevent OLE objects in "Formatted Text" objects.
- The preview now automatically jumps back to the beginning as soon as the search reaches the end of the document.
- New export option *Export.Mail.SMTP.OAuth2.BearerToken*.
- New option LL\_OPTION\_USESIMPLEWINDOWSPENSTYLE\_FRAMEDRAWING to have simple default border lines for tables and objects such as dotted, dashed, dashed-dotted, and dashed-dotted-dotted more effectively output directly by Windows or the PDF viewer. This can lead to higher overall performance and also smaller PDF export files.

### 2.2 .NET

- Support of .NET 7, for which the assemblies from the .NET 6 directory can be used.
- New data providers for MariaDB and Azure Cosmos DB.
- Special NuGet packages for List & Label Enterprise Edition that include all modules and do not require List & Label installation for use on e.g. build servers like Azure DevOps.

## 3. Version 27

The overview of new features and changes in Report Server can be found in the Report Server manual.

### 3.1 General

- Support for Windows 11, Visual Studio 2022, .NET 6.
- New browser-based designer ("Web Report Designer"). The .NET 4.0 C# MVC web reporting sample is adapted so that both designers (client- and browser-based) can be used in parallel.
- New Web Report Viewer, this offers the same functionality as the previous HTML5 viewer, but is based on new technology and - like the Designer - is available as a WebComponent.
- Support for systems without printer driver. To use this, set LL\_OPTION\_PRINTERLESS to "1" before opening a job with job handle -1. The components offer a "Printerless" property.
- New LL\_OPTION\_VIRTUALDEVICE\_SCALINGOPTIONS option to optimize text placement in environments without printer driver (see LL\_OPTION\_PRINTERLESS).
- This also provides support for deployment to Windows Docker containers. These can also be hosted on Azure App Service accounts.
- Charts can be created in the designer using drag and drop.
- Excel export supports tags "{ItemName}" (name of current Report Container item and "{PageNumber}" within the worksheet name. This makes them easier to customize.
- Excel export supports hyperlinks set via the Link property in texts and table fields.
- New barcode type "Pharmacode".
- New image type "SVGZ".
- Designer function Drawing() now supports direct SVG input (e.g. Drawing('<svg height="100" width="100"><circle cx="50" cy="50" r="40" stroke="black" stroke-width="3" fill="red" /></svg>') ).
- The .NET component can automatically decode Base64-encoded images.
- The HTML object now also supports the https protocol.
- The extended properties of 2D barcodes (e.g. QRCode, PDF417 etc.) are now also available in the object model.
- Consideration of rotation information from EXIF metadata for JPEGs.
- Various enhancements to the FireDAC VCL component (e.g. ExportOptions class)
- Excel export now allows disabling grid lines (XLS.ShowGridLines).
- New option LL\_OPTION\_SUPPRESS\_TOOLTIPHINTS for suppressing the new info tooltips in the Designer.

- Crosstab label cells can now contain an image.
- Lines are now exported as inline SVG files when exporting to XHTML. Line styles are also partly supported, diagonal lines no longer are raster images.

## **3.2 .NET**

- Added new property "Printerless" that allows to use LL in printer-less environments. Default is "true" for web and container apps.

## **3.3 Report Server**

- New server technology (.NET 5)
- Optics can be customized (branding)
- New action 'SFTP' for scheduled reports
- Possibility of a formula in the parameter wizard
- Report templates have a language
- New settings options for Excel export
- New languages for the interface
- Export parameters can be preset
- New functions of the REST API
  - Query of the current product version
  - Import of report templates and settings
  - Export of report templates and settings

## 4. Version 26

The overview of new features and changes in Report Server can be found in the Report Server manual.

### 4.1 General

- Different projects can be included in a print job by passing the project names semicolon-separated (requires data provider).
- Support for automated n-pass (requires data provider).
- Revised Drag & Drop UI for columns in tables.
- Support for sub reports (requires report container).
- New PDF export library. Improved output especially for complex graphics, smaller result files, CMYK image support, improved handling of Unicode fonts, selection of PDF version.
- Copies and page changes can be defined in label projects depending on formulas.
- The Viewer for preview files can now also display simple PDF files. No support for advanced PDF features such as form controls, signature fields or annotations.
- Greatly improved performance for C# scripts.
- Multi-page and poster printing.
- Print options dialog revised.
- Office 2019 ribbon UI for designers.

### 4.2 .NET

- In addition to .NET Core 3.1 now also support for .NET 5.
- More NuGet packages for data providers.
- Ad-hoc Designer with new features: Filter data source in charts, horizontal bar charts, support for images.
- SQL data sources can now be sorted by 1:1 fields.
- Parameterized data sources can work with NULL values as parameter defaults.

### 4.3 Report Server

- Completely revised user interface technology, now uses a single page application approach with React for faster work and less data consumption.
- New server technology (.NET Core 3.1).
- Visual refresh of the user interface.



- Data sources no longer need to be activated. Some drivers have been integrated directly or are now included, e.g. Oracle and MySQL.
- The connection test for data sources is now also possible directly in the Details dialog.
- The cleanup is now directly available in the administration as a separate button.

## 5. Version 25

### 5.1 General

- Support for HEIF and WebP image formats has been added.
- The user and sum variable dialogs are now searchable.
- The line widths in the Gantt chart are now adjustable.
- Texts can now be selected in the preview and copied to the clipboard.
- Charts now allow multiline legends.
- Sub-elements in the report container can now also be defined by filter conditions and do not necessarily require a relation.
- The axis for charts with linear, numeric x-axis can now be displayed logarithmically.
- The report container now supports horizontal and vertical continuous printing for XHTML and XLS exports.
- Multi-column tables can now also be output horizontally in the report container.
- Automatic adjustment of column widths to the content of the table.
- Groups of row definitions can be held together.
- With the new designer function "ChangeType()" values can be declared as constant in the filter.
- The sorting dialog now allows easy switching between ascending and descending.
- Support of signatures when sending mail.
- The axis labeling in pie charts now allows for breaks.
- The coordinate labels in bar charts can now be left-aligned.
- The minimum width of the task row can now be set in the Gantt chart.
- Added support for JSON as export format.
- Rscript output can now be imported 1:1 into the XHTML export.
- The Project Assistant is now also available as a 64-bit variant.
- Support for ZUGFeRD 2.0 has been added.
- Significant improvement of the preview performance for very large preview files.
- Added the LL\_OPTION\_COMPAT\_PROHIBITFILTERRELATIONS option to disable the selection of the link type of table subelements has been added.
- The LL\_OPTION\_VARLISTDISPLAY to determine the order of the variables/fields and folders in the associated tool window has been added.
- Added the Export.Mail.SignatureName option to attach an Outlook signature to a mail.
- Excel and XHTML/CSS Export: Added the Export.InfinitePage option for the "endless" page size.

- The pszRelationID parameter of the LIPrintDbGetCurrentTableRelation function can now also be empty if a sub-table has been inserted via a filter in the Designer.
- PDF Export: Added the PDF.ZUGFeRDVersion option for determining the ZUG-FeRDVersion.
- Added the Callback notification LL\_NTFY\_EXPRERROR\_EX.

## 5.2 .NET

- .NET Core 3.1 is now supported.
- NuGet packages for .NET are now available for almost all assemblies.
- Added support for GraphQL REST API data sources.
- Added the Headers property to RestDataProvider.
- Added the ISupportsParameters interface to RestDataProvider.
- Added a new event "ProcessText" to perform translations or hyphenations before printing or exporting. Can also be used for RTF content.

## 5.3 Report Server

- SQL-based data sources now allow the use of routines/stored procedures. See the Report Server User Manual for more information.
- For scheduled reports, the new action "Webhook Call" has been added.
- In the Ad-hoc Designer, the table footer can now only be displayed on the last page.
- The export formats "List & Label Preview Format" and "JSON" have been added.
- Composite primary keys to define relations for data sources.
- Report parameters can now be defined via a wizard.
- Report Server settings can now be imported and exported.
- Connection strings can now be managed centrally.
- The "Copy File" action of the scheduled reports can now create a single ZIP file.
- The data source "GraphQL" has been added.
- Data sources Excel, XML and CSV now support data source parameters.
- The name of the main table for JSON-based data sources can now be changed.
- The OData data source now supports definable HTTP headers.
- The Query Wizard now also supports PostgreSQL.
- Reports based on a data source can now be displayed in a list.
- Scheduled reports via REST API now also support report parameters.

## 6. Version 24

### 6.1 General

- The Designer now has the ability to search for content and search & replace content.
- You can use `LL_OPTIONSTR_EMBEDDED_EXPORTS` to pass a list of formats (e.g. "DOCX;XLS;PDF") that you want to make available in the preview. These are then also available in the viewer.
- The property "Expandable Region " is also available for groupings.
- Crosstabs can also be created by drag & drop.
- Crosstabs can be automatically converted to charts using the context menu. The selected data dimensions are copied.
- The preview has a new refresh behavior, with drilldown and expandable regions the control is no longer emptied, but the content is switched directly.
- The preview control has new features to customize the look & feel.
- Clearly noticeable performance increase in list printing.
- New Designer function `CountryFlag()` for displaying country flags.
- There is a new type "Rscript" in the chart object. In addition, visualizations created via Rscript can be used in List & Label.
- Support for various PDF/A formats in PDF export.
- The option `LL_OPTION_IDLEITERATIONCHECK_MAX_ITERATIONS` for setting the maximum number of attempts to print an object has been added.

### 6.2 .NET

- A Windows Installer Setup (.msi) is now available for the Web Designer for installation via command line, e.g. for distribution via group policy.
- The Web Designer now also supports Designer objects and functions via an optional configuration.
- Support for ASP.NET MVC Core. The `combit.ListLabel24.Web.dll` is now available as .NET Standard 2.0 assembly.
- The REST data provider can now pass additional request headers (e.g. for authentication).
- Support for parameterized data sources with automatic parameter creation.
- Updated `CloudStorageProviders`.
- HTML5 viewer displays charts as SVGs and supports drilldown via report parameters for charts.

- Via `LIOptionString.EmbeddedExportFormats` export formats can be embedded in preview printing in data-bound mode (DOCX, XLS,...). These are then also available in the viewer.
- Improved `CsvDataProvider` (encoding, separator recognition).

## 6.3 Report Server

- Ad-hoc Designer: Optional automatic preview.
- Ad-hoc Designer: Optional limitation of the data volume for preview.
- Ad-hoc Designer: Date format for print date now adjustable.
- Better display of charts in the preview.
- Support for new Designer features (see above).
- Report templates: Improved selection of data sources.
- Data sources: Support for data source parameters.
- Data sources: Organization in folders as with report templates.
- Data sources: REST data source now supports definable HTTP headers (e.g. for authentication).
- Data sources: REST data source now supports setting a timeout.
- Scheduled reports: Improved selection of report templates.
- Scheduled reports: New actions for Cloud Storage upload for Google Drive, Microsoft OneDrive and Dropbox.
- Report Server Designer: A Windows Installer Setup (.msi) is now available for installation via command line, e.g. for distribution via group policy.
- Native apps for managing and exporting reports are now available for Android and iOS.

## 7. Version 23

### 7.1 General

- The designer shows virtual formula variables underneath the fields and variables (e.g. "first letter" for strings).
- Pie and donut charts support setting pie coverage. This enables a number of new chart layouts, e.g. half pie charts.
- The chart object supports signal ranges in order to highlight certain areas.
- Support for SVG as image format.
- SVG export was completely overhauled.
- Crosstabs can be edited directly in the workspace, new context ribbon.
- The Designer's error list window contents can be copied to the clipboard.
- Copied user variables now support custom names.
- Allow date values for minimum / maximum aggregate functions.
- The time part of report parameters of the date type can now be selected in a date/time picker.
- Reduced memory footprint for crosstabs.
- Added new export option 'PDF.FileAttachments' for PDF export to be able to add additional files into the resulting PDF container.
- Improved line break behavior for RTF contents in XHTML support.
- New option `LL_OPTION_PREVIEW_SCALES_RELATIVE_TO_PHYSICAL_SIZE` allows to display a page in its true physical size when setting the zoom to 100% in the preview.
- Variables with invalid characters are now treated as such. The previous behavior of List & Label 22 can be restored by setting the option `LL_OPTION_COMPAT_ALLOW_INVALID_CHARS_IN_SINGLEFIELDFORMULA` to 1. Note that this will result in a loss of performance.

### 7.2 .NET

- The ListLabel component has a new property `DataBindingMode`, defaulting to "DelayLoad". This mode will only load necessary meta data.
- The web designer is also using this interface, leading to a huge performance gain.
- You may now configure relations between tables from different providers as long as they support the `IAdvancedFiltering` interface (see `CrossDataProviderRelation` class).
- Queries for report parameters now use `DISTINCT` if possible, leading to a huge performance gain.

- New Salesforce data provider.
- Ad-hoc Designer available as new control, new sample.
- Report Server is part of the Enterprise Edition, new API to upload data sources and project files, new samples.
- The HTML5 viewer supports changing the current page by scrolling with the mouse wheel. Use the ExtendedScrolling option to disable this feature.
- The DbCommandSetDataProvider has a new event Execute DbCommand that allows to change the created commands before they are sent to the database.
- Web Designer: Added support for all cookie-based authentication types, including OWIN / ASP.NET Identity. The WebDesignerConfig.AuthenticationMode can be set to two new modes: AspNetIdentityOrOWIN and CustomCookie. Web Applications based on OWIN/ASP.NET Identity will work with WebDesignerAuthenticationModes.Automatic now, a custom authentication can be configured using the new WebDesignerConfig.AuthenticationCustomCookieName property.
- Web Designer: Removed dependencies on the jQuery and jQuery Mobile frameworks. The new Web Designer control does not require any additional files from the server and offers more possibilities for customization via CSS.
- Web Designer: New properties to set the user interface language for a client: WebDesignerOptions.Language (for MVC) and DesignerControl.Language (for WebForms).

## 7.3 Report Server

- Ad-hoc Designer: New chart types "Radar/Web", "Treemap" and "Funnel"
- Ad-hoc Designer: Possibility to group after a certain number of characters
- Ad-hoc Designer: Possibility to cancel the preview for extensive data sources
- Ad-hoc Designer: Simplified table selection
- Report Elements: Shapefiles are now supported
- Report Elements: SVG graphics are now supported
- Data Sources: Salesforce is now supported
- Data Sources: Relations between diverse data sources
- Data Sources: SQLite data sources now support the query assistant
- Data Sources: The Advantage Database Server is now supported via ODBC driver
- Scheduled Reports: Support of placeholder/variables
- Scheduled Reports: Filename of email attachments can now be defined
- Scheduled Reports: Filename when copying to network drives can now be defined
- Scheduled Reports: User defined directory and filename for FTP upload can now be defined

- Report Server Designer: Application is now DPI-Aware
- System requirements: The lowest supported operating system is now Windows Server 2008 R2 (64-Bit)



## 8. Version 22

### 8.1 General

- Sort orders can now be set by formula. Hint: If you are using the DOM property 'SortOrderID', the value now must get a string mask.
- Properties can be added to favorites
- Preview animations for objects
- New design schemes "combit Blue" and "combit Green"
- In the "Select Data Source" dialog a search field for datasources is now available
- New 2D-Barcode MicroPDF417
- New 2D-Barcode Codablock-F
- The PDF export does not change the font-scaling if the used printer-device uses a distorted resolution.
- New functions GetIniString(...) and GetRegistryString(...)
- New function GS1Text\$()
- New function IBAN\$
- New optional parameter for the function CheckMod10() that allows a different/correct weighting for the check digit
- New properties "Keep Group Together" and "Keep Data Together" for tables
- New property "Reset Page Counter" for group header and report container sub-element
- Resizing the columns when changing the column count is now optional (AutoMessageBox)
- Crosstabs now support multiple result cells, cross-row and column references, automatic fill-up, Top-N and expandable regions
- New chart types Radar and Treemap
- Coordinate lines for X-Axis can be defined for Line, Area and Bubble charts.
- New option "Limit To" (Top-N report) for Bar charts
- New sorting options for the chart types Circle/Donut, Bar/Ribbon, Line/Symbol, Areas and Bubbles/Dots
- In a symbol chart the used symbols can now be selected individually
- In the chart types Line/Symbol, Areas and Bubbles/Dots different line styles and width can now be defined.
- New API LIGetLastErrorText which returns the List & Label error text and the detailed windows error.

## 8.2 .NET

- The new "Repository Mode" allows to completely avoid local file paths in the projects through the stream-based IRepository interface, making it much easier to use List & Label in distributed (web) applications.
- The new logging interface allows to use logging frameworks like NLog or log4net as well as custom logging mechanisms to capture the debug output of List & Label.
- The Web Designer now supports Forms- and Windows Authentication via the new property WebDesignerConfig.AuthenticationMode.
- Franking with Deutsche Post Internetmarke
- New WPF Wrapper for PreviewControl
- The Web Designer and the Html5Viewer have been refactored to be easier to use and to use less resources on the server.
- The new property DesignerControl.CDNTType allows to specify the source for external libraries of the Web Designer (jQuery etc.).

## 9. Version 21

### 9.1 General

- Conditional formatting in the Designer
- Browser-independent Web Designer with real data preview (.NET only)
- Drag & Drop overhauled, create tables and subtables directly via D&D, drop variables on existing text paragraphs to append content
- Enhanced color picker
- Overriding specific default font properties
- New toolwindow: Formula Errors
- AutoRecover for the Designer
- Enhanced User- and Sumvariable dialog with multiselect and copy/paste
- Optionally hide objects from include files
- Support for nested includes
- Streamlined Ruler Guides
- The structure of the report container now hides relation names from the UI where they aren't needed.
- The report container itself now has a frame property
- Support for Form Control objects in tables
- Adapted look and feel for toolbars and property grid
- New "Colors" tab in the formula wizard to ease the creation of formulas that need color parameters
- Improved object tree scrolling when using Drag & Drop
- Using the standard Windows common dialog for search in the preview
- Optional automatic position adaption of objects when flipping orientation
- Enhanced PDF export with Type3 support, direct ZUGFeRD generation, enhanced PNG rendering and support for combo form controls
- Support for nested tables (.NET only)
- Native aggregate functions (.NET only, selected data providers)
- New data providers: Cassandra, SharePoint, Oracle via new managed Oracle provider (.NET only)
- Enhanced data provider: ObjectDataProvider in .NET 4.0 build now uses LINQ to support sorting, filtering and native aggregates (.NET only)
- Enhanced data provider: ODataDataProvider offers support for OData V4 (.NET only)

- Enhanced data provider: DbCommandSetDataProvider in .NET 4.0 build has a new query builder/analyzer that can cope with much more complex queries (.NET only)
- True .NET 4.0 builds for the assemblies support new features (see below). Usage of .NET 4.0 is highly recommended where possible.

## **9.2 .NET**

- DbConnectionDataProvider has new property "SupportsAdvancedFiltering" that must be overridden.
- Added support for the new 3.\* versions of Npgsql.

## 10. Version 20

### 10.1 General

- Parameterized subreports (in fields, table lines, crosstab cells, pie/funnel chart, bar chart)
- Optional native database filtering support (see General/API)
- Multiple Report Containers (.NET only)
- Real-data preview: export to Word, XHTML and Excel possible if the host supports the Drilldown callback.
- Office 2013 style for the Ribbon UI, general look & feel facelift.
- Format painter added for (most) objects and table cells. In ribbon and in 'old-style' menu.
- OLE-Container can now use a formula for its contents.
- Checkbox object
- PPTX-Export
- "Objects" tool window now contains the information of the "Report Structure" tool window.
- The position of pasted objects is now where the cursor is, not the original position of the copied object.
- The standalone preview window now also has a zoom slider control.
- Static tables are now supported as sub-tables as well.
- Added new buttons to comment and uncomment selection in the function wizard.
- Moving objects out of the workspace now scrolls the workspace to the movement direction.
- Dimensions shown when an object is resized, background is faded away.
- ALT-key pressed when resizing: the width is rounded to the coordinate (mm/in)
- Added new context ribbon button for table column resize mode
- Editor font is now selectable and is serialized to the registry. "Show Text in Layout Preview" is removed and always true now.
- When pasting a table line into a line def group that just contains one empty (default) line definition, this empty definition is deleted on paste.
- LocNumber\$ has an optional third parameter for the digits.
- Expandable regions can be collectively opened/closed in the preview
- Formula Wizard tweaks: more reliable autocomplete, Ctrl+Space triggers autocomplete, better handling for autocomplete listbox

- New error code `LL_ERR_NO_SUCH_INFORMATION` if `LIGetUsedIdentifiers[Ex]` is used for a file without such information
- D&D now also adds footer fields with automatic sums. Use `CTRL` as modifier to only add a header.
- Progress meters are unified across exporting and printing.
- Added new button in Designer ribbon that enables to resize both vertically and horizontally in one move.
- DWG (and so the drawings inside LL) do now support temporary download of images
- XHTML supports rotated texts (standalone & in table cells). Vastly improved look and feel of export result.
- `SetVar` has a new optional third parameter to decide if the set value should also be output
- New callback "`LL_QUERY_EXPR2HOSTEXPRESSION`"
- New API `LIPrintDbGetCurrentTableFilter()`
- New flag `LL_ADDTABLEOPT_SUPPORTSADVANCEDFILTERING` for `LIDbAddTable()`

## 10.2 .NET

- Support for native database filtering for many data providers.
- New databinding mode to support multiple report containers. Set the property "`NewDataBindingMode`" to "`false`" to revert to the old behavior.
- New class `AccessDataProvider`
- New class `Google BigQuery DataProvider`
- New class `InMemoryDataProvider`
- `XlsDataProvider` supports Excel 2013 files
- `DbConnectionDataProvider`: 1:1 relations are now using `JOIN` statements for SQL providers -> much better performance
- Improved support for In-Memory databases (SQLite), filtering, sorting and count are properly supported.
- `DbConnectionDataProvider` has a new abstract member `SupportsAdvancedFiltering`. If your provider uses standard SQL (Microsoft SQL), you can return "`true`". Otherwise returning "`false`" is more secure to avoid SQL syntax errors when filtering data. See the documentation in the .NET component's online help.

## 11. Version 19

### 11.1 General

- Support for Windows 8.1, Visual Studio 2013
- Optimizations for high DPI displays
- New chart types (Shapefile, Funnel, Donut)
- Extended chart features (mix bar and lines, aggregate with previous values, best fit etc.)
- Report Parameters
- Collapsible regions in the preview
- Interactive sorting in the preview
- Collection variables to summarize data
- Sorting support for label projects (using LIDbAddTableSortOrder)
- Various new designer features
- SVG export
- Viewer application with Ribbon
- QR code has configurable version
- Label projects now also support the usage of LIDbAddTable, LIDbAddTableSortOrder and LIPrintDbGetCurrentTableSortOrder for exactly one table, allowing for sort orders in label projects.

### 11.2 .NET

- OData DataProvider
- REST DataProvider
- SharePoint 2013 support
- FlattenStructure property for ObjectDataProvider presents a much easier view of the object model if structs or classes are used as members.
- FlattenNodesWithNoAttributes property for XmlDataProvider displays Nodes with no attributes as flat instead of using the value field name.
- LoadDeferredContent is now also called for class properties in the ObjectDataProvider. This allows to call LoadProperty() on the object right in the moment it is needed.

## 12. Version 18

### 12.1 General

- Starting with Windows Vista, the Designer now uses the Windows Ribbon framework by default. The user may switch off the ribbon in the project's options dialog. `LL_OPTION_RIBBON_DEFAULT_ENABLEDSTATE` can be used to modify this behavior. The current setting is stored in the registry hive `HKCU\Software\combit\cmbtll\<AppName>\Designer.Ribbon.Active`. Set this text value to 'T' or 'F' to determine your application's look and feel.
- The preview now has a multi page view mode. Use zooming or panning to navigate between the pages.
- The designer preview doesn't only show the currently selected object in the report container but rather the whole container tree.
- Comprehensive performance optimizations most notable when printing lists.
- Comprehensive multi threading optimizations.
- Adaptions for Windows 8, support for gestures.
- Repeated images in preview files are only embedded once (much smaller files).
- Support for back side printing (e.g. GTC).
- New export formats: Office Open XML, jQuery mobile.
- Improved MHTML export (uses XHTML).
- `LL_OPTION_ALLOW_COMBINED_COLLECTING_OF_DATA_FOR_COLLECTIONCONTROLS` allows multiple objects within the report container to consume the same data.
- Caching of printer device contexts (s. `LL_OPTION_PRINTERDCCACHE_TIMEOUT_SECONDS`)
- New barcode format PZN-8.
- New APIs: `LLJobStateSave/LLJobStateRestore`
- OCX/VCL: The `SaveAsFilePath` property now returns the user-defined file name when using the `SaveAs` method.
- .NET: The `SaveAsFileName` property now returns the user-defined file name when using the `SaveAs` method.



## 13. Version 17

### 13.1 General

- If multiple consecutive layout regions use the same printer, they are printed in one single print job if possible.
- Improved automatic scale selection for gauges.
- New chart types: area, bubble.
- New designer objects: PDF, Data Graphic, Gantt.
- Support for index and table of contents.
- Support for design schemes in many objects.
- Progress dialogs use the default OS style on Vista and newer.
- The layer dialog supports copy/paste.
- The report container has a new context menu.
- The group sum dialog is resizable.
- Objects from templates have a new context menu action allowing to edit the template quickly.
- New viewer plugins for Windows versions of Firefox, Chrome, Opera and Safari.
- The RTF export embeds pictures as JPEGs resulting in much smaller files.
- Report container items can now support stacked sortings (*see LIDbAddTableEx()*).
- User and sum variables can be edited directly via the field-/variable list's context menu.
- The XHTML export result has a new toolbar for paging and searching the result file.
- The XLS export now optionally generates XLSX files and is supported on x64.
- New Designer functions: Precalc, ChangeLightness, Roman\$.

## 14. Version 16

### 14.1 General

- Mini toolbars for more intuitive work
- Improved input, selection and alignment
- Workflow for more productive localization
- .NET DataSource component
- Improved documentation and .NET tutorial
- Pivot function for crosstab
- Stepless zoom in Designer
- Search in preview
- Topical: Gauges/Measuring instruments
- XHTML/CSS export
- New HTML object
- .NET Client Profile support
- Intelligent Mail Barcode
- Extension of XMLDataProvider with new event PreParseXPathNavigator to modify the analysis behavior.
- ObjectDataProvider now supports IDictionary<, > members and creates a column for each key/value pair.
- OleDbDataProvider now supports composite key fields.
- DrillDown now works with composite key fields.
- DbCommandSetDataProvider now calls the new event "ExecuteDbCommand": Ability to optimize the precalculated SQL query.
- Support for static tables through DOM (.AddNewStaticTable()) and class SubItemStaticTable).
- Extension of the ObjectDataProvider with the event 'OnHandleEnumerableProperty' to stop a recursion at a certain point.
- Added a new overload to the AddFromObject() method of variables or fields, allowing to pass only 'browseable' properties.
- Support for transparent ICO/PNG (also for printers if they support per-pixel alpha channel in bitmaps).
- LL\_OPTION\_SCALED\_PERCENTAGEFORMATTER (198): If set to TRUE, the value is multiplied by 100.

## 15. Version 15

### 15.1 General

- Drilldown reporting enables user-friendly preparation of hierarchical data
- .NET data binding provides faster and easier direct access to data sources
- PDF export: PDF/A - Audit-proof archiving - CID-encoded fonts (Unicode)
- 64-bit version for full memory usage for Professional and Enterprise Editions
- Compatible with Windows 7, Visual Studio 2010 + RAD Studio 2010
- New barcodes, brand-new GS1
- Original/copy control for copies
- Arithmetic precision of any accuracy
- Flexible break control via soft hyphae allows to use e.g. custom hyphenation
- Unicode and Java support for the Standard Edition
- The .NET component tries to convert all byte[] fields to images using GDI+
- New support for EAN Datamatrix barcode, use "~1" to encode FNC1
- New designer property to keep group footer and group header together respectively
- New flag for LIProjectOpen() so that no printer DC is created.
- Strg+ and Strg- zoom in and out in the Designer
- New property „Export as Picture“ in the picture object
- Some additions to the DOM properties

## 16. Version 14

### 16.1 General

- New filtering options for variables/fields and functions in the designer
- Revised function wizard
- New formatting "time span"
- New formatting "exponential"
- Extended charting: rows
- Optional support for real data preview in the designer
- Support for different layout regions. A flexible way to choose different target printers and/or page layouts
- .NET: code generation from DOM objects
- DOM general: support for chart rows, layout regions and other new designer features
- Preview files can contain table of contents
- Preview files can directly embed JPEG files without prior conversion to BMP
- New view mode for property window (hide constant functions)
- Ruler guides can be moved with the CTRL key pressed in order to move all docked objects as well
- Designer extensions using LIDesignerAddAction (new for Standard Edition)
- Comments in formulas (new for Standard Edition)

## 17. Version 13

### 17.1 General

- Completely revised chart object: new optics, several axes, logarithmic scales, bar rotation by 90°
- DOM functions for dynamic project creation and modification
- Tables can be printed with multiple columns
- Preview can be displayed during printing
- Reduced preview files
- New presentation mode for preview
- Unicode support for export modules
- New XPS export format
- Objects can optionally be exported as an image
- Export results can be automatically compressed into ZIP archive
- New API for localized request of error text
- .NET/VCL: Convenient handling of DOM functions via extensive class model
- .NET: Databinding support for LINQ objects

### 17.2 User Interface

- Completely revised table dialog; "infinite" number of line definitions, all at a glance in new tree structure
- Properties of several table lines can be modified simultaneously
- Report containers can have several columns
- Support for free contents in tables
- Completely revised chart dialog, formulas for chart properties
- Revised function wizard
- Revised print options dialog
- New barcode types: QR code and ISBN
- Codeset for Code128 can be controlled
- Extended wrap options for crosstabs
- New options for text objects: always wrap text, fit text optimally
- New options for text fields in tables: always use fixed height
- New Designer functions Exists(), Evaluate(), GetValue()

## 18. Version 12

### 18.1 General

- Crosstabs
- Easier coding for charts (also in table columns) using the *L/Db...()*-APIs
- Support for digital signatures
- .NET/VCL/OCX: convenient support for dictionaries
- .NET: data binding support for generic list classes
- HTML export: frames using CSS
- XLS export: optional new worksheet for each page
- New ActiveX controls for function and object Designer extensions
- Java: JNI-DLL

### 18.2 User Interface

- New tool window "Report structure" supporting tables, charts and crosstabs
- New property "Datasource" for charts (also in table columns) and crosstabs
- Completely reworked icons
- Anti-aliasing and increased color depth for preview sketch files
- Support for fixed barcode bar width
- Support for variable barcode bar ratio
- New barcode SSCC/NVE
- New tool window for project properties
- New property "Minimum Page Count" for project
- Support for gradient fills
- Appearance condition for text paragraphs and table columns
- Improved page wrap for HTML object

## 19. Version 11

### 19.1 General

- API support for relational data structures and hierarchical reports
- Designer: Aggregate functions
- NULL-value support
- .NET: completely rewritten data binding
- .NET: extensive new online help
- VCL: completely rewritten data binding
- Support for page x/y without 2-pass technique
- Improved Excel export
- Improved RTF export
- Conditional pagewrap before group header / after group footer lines
- Rotatable table columns
- New print option dialog options
- New barcode: Aztec

### 19.2 User Interface

- New tool window "Table structure"
- Visibility of the table column separators in the rulers for easier adjustment
- Advanced line definition dialog: it is possible to hide single line definitions
- New toolbar controls in the preview
- Redesigned tree view icons
- Property dialogs for frames and formattings

## 20. Version 10

### 20.1 General

- New Designer object: form control (edit control, combobox, checkbox or button)
- Totally renewed PDF export (font embedding, faster, less limitations)
- Preview control: direct export to PDF and other formats
- Preview control: send form data via HTTP or email in different formats
- Preview control: thumbnail bar switchable
- Emails can be sent via SMTP or MAPI, parameters can be set by code
- New preview controls (OCX/VCL/.NET)
- Standalone RTF inplace object, insertable into own projects
- New export type: TTY; sends text directly to dot-matrix printers
- Extended text export with layout
- Optional frame for text object
- Frames in tables can be assigned per cell
- New barcode formats (Data Matrix, PZN, Code 39 CRC, PIX, Royal Mail)
- Callback for print job supervision
- New Designer functions "RegExMatch\$()", "Previous()"
- Project includes

### 20.2 User Interface

- Optional Office 2003 Look & Feel
- More sizeable dialogs
- Line objects can be inserted horizontally and vertically by using the Shift key
- RTF editor supports zoom (requires at least RTF Version 3)



## 21. Version 9

### 21.1 General

- Optional encryption of project files
- Changes in licensing (license structure itself, and setting of the license by an API call)
- New object type: OLE Container
- Supports page ranges and copies when printing from the preview
- Thumbnail view in the preview
- New export format: Excel
- New export format: Text
- New export format: TIFF/Multi-TIFF
- Group header lines can be forced to print directly below the header line
- Group footer lines can force a page wrap below them
- Nearly all object properties allow expressions
- New internal LL variables, for example to allow object placement depending on the paper size or printable area
- New tool windows for object list and object properties
- Standalone RTF Editor (new group of API calls)
- Rotation of RTF objects (Windows NT/2000/XP)
- RTF objects support text overflow in other RTF objects
- Support of MS FAX as export medium (Windows 2000/XP)
- Reduced size of the preview files up to 60%
- Enhanced .NET component, including user-definable functions and objects
- New event for print and design methods of the OCX and VCL. Print options can be set here, for example to cause an export without user interaction.

### 21.2 User Interface

- Office XP Look & Feel
- Dockable tool windows and toolbars, Tabstrips for multiple docked windows
- Help lines in the Designer with configurable snap width
- Table object: line definitions can now easily be exchanged and compressed
- Property window

## 22. Version 8

### 22.1 General

- New object types: HTML, Chart
- New export formats: PDF, XML, MHTML
- New variable types LL\_HTML , LL\_NUMERIC\_LOCALIZED and LL\_DATE\_LOCALIZED
- The if() and cond() functions have been optimized
- New internal Designer variable: "LL.OutputDevice". Contains the medium the project is being printed to.
- New Designer function *Hyperlink\$()*
- *Empty()* function optionally applies implicit *ATrim\$()*
- The names of table line definitions can be freely changed
- Each group header may trigger a page break
- The text object can have a background color
- Optional variation of character spacing in block-justified text
- Optimized preview file format, decreased file size
- Automatic backup copy when saving files in the Designer
- New compatibility option enabling Win NT-generated files containing barcodes to be read on Win9x/ME machines.
- Better resolution for inch system.
- Changed loading behavior of List & Label extension modules, see LL\_OPTIONSTR\_-LLXPATHLIST
- Support for new Windows 2000 file dialog styles
- Project sketch files can be colored, default is monochrome. See LL\_OPTION\_-SKETCH\_COLORDEPTH
- Possible table line definitions increased to 100 per type
- The project file description in the file dialogs can be changed (LL\_OPTIONSTR\_-xxx\_PRJDESCR)
- Optional: Japanese postal barcode (CM32L8BJ.LLX)
- Optional: Euro currency translation functions (CM32L8EU.LLX)
- Optional: new bitmap effect functions (Mask, Rotation, Black/White, Emboss) (CM32L8BM.LLX)
- The CM32CR8.dll is no longer required for print-only projects.
- The new coordinate system LL\_INCH\_DIV\_1000 might cause your user objects to be able to deal with it. *LL\_OPTION\_UNITS* returns the current resolution,

*LL\_OPTION\_METRICS* only returns whether the system is metric or not. Therefore, please check your use of these options. The maximum paper size in the inch/1000 resolution is restricted to approx. 83 cm on Win9x/ME systems.

## **22.2 User Interface**

- The Designer interface has been redesigned to provide increased user friendliness. In addition to the preview window, new Designer modes enable an editable preview.
- The zoom modes of the workspace and preview window can be changed independently of each other.
- The formula wizard has been equipped with many new features, such as auto completion, tool tips, parameter hint and syntax highlighting (not for MBCS/Unicode Version)

## 23. Version 7

### 23.1 General

- List & Label 7.0 is sold in two flavors: the standard SBCS version for Western code pages, which can optionally be enhanced to handle Far Eastern languages, and a Unicode version (please refer to the chapter on international use). All of these are capable of implementing an automatic word break according to the font's script language.
- Export to RTF, HTML, DIB und JPG
- More integrated barcodes:
  - 4 new MSI barcodes
  - MSI barcodes now also handle the full 0-9, A-F character range
- Optional module with the 2D barcodes PDF417 and Maxicode
- Enhanced VCL component for Delphi:
  - integrated data binding with Master-Detail-Mode
  - Property and component editor (Designers can be called from within the IDE)
- Enhanced OCX control:
  - Intellisense (if supported by the IDE)
  - List & Label constants as ENUMs
- Additional VB control
  - with source code
  - integrated data binding
- Text objects can be bottom-aligned
- Pictures can be embedded in the project file
- The RTF object supports embedded objects and pictures
- Extended to support 50 table header, data, footer and group header and footer lines
- Virtually unlimited number of sum and user variables which can have names defined in the Designer
- New or modified formula functions: *LocCurr\$()*, *LocCurrL\$()*, *LocNumber\$()*, *LocDate\$()*, *LocTime\$()*, *Locale\$()*. New parameter for *Date\$()* and *FStr\$()*.
- Print options dialog
  - visually enhanced
  - enhanced selection of output medium, default output medium can be preselected in the Designer
- File format of the label templates has changed
- A project file that is loaded in the Designer is locked against write access.

- While printing, the paper size is set to the project's page size if the printer is not set correctly (if the printer in the P-file is different or there is no P-file).

## **23.2 User Interface**

- Color marks to better distinguish the different types of table lines
- Layer, variables and preview window are hidden when the Designer is not active
- Enhanced selection of frame to size or move a frame
- Enhanced formula wizard with three function groupings (function type, type of return value and type of first parameter) to help with finding a function.
- Text objects:
  - Font setting is faster
  - Bottom aligned option
  - Line distance in a paragraph can be selected
- New LLVIEW7: independent of the viewer OCX, easier registration

## 24. Version 6

### 24.1 General

- The OCX control has been extended:
  - encapsulates nearly all functions of the List & Label DLL
  - contains a routine which implements the print loop for most kinds of print jobs
  - the function naming convention is now compatible with List & Label and the VCL control
- The VCL control has been extended:
  - encapsulates all functions of the List & Label DLL
  - contains a routine which implements the print loop for most kinds of print jobs
  - the function naming convention is now compatible with List & Label and the OCX control
- Automatic page wrap for tables and text objects, even for objects linked to tables
- The RTF object can wrap to multiple pages (32bit)
- Hierarchical variable and field lists ("Address.Name", "Address.Street", ...)
- RTF texts also in tables
- New variable type *LL\_RTF* for direct selection in the RTF object's property dialog
- Date variables and fields can contain the time (as fraction of the day in the fractional part)
- Date variables and fields can be passed without offset calculation from Delphi, Basic and C
- Extended object link options (negative size fit, link to end) simplify design and programmatic approach for multi-page projects
- New output option: Print to file
- New or modified expression functions: *Continued()*, *Now()*, *AddDays()*, *AddHours()*, *AddMinutes()*, *AddSeconds()*, *Hour()*, *Minute()*, *Second()*, *RGB()*, *Min()*, *Max()*, extended parameters for *Date\$()*, extended parameters for *FStr\$()*, extended parameters for *WoY()*
- Print dialog
  - improved design
  - optional: user can choose the type of output media (Printer/File/Preview)
- Barcodes can be printed on pages larger than A4/letter
- Optional history of changes in project file: user and computer name (32 bit), date and time of creation and last change
- Optional history of changes in preview file: user, computer name, date and time of creation (32 bit)

- Barcode and drawing object contents can be calculated by an expression

## 24.2 User Interface

- Optional: new "Explorer" style in FileOpen/SaveAs dialogs
- Several improved dialogs
- Help button has new design
- New controls for color and pattern selection
- New dialog style for Office 98 "sliding" tool tips
- Extended expression wizard:
  - multi-line
  - 32 bit: Drag&Drop from variable list and variable window
  - automatic insertion with an operator if needed
  - functions for managing bracket levels to support development of complex formulas
- Hierarchical variable list in separate window for Drag&Drop (32 bit)
  - onto workspace: creation of new objects
  - onto objects: insertion of new paragraph, table field, change of contents (depends on object type)
  - on text object property dialog: insertion of a paragraph
  - on table object dialog: insertion of a field
  - on expression wizard: insertion of the variable in the formula
- The right mouse button menu has been expanded:
  - editing of a single table field
  - editing of a single text paragraph
  - editing of a formula in a barcode or drawing object
- Modification of the cell width of single or multiple table fields using the mouse
- Insertion of fields into a table by Drag&Drop
- Barcodes (EAN8, EAN13xxx, DPLident, DPLeit, GermanParcel, Postnet, FIM) can restrict the resizing to their respective allowed sizes.
- New functions in the preview:
  - Save a single page (32 bit, storage only)
  - Save the whole preview (32 bit, storage only)
  - Print a single page to a selectable printer
  - Print the whole preview to a selectable printer
- Enhanced LLVIEW7 (the independent viewer for preview files)
  - Thumbnail-style page preview
  - Dual language with auto-detection of the language, can also be selected manually

## 25. Version 5

### 25.1 General

- Module names changed from LX to L5
- Preview print to one file which can be sent. This is now default!
- The preview management file has been renamed (from ".000" to ".LL")
- STGAPI: functions for managing this preview file
- SendTo mail function in preview
- Optional compression of the preview file
- Small changes in the format of the metafiles (no longer any SetViewportOrg()).
- 32-bit-Preview-ActiveX/OCX/COM/OLE-Control.
- Independent, small Preview-Viewer, uses the OCX mentioned above.
- LL\_CMND\_HOSTPRINTER
- New barcodes MSI-Plessey, CODE93, CODE11.
- New graphics formats JPEG, PCD.
- New options for LISetOption() and LIGetOption().
- Combination of preview jobs into one file possible
- Initial preview zoom factor and window size
- New expression mode is default

### 25.2 User Interface

- RTF control (32 bit only)
- New dialog style for Office 97 look-alike buttons
- Group footers
- Optional page break at first group header line
- Table object extended to 5 header, 20 footer, group and 30 data lines
- Wizard mode for new label and file card projects
- Import of projects possible