Infor LN Report Designer Development Guide

Release 10.7.x

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About this guide

This guide contains a detailed description of the features and functionality of the Infor LN **Report Designer**. The guide also contains a brief overview of the structure of 4GL reports.

Intended audience

This guide is intended for professionals who work on LN implementations, and have specific knowledge of the business functionality and requirements for reporting. In-depth technical knowledge of 4GL reports is not required.

Related documents

You can find the documents in the product documentation section of the Infor Support Portal, as described in "Contacting Infor".

- *Infor LN Studio Application Development Guide*
- *Infor ES Programmer's Guide (Infor Support Portal KB 22924522)*
- *Infor LN Extensions Development Guide*

Contacting Infor

If you have questions about Infor products, go to Infor Concierge at https://concierge.infor.com/ and create a support incident.

The latest documentation is available from docs.infor.com or from the Infor Support Portal. To access documentation on the Infor Support Portal, select **Search > Browse Documentation**. We recommend that you check this portal periodically for updated documentation.

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Chapter 1: Introduction

The main purpose of the **Report Designer** is to enable changes to the design of a 4GL application report, without modifying the standard report or using an external reporting solution. The changes are stored as personalizations. Therefore, the effort that is required to implement changes after the standard is updated is reduced.

You can also generate new reports that are based on a selection of fields from the application data model. These reports are generated in the extensibility package. You can personalize these reports in the **Report Designer**, or modify them in LN Studio.

Supported LN versions

The **Report Designer** is available with LN 10.5 and later. Enterprise Server 10.6 is required. The **Report Designer** is only supported in LN UI.

Note: On LN 10.5 you must re-compile the reports once with Enterprise Server 10.6 to enable them for the **Report Designer**.

Devices

The report personalizations are only fully supported for devices that print from LN to PDF:

- Devices of the Display type, if you use LN UI
- Devices with the **Intermediate File in XML Format** option enabled, that use the "XML -PDF" argument
- Devices of the Document Output Management type, for report rules without report server

  To print a report to this device type, the report must have a corresponding report rule defined in the **Report Rules (ttrpi2520m000)** session. The report personalization is only used if no report server is specified in the report rule.

  For details about Document Output Management (DOM), see the *Infor LN Document Output Management User Guide*.

For options to copy the file from the LN server or to send it to a printer, see the *Infor LN Transfer Service Administration Guide*.

Other devices do read the personalization, but may not give the expected result.

Reports

Reports are used in sessions to show data on the screen, or print data on a printer or another output device. A session can have multiple reports. On a report, data such as fields and labels are available. The position of the fields is defined in report layouts.

Report personalization

The combination of changes to the report made in the **Report Designer** is stored as a personalization. You can find these changes in the **Report Personalizations (ttadv9507m000)** session. As with other personalizations, you can copy them to the role and company levels. When you print a report, the most specific personalization is used.

The personalization does not replace the standard report. Only the changed or added layouts are stored in the personalization. The standard report is still executed, and its logic. Layouts that are present in the personalization are not executed by the standard.

Report input fields

The report input fields are the fields defined by the application as available for use on the report layouts, along with domain information. Domain information includes information about the data type and default formatting of the fields. The fields can be table fields, or calculated fields, which are determined by the print logic in the application.

You can define a sort mode on input fields.

This table shows the sort modes you can select:

Sort mode	Description
Ascending	The report sorts the printed records in ascending order.
Descending	The report sorts the printed records in descending order.
Presorted	The application is responsible for the order of the records that are printed. The report does not sort the records.

If no sort order is defined for an input field, the original order of the records is preserved. In that case, you cannot link Before Field or After Field layouts to the input field.

Additional input fields are customer defined fields, and fields that are added by the report extension.

Report layouts

A report layout contains the labels, fields, and lines in the desired position. Several types of layout are available. These layouts, along with the output condition, control when their contents are printed. If multiple layouts of the same type are printed, then their sequence number determines their output order. Thus, if both Header 10 and Header 20 are to be printed, Header 10 is displayed first on the page.

This table shows the available layout types:

Layout type	Description
Before report	This layout is printed once at the start of the report. You can use this layout to, for example, print a title page or information about the report.
Header	This layout is printed at the start of each page.
Before Field	This layout is linked to a sorted input field. It is printed whenever the value of that field changes, and at the top of each page. You can use this layout to group data and print details of that group. For example, a report prints Employees by Department. This report could use a Before Field Department group to print the department details once, and then print a list of employees. A change in a sorted input field with a lower sequence number implies a change in the sorted input fields with higher sequence numbers. Therefore, the layouts with higher sequence numbers are also printed. For example, the sorted input fields are Sales Order and Sales Order Line, in that sequence. A Before Field Sales Order Line layout is printed when the sales order changes, even if the line number did not change.
Detail	This layout is printed every time the application sends data to the report.
After Field	Similar to Before Field layouts, this layout is linked to a sorted input field. It is printed when the value of that field changes, but after the entire group. You can use this layout to show group totals.
Footer	This layout is printed at the bottom of each page.
After Report	This layout is printed once at the end of the report. If this layout does not fill the complete page, footer layouts are also printed on this page.

When a report is printed in a right-to-left language, the report layouts are automatically mirrored horizontally. Therefore, you can use a single report definition for both left-to-right and right-to-left printouts. When the **Report Designer** receives such a right-to-left print, it mirrors the original layouts. The user interface of the **Report Designer** itself is mirrored independently of the report. If the browser is set to a right-to-left language, the user interface of the **Report Designer** is mirrored.

Report script

Some behavior of a report cannot be modeled with the available properties on layouts or fields. Instead, a report can have a script attached, which contains sections that are called when specific layouts are printed. In the **Report Designer**, you cannot modify or add a script. If a personalization is present, then the standard report script is still executed when appropriate. The standard report script can, for example, perform these actions:

- Calculate values
- Skip to a specific line on the page for a layout
- Repeat a layout multiple times

Chapter 2: Personalizing reports

You can use the **Report Designer** to make changes to the design of a 4GL application report, without modifying the standard report or using an external reporting solution. The changes are stored as personalizations.

Opening a report to personalize

Because of the close relationship between input data and the result, the **Report Designer** uses a printed report as input. The **Report Designer** starts only if the report is printed to PDF through a device of type Display. In the **WebUI Print Settings (ttaad3108m000)** session, you can configure the preview device to print to PDF.

1. Start a session and click the gears icon to open the settings menu.
2. On the settings menu, select **Personalize Reports**. This message is displayed: `Print a report to start personalizing`

   Note: The **Personalize Report** command is available in all sessions.
3. In the message window, click **OK**.
4. Print the report which you want to personalize as a PDF, through a device of type Display. The **Report Designer** starts. You can print the first report through the session that you started in step 1 or through another print session. In both situations, the **Report Designer** starts.

Some processes print multiple reports at once. All these reports are displayed in the same **Report Designer** instance. Any reports that are printed while the **Report Designer** is open are also displayed in that instance. After the **Report Designer** is closed, you must run the **Personalize Reports** command again before you can start a new **Report Designer** instance.

The central area of the **Report Designer** initially shows the design of the layouts that have been printed. At this point the fields reflect the actual data on the report. Multiple side panels are available.

See Report Designer side panels on page 10.

Report Designer side panels

This table shows the side panels that are available in the **Report Designer**:

Side panel	Description
Layouts	Contains a dropdown with the list of reports that were printed, and lists all layouts in the selected report. Below the dropdown, the current level of the printed personalization is displayed. The personalization can be on user, role, or company level. The personalization is always saved on user level.
Input Fields	Lists all report input fields. Table fields are grouped together. Non-table fields are grouped as Calculated fields.
Special Items	Lists items that can be added to the report layouts, but which are not input fields. For example, lines, images, and barcodes.
Properties	A context-sensitive area that shows various properties that are applicable to the currently selected item.
Problems	Lists warnings and errors. You must resolve the errors before you can use the report personalization for printing. This panel is collapsed by default. To view the list, click the up arrow button in the lower-right corner of the page, or drag the panel up.

Showing or hiding layouts

Initially the **Report Designer** shows only those layouts that were printed on the report for the selected data.

Use the check boxes in the **Layouts** panel for these purposes:

- View and modify layouts that were not printed.
- Show or hide specific layouts, or all layouts of a specific type.

Note: These check boxes do not affect the report personalization. It is only a utility within the **Report Designer**, but does not affect which layouts are printed on the report. To influence the report, you can use the **Print Condition** property on the layout.

On the **Actions** menu, these commands to toggle layout visibility in the editor are available:

- **Show All**

  Makes all layouts of the report visible, regardless of whether they were printed.

- **Show only personalized layouts**

  Hides all unmodified layouts. Shows all layouts that were modified and all new layouts.

Note: Personalized layouts are displayed with their names in italics, in both the **Layouts** panel and in the editor. This does not apply to new layouts.

Selecting a report, a layout, or fields

Initially the report is selected, and the **Properties** panel shows the report properties. To select the report when something else is selected, click on the editor area, outside of a layout.

To select a layout, click on its name in the **Layouts** panel. Alternatively, click an empty area inside the layout in the editor. To select multiple layouts, hold down **Ctrl** while you click the additional layout.

You can work with fields in these ways:

- To select a field, click it.
- To add a field to the current selection, hold down **Ctrl** while you click the additional field.
- To remove a field from the selection, hold down **Ctrl** while you click that field.
- When a field is selected, you can click inside a layout while you hold **Shift**. This expands the selection to include all fields between the selected field and the cursor.
- To select all fields in a selected layout, click **Select all** in the **Properties** panel.

Previewing the current report personalization

To re-run the report with the same data as was printed originally, click **Preview** in the main toolbar. If you made changes, then the new version of the personalization is used for the preview. If unsaved changes are present, then you are prompted to save. You must save the personalization to make it effective. If you preview the report without saving, the previous version is displayed.

Note: On certain reports the preview cannot give an identical result as the original printed report. We recommend that you test the final personalization by printing from the session directly, instead of using the preview option. The report may behave differently depending on the selected data. This is due to print conditions or due to grouping, for example multiple orders with multiple lines. You can re-print the same report from the session for a different selection. Then the **Report Designer** uses that data for the preview option.

Handling problems after saving

When the personalization is saved, validation and processing is done before the personalization becomes effective. Issues can arise during this process. These issues must be solved before you can save the personalization properly.

Errors are displayed in the **Problems** panel. For each problem, the message, the report layout and field, if any, are displayed. Double-click a problem to select that layout or field.

When the affected layout or field is modified, the icon of the problem becomes gray, to indicate that it may no longer be relevant. After saving, the problem may disappear.

Sometimes the **Problems** panel does not show an issue, or does not give enough context. In these cases, you can find more information by selecting **Plain Output**. If this check box is selected, the plain-text output of the report script generator (repgen) and the compiler (bic) is displayed. If there is no output, for example because an error occurred before the generator was started, this check box is not available.

Changing Report Designer settings

1. Click the gear icon in the main toolbar to open the **Settings** menu.
2. Change the desired settings.
   See Report Designer settings on page 13.
3. Save the settings: on the **Settings** menu, select **Save Layout**.

Report Designer settings

You can use the **Settings** menu to change **Report Designer** settings. This table shows the options on the **Settings** menu:

Option	Description
Show Field Name	Initially the **Report Designer** shows the field values as they were displayed on the report. Select this option to show the field names (print expression) instead. This is useful if, for example, several fields have the same content, or fields are empty.
Show Field Data	Select this option to switch back to the initial setting, so that field values are displayed instead of field names.
Grid Size	Use this sub-menu to change the size of the grid and text in the editor. This does not affect the report. This can make text easier to read, or give a better overview of the report layouts.
Show Rulers	Use this option to toggle the visibility of the rulers in the editor. The rulers indicate the size of the report layouts and the current position of the cursor.
Show Grid	Use this option to toggle the grid visibility. This does not change the grid-based editing behavior of the editor.
Show Grid During Preview	Select this option to make the grid visible on the actual report when the preview option is used. This option can be useful to properly position and resize fields.
Unit	Use this submenu to change the units that are displayed in the Report Designer. This applies to the rulers, and the properties that are specified as a length.
Report Personal-ization History	Starts the **Report Personalization - History (ttadv9508m000)** session.

Option	Description
Save Layout	Select this option to save the settings. The options on the **Settings** menu and the panel sizes are remembered as part of the workbench settings. These are also saved when you click **Save changes and exit** in the main toolbar.
Reset Layout	Select this option to reset all options to their default setting.
About	Starts a dialog box with version information.

Using exact positioning

For reports that are printed to PDF, positioning more precise than columns and lines is available in the Report Designer.

You can convert the current personalization, if any, one time to use exact positioning. This action calculates the correct position and size for each field, based on its current position and the grid size. You cannot reverse the conversion after saving and closing the Report Designer: to return to the situation before the conversion, you should reinstate an old version of the personalization, or remove the personalization.

After conversion, the report personalization is ignored when printing to devices without intermediate XML file.

Reports may contain layout logic that is defined by the application. For example, jumping to the bottom of the page when a certain layout is printed. A report with exact positioning ignores this layout logic. Instead, you should define this logic in the personalization.

Converting a report to use exact positioning

Select **Actions > Convert to Exact Positioning** on the main toolbar. The editor is updated with the new report definition and a different set of properties is available.

Changing report properties

1. Select the report to view.
2. Edit the report's properties in the **Properties** panel.

   These properties are available:

Columns
Specify the number of columns, in characters, that is available on the report. Specify a value between 1 and 255. By default, the PDF converter switches to landscape pages at a width of 150 columns.
This property is not available if you use exact positioning.

Paper Size
Select one of the predefined paper sizes, or select `Custom Size` to manually specify the width and height of the paper.

Width
The width of the paper to use for this document. You can only change this value if `Custom Size` is selected for the paper size.

Height
The height of the paper to use for this document. You can only change this value if `Custom Size` is selected for the paper size.

Left Margin
Specify the left margin, in cm.

Right Margin
Specify the right margin, in cm.

Top Margin
Specify the top margin, in cm.

Bottom Margin
Specify the bottom margin, in cm.

Footer Margin
Specify the number of lines that are reserved for the footer layouts on a page. If the value is `-1`, this property is automatically determined by the reporting engine. If you have footer layouts of differing heights and conditions, then you must specify this property, because the automatic calculation does not work.
This property is not available if the report uses exact positioning. By default, footers are automatically positioned at the bottom of the page.
See Fixed positions for layouts on page 18.

Page Length
Specify the number of lines to be printed on a page. If this value is `-1`, the number of lines per page depends on the chosen device.
This property is not available if the report uses exact positioning.

Grid columns have fixed width
If a font size is specified for a field, it may be that the field content does not fit in the reserved area. Normally the PDF converter then resizes columns to ensure that fields do not overlap and are positioned in the correct relative order.
If this check box is selected, the converter does not resize columns, but only draws the text. This makes the layout more predictable when the font size is changed, at the risk of overlapping fields.
This property is not available if the report uses exact positioning.

Reset page number before layouts
Select the layouts for which the page number of the report should be reset. Whenever one of the selected layouts is printed, the page number continues counting at 1. Only layouts for which the **New Page** property is selected are available.

Font
Specify the font to use for the report. You can override this setting for specific fields. The list of fonts is automatically initialized using the system fonts, but additional fonts can be added manually. See the **Fonts (ttaad3560m000)** session.

Font Size
Specify the font size, in points, for the report. You can override this setting for specific fields.

Background Image
Specify the image to be displayed as background for each page of the report.

Preserve Ratio
If this check box is selected, the background image is resized to fit the page. The original aspect ratio of the image is maintained.
If this check box is cleared, the image is stretched to fill the entire page.

Sheet Name
This property is relevant if you export the report to an Excel workbook.
Specify the name of the Excel workbook sheet to which the report must be exported. If you leave this field blank, the sheet name is `Data`.

Note: The report margins, excluding the footer margin, lie outside of the grid. A larger left margin, with all other properties equal, results in a narrower grid.

Changing existing layouts

Changing layout properties

1. Select a layout. The layout’s properties are displayed in the **Properties** panel.
2. Edit the layout’s properties in the **Properties** panel. The size of the layout can also be changed by dragging the handles at its edges.

   These properties are available:

   Columns
   Specify the width of the layout as a number of characters. This may influence the dynamic sizing behavior of the PDF converter for some standard reports. To observe this behavior, select **Show grid during preview** on the settings menu.
   This property is not available if the report uses exact positioning.

Lines / Height
If the report does not use exact positioning, the name of the property is **Lines**. Specify the height, in lines, of the layout. This is the number of lines consumed on the page by the layout, regardless of its content or the **Extra lines** property.
If the report uses exact positioning, the name of the property is **Height**. It has the same function as **Lines**, but is specified as a length.

Extra lines / Extra Required Space
If the report does not use exact positioning, the name of the property is **Extra lines**. Before printing a layout, the reporting engine determines the free space at the current page. If the layout does not fit on the same page, the layout is printed on a new page. If the value of this option is 0, only the height of the layout itself is taken into account. With this option you can increase the number of extra free lines for the layout. You can use this property to ensure at least one detail line is printed together with the group header.
If the report uses exact positioning, the name of the property is **Extra Required Space**. It has the same function as **Extra lines**, but is specified as a length.
The **Extra lines / Extra Required Space** property is not available on Header and Footer layouts. In the Development Tools and LN Studio this property is referred to as **Extra Need**.

Start on new page
If this check box is selected, the layout is printed on a new page. When a new page is started, also Header, Footer, and Before Field layouts are printed. If the current line is at the top of the page, this option has no effect.

If this property is set on a Before Field layout with a sequence number higher than another Before Field layout, only the layout with higher sequence is printed on the new page. The other layout is printed on the previous page and is not repeated on the new page. In this case, headers are printed on the new page.

This property is not available on Header and Footer layouts.

Dataset
You can use this property to link the report layout to a dataset. The layout is not printed as part of the normal flow, but only if the dataset is printed. This is controlled through the **Datasets to Print** property.
If a layout is linked to a dataset, it can only contain data fields that are specified by the dataset. This property is only available if the report extension contains a dataset definition. This property is read-only if the report layout contains data fields.

Dataset Part
This property specifies at which time this dataset layout should be printed. Select one of these values:

- **`Header`**

  This layout is printed once at the start of the dataset, and at the start of a new page.

- **`Detail`**

  This layout is printed for each record in the dataset.

- **`Footer`**

  This layout is printed once after all records in the dataset have been printed.

This property is only available if a dataset is selected.

Datasets to Print
Specify the datasets that should be printed whenever this layout is printed. A dataset is printed only if it has any data.
This property is only available if the report extension contains a dataset definition, and the layout is not a dataset layout.

Background Image
Specify the image to be displayed as background when this layout is printed.

Preserve Ratio
If this check box is selected, the background image is resized to fit the layout. The original aspect ratio of the image is maintained.
If this check box is cleared, the image is stretched to fill the entire layout.

Standard print condition
This property is read-only. It shows the condition that must be true for the layout to be printed. The expression is 3GL code.

Personalized print condition
Optionally, specify a condition to be used in addition to the standard condition.
You can use this property for these purposes:

- Suppress the layout in some situations. The layout is printed only if both the standard condition and the personalized condition are true.
- Based on the value of report input fields, print a layout with a different style or a different selection of fields.
- Completely suppress a layout. To achieve this, specify `0` or `false` in this property.

Sheet Break
This property is relevant if you export the report to an Excel workbook and is only applicable for Before Field layouts.
If this check box is selected, an Excel workbook sheet break occurs each time the Before Field Layout is printed.

Rows
This property is relevant if you export the report to an Excel workbook.
Specify the number of Excel rows that is required for the layout.
For ‘non-exact positioned’ reports, the default value for this property is automatically set to the number of lines in the layout.

Note: For complex reports, the print condition alone does not guarantee that the report layout is printed if the condition matches. The standard report might have a script with a complex programmed condition that is invisible to the **Report Designer**.

Fixed positions for layouts

This option is only available if the report uses exact positioning. Except for footer layouts, layouts are printed in sequence while they fit on the current page, exactly underneath the previous layout. Footers are stacked on top of each other. The total height of the combined footers determines the reserved area.

You can change a layout to always print at a fixed position on the page. If the current page is beyond the fixed position of a layout when the layout is printed, the layout is printed at the specified position on the next page. If the layout is a footer layout, this does not happen: it is always printed at the specified position on the current page. Multiple footer layouts can overlap each other.

Configuring fixed positions for layouts

1. Select a layout. A toolbar is displayed in the properties panel.
2. In the toolbar of the properties panel, click **Layout Positions** to open the dialog box.
3. For the selected layout, select one of these options:

   No Fixed Position
   This is the default option. The layout is printed on the position after the previous layout. For footer layouts, this means the footer is printed above the next footer layout without fixed position, or at the bottom of the page.

   From Top
   Specify a position. The layout is printed with the top of the layout at the specified position.

   From Bottom
   Specify a position. The layout is printed with the bottom line of the layout at the specified position.

Text filters

Some LN reports support the concept of external and internal text in multiline text fields:

- The external reports remove internal text, but do show external text.
- The internal reports remove external text, but do show internal text.

In the **Report Designer**, you can perform these actions:

- View the text filters that are defined in the standard report.
- Define text filters for fields that do not have a filter.

Configuring text filters

1. Select a text field in a layout. A toolbar is displayed in the properties panel.
2. In the toolbar of the properties panel, click **Text Filters** to open a dialog box that shows all input fields that have data type Text.
3. For the appropriate fields, select one of these options:

   No Filter
   This option indicates that currently no text filtering is applied. All lines are printed as-is.

Show external text
This option indicates that external text should be displayed:
- For lines that start with ‘>’, the initial character is removed before printing.
- Lines that start with ‘<’ are not printed.
- Other lines are printed as-is.

Show internal text
This option indicates that internal text should be displayed:
- For lines that start with ‘<’, the initial character is removed before printing.
- Lines that start with ‘>’ are not printed.
- Other lines are printed as-is.

Moving, copying, or deleting a field

To move a field or a group of fields, select the field or group and then drag it to a new position. You cannot position fields on top of each other. You cannot move fields outside of their current layout, because often there is an implicit data dependency. You can also move fields by using the keyboard. Hold down **Ctrl** and use the arrow keys to move the selected fields. Press **Shift** at the same time to move the fields faster.

To copy fields, click **Copy** in the main toolbar, or press **Ctrl + C**. You can copy fields within the current layout and to another layout. You can copy fields to the clipboard by selecting **Actions > Copy to Clipboard**. To paste these fields, select **Actions > Paste from clipboard**, or press **Ctrl + V**. Fields that are copied to the clipboard can also be pasted on other reports.

To delete fields, click **Delete** in the main toolbar, or press the **Delete** key.

Adding a field

To add a new data field, drag the corresponding input field onto the target layout. The field uses the formatting and alignment options of the domain that is linked to the report input field.

After adding the field, you can change the field properties in the same way as for existing fields.

The print expression is based on the report input field and its type. For array fields, the expression refers to the first element.

Changing field properties

1 Select a field. The field’s properties are displayed in the **Properties** panel.

When a single field is selected, the editor shows layout handles in the middle of each edge. You can change the display size of the field through these handles and through the **Properties** panel.

2 Edit the field's properties in the **Properties** panel.

These properties are available:

Print expression
Specify the content to print in this field. You can specify a field name, or a more complex 3GL expression.

Left
Specify the position of the field from the left side of the layout.
This property is only available if the report uses exact positioning.

Top
Specify the position of the field from the top of the layout.
This property is only available if the report uses exact positioning.

Width
Specify the reserved width of the field, in columns.
If the report uses exact positioning, this property is specified as a physical length.

Height
Specify the reserved height of the field.
If the report uses exact positioning, this property is specified as a physical length.

Domain
Specify the domain of the field. The domain specifies the data type and formatting defaults of the print expression.
This property is read-only if the print expression is a report input field. In that case, the domain of the field is used.

Show as Icon
If this check box is selected, an icon, instead of a description, is displayed for enumerate options. These icons can be specified in the **Enum Domain Formatting (ttgfd4525m000)** session. If an icon is missing, a default is used.
This option is available if the data type of the domain is Enumerated.

Linked with Domain
If this check box is selected, various formatting options are derived from the information on the domain. If this check box is cleared, you can specify these options manually.

Data length
Specify the maximum number of characters for the field content. This property is only available if the data type of the domain is String, Text, or Enumerated.

Display format
This property specifies the exact formatting of the field content. The format must be valid for either the `edit$` or the `sprintf$` 3GL function.
This property is not available if the data type of the domain is String, Text, or Enumerated.

Alignment
Specify the horizontal alignment of the field content within its reserved space.
If the report uses exact positioning, you can also specify vertical alignment.
This property is not available if the data type of the domain is Text, Date, or Date-Time (UTC date).

Minimum lines
Specify the minimum number of lines to print for a text field.

Maximum lines
Specify the maximum number of lines to print for a text field.
If this value is `0`, the entire text is printed.

Line spacing
Specify the line-spacing as a factor of the font size.
This property is only available if the report uses exact positioning.
In a report that uses exact positioning, you cannot directly change the height of a text field. Instead, the visual height in the **Report Designer** is determined by the **Minimum lines** property. The height of a single line is determined by the **Line spacing** and **Font Size** properties.

Language Expression
Specify the language in which to print the field content, or for which language the date format should be retrieved.
This property is available only if the data type of the domain is Date, Date-Time (UTC date), Text, or Enumerated.

Currency Expression
Specify the currency for which to retrieve the generic formatting.
This property is available only if the data type of the domain is Float or Double.

Aggregation Function
If set, the print expression is aggregated using the selected function, and the aggregated value is printed instead.
Depending on the layout type in which the field is present, different records are aggregated. For an aggregated field in a Footer layout, the records that are printed on that page are aggregated. For an aggregated field in an After Field layout, all records for which the corresponding field has the same value (the sort group) are aggregated.
This table shows the available aggregation functions:

Function	Description
Count	The number of records. The print expression is unused for this function.
Total	The sum of the grouped values. This value is reset for each group.
Cumulative	The sum of the values across groups.
Minimum	The minimum value within the group.
Maximum	The maximum value within the group.
Average	The average of the grouped values.

This option is available only if the data type of the domain is a numeric type.

Aggregation Condition
You can use this property to filter the records for which the value should be aggregated. If the 3GL expression evaluates to False, the value of the current record is not considered for the aggregated value.

This option is only available if an aggregation function is selected.

Calculate in layout
Optionally, select one or more layouts. The value is aggregated only if the selected layouts are printed. If the session sends data to the report, but none of the selected layouts are printed, the value remains equal.
This option is only available if the **Aggregation function** is set to **`Cumulative`**.

Reset after layout
Optionally, select one or more layouts. The value and suppression of the aggregate are reset if the selected layouts are printed. This is useful if a single report contains multiple documents.
This option is only available if one or more layouts are selected for the **Calculate in layout** option.

Suppress after layout
Optionally, select one or more layouts. The printing of the aggregated value stops after any of the selected layouts are printed.
This is useful if a total amount is printed in a layout that is displayed before the aggregate. This situation occurs, for example, if the aggregate is in a footer layout.
This option is only available if one or more layouts are selected for the **Calculate in layout** option.

Suppression variable
Normally a variable name is automatically generated if one or more layouts are selected for the **Suppress after layout** option. You can use this option to override that name with a specific variable name. This variable is declared by the Report Designer and should not be an input field of the report.
You can use this option to suppress other fields, or the entire layout, instead of only the aggregate.
This option is only available if one or more layouts are selected for the **Suppress after layout** option.

Suppress Identical Values
If this check box is selected, a repeated value in this field is printed only once. Whenever the value of the field changes, it is printed again.

Unless this field changes
Ignores the suppression of identical values whenever the selected field changes. Through this property you can print the first value for each group, even if it is identical to the last value of the previous group.
This option is only available if **Suppress Identical Values** is selected, and the report has sorted input fields.

Formatting
You can format the field as bold, italic, and underlined.

Color
Specify the text color of the field contents.

Background
Specify the background color of the field. This fills the entire reserved space, regardless of the length of the field contents.

Font
Specify the font of the field. See the **Fonts (ttaad3560m000)** session. If not specified, the font that is specified on the report is used. This value is displayed below the font property.

Font Size
Specify the font size of the field, in points. If not specified, the font size that is specified on the report is used. If that value is specified, it is displayed below the property. If no value is specified on the report, the PDF converter automatically resizes the text to fit the field. A calculation of that size is displayed below the property.

Border
Specify which sides of the field should have a border and specify the border thickness, style, and color.

Print condition
Specify the condition that must be met for the field to be printed. The expression is 3GL code.

Column
This property is relevant if you export the report to an Excel workbook.
Specify the Excel column on the current sheet where the field should be placed.
If you select multiple items, the specified value is applied to the first selected item. The value is incremented for the other selected items. For example, you have selected four items and you specify **`B`** in the **Column** property. For the first selected item, the value of the **Column** property is **`B`**. For the other three items, the value of the **Column** property is **`C`**, **`D`**, and **`E`** respectively.
If you leave this property blank, the field is not included in the workbook.

Row
This property is relevant if you export the report to an Excel workbook.
Specify the Excel row number where the field should be placed. The value cannot be greater than the value of the **Rows** property of the layout in which the field is present.
If you select multiple items, the specified row number is applied to all selected items. Therefore, these items have the same row number.
For 'non-exact positioned' reports, the default value for this property is automatically set to the layout line number within the layout. You can edit this value.

Adding a special field

Not all fields are input fields. The **Special Items** panel lists these non-input fields:

- Image
- Line
- Label
- Text
- Predefined Field
- Barcode
- Box
- Signature

These special fields have a default size and no value set, when applicable.

To add a special field to the layout:

1. Drag the special field from the **Special Items** panel to the desired position in the layout.
2. In the **Properties** panel, specify the properties for the special field.
   Alternatively, you can add a label or text with the description of an input field. To do so, drag the icon next to the input field to the desired position in the layout.

Image

After adding an image to a layout, you must choose one of these types:

Company Logo
The logo for the current company is retrieved from the **Companies (ttaad1100m000)** session. If no logo is defined for the current company, the logo of company 0 is used.

Static Image
You can upload an image file in the **Report Designer**. The image is stored on the LN server.

Image Field
The image field of a table is retrieved. You can upload these images in various LN sessions, such as the **Business Partners (tccom4500m000)** session.
This option is only available if a report input field of the correct type is available.

Image Path
Specify a report input field that contains the path to the image file on the LN server.
You can create a report extension to add the report input field and set its value to the desired path of the image. Optionally, the report extension can also retrieve the image from an external source, such as IDM.
This option is available only if a report input field of the single-byte string type, with a length of at least 60 characters, is available.

When an image is specified, but its file cannot be found on the LN server, an error is reported when printing.

These properties are available:

Left
Specify the position of the field from the left side of the layout.
This property is only available if the report uses exact positioning.

Top
Specify the position of the field from the top of the layout.
This property is only available if the report uses exact positioning.

Width
Specify the width of the field, in columns.
If the report uses exact positioning, this property is specified as a length.
The image is automatically re-sized to fill the field. This does not change the aspect ratio of the image.

Height
Specify the height of the field, in lines.
If the report uses exact positioning, this property is specified as a length.

Alignment
Specify the horizontal and vertical alignment of the image within the field.

Column
This property is relevant if you export the report to an Excel workbook.
Specify the Excel column on the current sheet where the image should be placed.
If you select multiple items, the specified value is applied to the first selected item. The value is incremented for the other selected items. For example, you have selected four items and you specify **`B`** in the **Column** property. For the first selected item, the value of the **Column** property is **`B`**. For the other three items, the value of the **Column** property is **`C`**, **`D`**, and **`E`** respectively.
If you leave this property blank, the image is not included in the workbook.

Row
This property is relevant if you export the report to an Excel workbook.
Specify the Excel row number where the image should be placed. The value cannot be greater than the value of the **Rows** property of the layout in which the image is present.
If you select multiple items, the specified row number is applied to all selected items. Therefore, these items have the same row number.
For 'non-exact positioned' reports, the default value for this property is automatically set to the layout line number within the layout. You can edit this value.

Horizontal and vertical line

Both horizontal and vertical lines automatically expand their size to the maximum length that is possible at the current position.

These properties are available:

Left
Specify the position of the line from the left side of the layout.
This property is only available if the report uses exact positioning.

Top
Specify the position of the line from the top of the layout.
This property is only available if the report uses exact positioning.

Width / Height
Specify the width or height of the line, in columns or lines.
If the report uses exact positioning, this property is specified as a length.

Left end / Right end
Specify the ending of a horizontal line, to connect corners to other lines.
This property is not available if the report uses exact positioning; lines can overlap instead.

Line thickness
Specify the thickness of the line as a length.

This property is only available if the report uses exact positioning.

Line style
Specify the style of the line: `solid`, `dashed` or `dotted`.
This property is only available if the report uses exact positioning.

Color
Specify the color of the line.

Label

You can use labels for fixed text that is language-dependent. When printing, the reporting engine automatically selects the best fitting label in the current language.

These properties are available:

Label
Specify the label code to be printed. The label must be present in the package of the report, or in the extensibility package.
You can also search labels by description. After you specify a part of the description in the field, the workbench shows a list of matching labels. If only one label matches the description, that label is selected automatically.

Left
Specify the position of the field from the left side of the layout.
This property is only available if the report uses exact positioning.

Top
Specify the position of the field from the top of the layout.
This property is only available if the report uses exact positioning.

Width
Specify the reserved width of the field, in columns.
If the report uses exact positioning, this property is specified as a length.

Height
Specify the reserved height of the field. For multi-line labels, this must be a multiple of the number of lines.
If the report uses exact positioning, this property is specified as a length, and there is no relation to the number of lines.

Data length
Specify the maximum number of characters for the label description.

Label lines
Specify the maximum number of lines for the label description.

Align according to domain
If this check box is selected, the alignment of the label is linked to the alignment of the corresponding field.
This check box is available only if the label code is a table field.

Alignment
Specify the horizontal alignment of the label within its reserved space.
This option is not available if **Align according to domain** is selected.
If the report uses exact positioning, you can also specify vertical alignment.

Formatting
You can format the field as bold, italic, and underlined.

Color
Specify the text color of the label description.

Background
Specify the background color of the label. This fills the entire reserved space, regardless of the length of the label description.

Font
Specify the font of the label. See the **Fonts (ttaad3560m000)** session. If not specified, the font that is specified on the report is used. This value is displayed below the font property.

Font Size
Specify the font size of the label, in points. If not specified, the font size as specified on the report is used. If that value is specified, it is displayed below the property. If no value is specified on the report, the PDF converter automatically resizes the text to fit the field. A calculation of that size is displayed below the property.

Border
Specify which sides of the label should have a border and specify the border thickness, style, and color.

Print Condition
Specify the condition that must be met for the label to be printed. The expression is 3GL code.

Column
This property is relevant if you export the report to an Excel workbook.
Specify the Excel column on the current sheet where the label should be placed.
If you select multiple items, the specified value is applied to the first selected item. The value is incremented for the other selected items. For example, you have selected four items and you specify `B` in the **Column** property. For the first selected item, the value of the **Column** property is `B`. For the other three items, the value of the **Column** property is `C`, `D`, and `E` respectively.
If you leave this property blank, the label is not included in the workbook.

Row
This property is relevant if you export the report to an Excel workbook.
Specify the Excel row number where the label should be placed. The value cannot be greater than the value of the **Rows** property of the layout in which the label is present.
If you select multiple items, the specified row number is applied to all selected items. Therefore, these items have the same row number.
For ‘non-exact positioned’ reports, the default value for this property is automatically set to the layout line number within the layout. You can edit this value.

Text

Use this special field to add fixed, language-independent, text to the report. It is commonly used for single characters such as the plus sign or a colon.

These properties are available:

Text
Specify the text to be printed on the report.

Left
Specify the position of the field from the left side of the layout.
This property is only available if the report uses exact positioning.

Top
Specify the position of the field from the top of the layout.
This property is only available if the report uses exact positioning.

Width
Specify the reserved width for the field, in columns.
If the report uses exact positioning, this property is specified as a length.

Height
Specify the reserved height of the field, in lines.
If the report uses exact positioning, this property is specified as a length.

Alignment
Specify the horizontal alignment of the text within its reserved space.
If the report uses exact positioning, you can also specify vertical alignment.

Formatting
You can format the field as bold, italic, and underlined.

Color
Specify the text color of the text.

Background
Specify the background color of the field. This fills the entire reserved space.

Font
Specify the font face of the text. See the **Fonts (ttaad3560m000)** session. If not specified, the font specified on the report is used. This value is displayed below the font property.

Font Size
Specify the font size of the text, in points. If not specified, the font size specified on the report is used. If that value is specified, it is displayed below the property. If no value is specified on the report, the PDF converter automatically resizes the text to fit the field. A calculation of that size is displayed below the property.

Border
Specify which sides of the text should have a border and specify the border thickness, style, and color.

Print Condition
Specify the condition that must be met for the text to be printed. The expression is 3GL code.

Predefined field

You can use several data fields on all reports, without having to define them as input fields. In the Development Tools and LN Studio these are referred to as Specials.

These properties are available:

Special
Specify the type of predefined field to be printed.
This table shows the available types:

Predefined field type	Description
Company Description	The description of the company in which the report is printed, as defined in the **Companies (ttaad1100m000)** session.
Company Number	The number of the company in which the report is printed.
Date	The current date on which the report is printed.
Time	The current time on which the report is printed.
Number of Records	The current number of records printed to the report.
Page	The current page number.
Page Count	The total number of pages. This option is only supported when printing to PDF.
Report Description	The description of the report.

Left
Specify the position of the field from the left side of the layout.
This property is only available if the report uses exact positioning.

Top
Specify the position of the field from the top of the layout.
This property is only available if the report uses exact positioning.

Width
Specify the reserved width for the field, in columns.
If the report uses exact positioning, this property is specified as a length instead.

Height
Specify the reserved height of the field, in lines.
If the report uses exact positioning, this property is specified as a length instead.

Data Length
Specify the maximum length of the field content.
You can modify this property only for Company Description and Report Description.

Alignment
Specify the horizontal alignment of the text within its reserved space.
If the report uses exact positioning, you can also specify vertical alignment.

Formatting
You can format the field as bold, italic, and underlined.

Color
Specify the text color of the field.

Background
Specify the background color of the field. This fills the entire reserved space.

Font
Specify the font face of the field. See the **Fonts (ttaad3560m000)** session. If not specified, the font specified on the report is used. This value is displayed below the font property.

Font Size
Specify the font size of the field, in points. If not specified, the font size specified on the report is used. If that value is specified, it is displayed below the property. If no value is specified on the report, the PDF converter automatically resizes the text to fit the field. A calculation of that size is displayed below the property.

Border
Specify which sides of the field should have a border and specify the border thickness, style, and color.

Barcode

You can add a barcode to a layout, and then choose the appropriate barcode type. The contents of the barcode depend on the type, and can be specified as a 3GL expression. The available properties depend on the selected barcode.

These properties are generic:

Barcode Type
Specify the barcode symbology to use; both 1D and 2D barcodes are supported.

Data Expression
Specify the 3GL expression that evaluates to the data to print in the barcode. The permitted contents depend on the selected barcode type.

Width
Specify the reserved width of the barcode, in columns. To preserve legibility of the barcode, the PDF converter does not always scale or truncate barcode contents to fit the fields. Use the **Show grid during preview** option to observe this behavior.

Height
Specify the reserved height of the barcode.

Print Condition
Specify the condition that must be met for the barcode to be printed. The expression is 3GL code.

Column
This property is relevant if you export the report to an Excel workbook.
Specify the Excel column on the current sheet where the barcode should be placed.
If you select multiple items, the specified value is applied to the first selected item. The value is incremented for the other selected items. For example, you have selected four items and you specify `B` in the **Column** property. For the first selected item, the value of the **Column** property is `B`. For the other three items, the value of the **Column** property is `C`, `D`, and `E` respectively.
If you leave this property blank, the barcode is not included in the workbook.

Row
This property is relevant if you export the report to an Excel workbook.
Specify the Excel row number where the barcode should be placed. The value cannot be greater than the value of the **Rows** property of the layout in which the barcode is present.
If you select multiple items, the specified row number is applied to all selected items. Therefore, these items have the same row number.
For ‘non-exact positioned’ reports, the default value for this property is automatically set to the layout line number within the layout. You can edit this value.

Box

The box is a background item that does not contain any data. You can use a box to add a background color on an area. The box can be positioned behind other fields.

These properties are available:

Left
Specify the position of the box from the left side of the layout. This property is only available if the report uses exact positioning.

Top
Specify the position of the field from the top of the layout. This property is only available if the report uses exact positioning.

Width
Specify the width of the box, in columns. If the report uses exact positioning, then this property is specified as a length.

Height
Specify the height of the box, in lines. If the report uses exact positioning, then this property is specified as a length.

Background
Specify the background color of the box.

Border
Specify which sides of the box should have a border and specify the border thickness, style, and color.

Signature

You can use the signature to add a visual representation for a digital signature. The signature can be a combination of an image and text. The printed document contains an empty field that is a placeholder for the digital signature. When the document is signed using Document Output Management, the field is filled.

These properties are available:

Left
Specify the position of the signature from the left side of the layout. This property is only available if the report uses exact positioning.

Top
Specify the position of the signature from the top of the layout. This property is only available if the report uses exact positioning.

Width
Specify the width of the signature, in columns. If the report uses exact positioning, then this property is specified as a length.

Height
Specify the height of the signature, in lines. If the report uses exact positioning, then this property is specified as a length.

Company Logo
The logo for the current company is used as image for the signature. The logo is retrieved from the **Companies (ttaad1100m000)** session.

Static Image
You can upload an image file in the **Report Designer**. The image is stored on the LN server.

Image Path
Specify a report input field that contains the path to the image file on the LN server.
You can create a report extension to add the report input field and set its value to the desired path of the image. Optionally, the report extension can also retrieve the image from an external source.
The image must still exist when the document is signed and the signature is filled in.
This option is available only if a report input field of the single-byte string type, with a length of at least 60 characters, is available.

Image Position
Specify the position of the image when both an image and text are used for the signature.

Vertical alignment of image
Specify the vertical alignment of the image if text is next to the image.

Text
Specify the text to show in the signature.
This table shows the variables that you can specify in the text; the variables are replaced when the document is signed:

Variable	Description
#signer#	The common name of the certificate that is used to sign the document.
#date#	The date at the moment of signing.
#time#	The time at the moment of signing.
#signature.text1#	The content of the *signature.text1* variable as configured in the report rule.
#signature.text2#	The content of the *signature.text2* variable as configured in the report rule.

Horizontal alignment of text
Specify the horizontal alignment of the text within the signature.

Font
Specify the font of the text. See the **Fonts (ttaad3560m000)** session.

Font size
Specify the font size of the text in the signature, in points.

Color
Specify the text color for the signature.

Background
Specify the background color for the signature.

Adding a new report layout

1. Select an existing layout or a category in the **Layouts** panel.
2. Click the **New** icon on the toolbar in the **Layouts** panel.

   The new layout is inserted after the selected layout. If a category was selected, the new layout becomes the first layout in that category.

Sequence numbers in names of new report layouts

The name of a new report layout contains these two sequence numbers:

- The first number is the sequence number of the selected layout, or 0 if a category was selected.
- The second number is a sub-sequence number.

This does not mean that these layouts have a relation. They are completely independent and can also be printed independently. The sequence numbers ensure the layouts are printed in the correct order, and new layouts can be inserted even if there is no gap in the standard sequence numbers.

For example: The standard report has layout “Detail 1” and “Detail 2”. If you select the first detail layout and then add a new layout, “Detail 1 1” is created. You can print this layout if “Detail 1” is not printed, and vice-versa. The layouts are always processed in that order. If the “Detail 1” layout is removed, “Detail 1 1” is still processed before “Detail 2”.

If a Before Field or After Field layout is added, you must link these layouts to a sorted report input field. If a new layout is inserted after an existing layout, the new layout is linked to the same field. When adding a layout for a different field, you can select that field on the menu that is displayed when you click the **New** icon.

Removing a report layout

1. Select the layout to remove.
2. Click the **Delete** icon on the toolbar in the **Layouts** panel.

   This option is available only for layouts that were added in the personalization. Standard report layouts cannot be removed.

Note: Removing a layout is permanent. After the **Report Designer** has been closed, you cannot recover a layout that was removed. Therefore, do not remove layouts that you may require again later. Instead of removing a layout, you can suppress it through the **Print Condition** property.

Applying conditional formatting

With conditional formatting you can change the formatting of fields based on data that is printed to the report.

In conditional formats, you can define these properties:

- Foreground color
- Background color
- Bold
- Italic
- Underline
- Border side

  Top, Bottom, Left, Right, or combinations of these
- Border style
- Border thickness
- Border color

If the report is in exact positioning mode, you can also set horizontal alignment and vertical alignment in a conditional format.

You can specify conditional formats for these report elements:

- Report
- Layout
- Label
- Field
- Special field

A single element can have multiple conditional formats. If multiple conditions evaluate to true, the formats are merged. Conditional formats cannot be directly specified on all field types but a format on a report or layout may also affect other field types.

Within a single element, properties are applied from top to bottom. For example, the first format of a field specifies a blue background color. The second format specifies a red background color and white foreground color. If both conditions are true, the field gets a blue background color and white foreground color.

Across elements, properties override properties on a higher level. For example, a conditional format on a layout specifies a red background color and white foreground color. A conditional format on a field in that layout specifies a blue background color. If both conditions are true, the field gets a blue background color and white foreground color.

Specifying conditional formats

1. Select a report, layout, or field. In the Properties panel, a Conditional Formatting link is displayed.
2. Click this link to open the dialog box where conditional formats can be configured.
3. Add or remove conditional formats in the grid.
4. Use the arrow buttons to rearrange the formats. The properties that are available on the format have the same meaning as the properties on the fields. The condition is 3GL code.

Removing personalizations

To remove personalizations for the entire report, on the main toolbar, select **Actions > Remove All Personalizations**.

This action is equivalent to removing the record in the **Report Personalizations (ttadv9507m000)** session. The **Report Designer** replaces all layouts, fields, and properties with those of the standard report.

To remove personalizations for a single layout, on the toolbar in the **Layouts** panel, select **Actions > Remove personalizations for the selected layout**. The selected layout, including its fields and properties, are replaced with the layout from the standard report.

Copying or deploying personalizations

Initially, the report personalization is applied only for the user that created the personalization.

To copy report personalizations to other users or levels, use the **Report Personalizations (ttadv9507m000)** session. You can copy the personalization to another user, role, or company. When the report is printed, the most specific personalization is used for the report. When the personalization on a higher level is modified in the **Report Designer**, it is initially stored on user level again.

To copy personalizations to other systems, use these sessions:

- **Export Configuration Data (ttaad7201m000)**
- **Import Configuration Data (ttaad7202m000)**

Using multiple report personalization variants

Sometimes multiple designs are required for the same report. You can maintain such a personalization through conditions on layouts or fields. If this becomes too complex, then you can use multiple variants instead. You can use report personalization variants to create multiple personalizations on the same personalization level. When printing a report for which multiple variants are applicable, the user can manually select the variant to use.

Saving a new variant

You can use the **Report Personalizations (ttadv9507m000)** session to copy an existing personalization to a new variant.

Alternatively, use this procedure to add a report personalization variant in the **Report Designer**:

1. Select **Actions > Save as New Variant**.

   The **Save Report Personalization as new variant (ttadv9207m000)** session starts.
2. Specify the variant code.
3. Specify a label or a description.
4. Click **OK** to close the dialog and save the current personalization as a new variant.

   The list of reports in the **Layouts** panel now shows a new entry for the same report, but with the variant code you specified. You can modify and save the personalization in the same way as a normal report personalization.

Determining applicable report personalizations

To determine which report personalization variants are applicable, only the most specific level for which a personalization exists is considered. The most specific level is user, role, or company, in that order. If that level contains multiple variants, then a choice is displayed. Otherwise the only available personalization is used.

This table shows examples of personalizations, all for the same report:

Level	For	Variant
Company	70	
Role	SERVICE	Simplified Contract
Role	SERVICE	Complex Contract
User	user1	

If user1 prints the report, then the one personalization on user level is used; the user does not have to make a choice.

If user2 with role SERVICE prints the report, then the two variants on role level are applicable; the user must make a choice.

Alternatively, the extension can make the choice instead of the user. To do so, the `Get Alternative Report` hook of the report extension should set the `spool.report.variant` predefined variable to the variant code to print. In this case, the most specific level for which the variant exists is used: if user1 prints the report, and the extension selects the “Simplified Contract” variant, then the personalization on role level is used.

Troubleshooting in the Report Designer

If an error is displayed or the **Report Designer** shows strange behavior, it can be useful to create a trace-file for support.

1. Start LN UI.
2. Select **Options > Activate Trace Mode**.
3. A window, which shows the LN UI trace, is displayed. Close this window.
4. Start the **Report Designer**. A new trace window is displayed. Do not close this window.
5. After the issue has been reproduced, click **Download Log File** in the trace window.
6. If the issue cannot be reproduced, you can create a trace-file with less information. After the problem occurs, press **Shift + L** in the **Report Designer**.

Caution: The trace-file that is generated by the workbench may contain sensitive information. The reports that are printed while the **Report Designer** is open contain the report definition that is used by the **Report Designer**. Therefore, these reports are logged in the trace-file. You should redact sensitive information after downloading the trace-file. Replace this information with something obvious, such as a range of As or a range of zeros. The trace-file is a plain-text file and can be opened through any text editor.

Chapter 3: Generating new reports

1. Start the **Generated Reports (ttadv3548m000)** session. An overview of the generated reports and sessions is displayed.
2. Click **New**. The **Select Current Activity (tlprj0140m000)** session starts.

   Generating new reports is done through activity-based development. Therefore, an activity must be selected or created. These are the same activities as used by LN Studio and extensibility.

   You must have developer authorization for the extensibility package, ‘tx’.

   Note: Before you can select an activity, extensibility parameters must be present. See the **Initialize Extensibility (ttext0200m000)** session and the *Infor LN Extensions Development Guide* .
3. Select an activity and click **OK**. The **Report Designer** is started with a different layout and the **Report Configuration** dialog box is displayed.
4. In the **Report Configuration** dialog box, specify these properties:

   Report code
   The package and module code is “txgre”. This is read-only. Specify the rest of the report code. By default, the first free sequence number is displayed.

   Report description
   Specify the description of the report, in the current language of the user.

   Size
   The size specifies the default margins and number of columns for the report. These sizes are defined in the **Default Sizes (ttadv3540m000)** session.

   Session description
   Specify the description of the session, in the current language of the user.

   Main table
   Specify the first table to be selected by the generated session. The main table determines the overall structure and grouping on the report. After selecting a main table, you can select referred tables in both directions.
5. Click **OK**.

   These panels are displayed:

   Tables
   The tree of references. The **Refers-to** folder contains tables with details of the selected table. The **Referred-by** folder contains tables that refer to the selected table.

For example: Sales Orders (tdsls400) refers to Sales Offices (tdsls012), which is one detail of the sales order. Sales Orders (tdsls400) is referred by Sales Order Lines (tdsls401). The lines refer to the order.
From refers-to tables you can browse further to other refers-to tables only. For referred-by tables, both directions are available.
Next to the header of the panel, a breadcrumb from the main table to the selected table is displayed. Click a table in the breadcrumb, to select that table.

Fields
The list of fields of the currently selected table. Array fields are displayed multiple times, once for each element. The **Selected** column indicates whether a field is currently selected for the report.

Selected Fields
The overview of currently selected fields, with the same structure as the report has. The main table is always present as a group. Fields of that table and refers-to tables are displayed in the **Fields** list below the table.
If fields of a referred-by table are selected, a new group is created for that table, and the fields are added to that group. In the same way, fields of refers-to tables of the sub-group are displayed in that list.
For example, with Sales Orders as main table, all fields of the Sales Orders table and all fields of refers-to tables of sales orders are displayed in the main group. If a field of Sales Order Lines is selected, a new group is created. All fields of refers-to tables of sales order lines are displayed in that new group.

Properties
This panel shows the session and report description and code. The properties of the currently selected group are also displayed.

When you open an existing record in the **Generated Reports (ttadv3548m000)** session, this view is directly displayed, without showing the **Report Configuration** dialog box. In that case, you can open the **Report Configuration** dialog box by clicking **Report Configuration** on the main toolbar.

Adding or removing fields

You can add or remove fields to the current selection by toggling the **Selected** column in the **Fields** panel. If the first field of a table is selected, a new group is added automatically. In the same way, if the last field is de-selected, the group is removed automatically.

The selected fields indicate which fields are available on the report. If enough room is available, then they are visible by default. Otherwise, they are added as report input field, but not placed on a layout.

Fields are added to the report in the order they are selected. In the **Selected Fields** panel, you can move fields within a group, and groups within their parent group by dragging them to the desired position.

Changing group properties

After selecting a table in the **Tables** panel or the **Selected Fields** panel, the corresponding group is displayed in the **Properties** panel.

Field Direction
Specify the direction of the fields on the report layout. Horizontal means the fields are in a grid below their labels. Vertical means the fields are positioned in a list next to their labels.

Filter Present
The checkmark indicates whether a filter is specified for this group. The hyperlink starts the **Report Dataset Filter (ttadv9140m000)** session, in which you can define a filter.

Filter Text
If a filter is present, you can specify a textual description of the filter in this field. The specified text is displayed in the generated session.

Print group if no subgroups are printed
By default, a group is printed, even if no data is present or if all data is filtered out of the set. If this check box is cleared, such a group is suppressed.

Applying a filter to a group

1. Click the Filter Present hyperlink in the **Properties** panel. The **Report Dataset Filter (ttadv9140m000)** session starts.
2. Add records with these properties:

   Catenation Operator
   Specify how this record should be combined with the other records. The first record is always an “if”. Other records can be “and”, or “or”:

   - “And” means the data must match both records.
   - “Or” means the data must match one of the records to be printed.

   The conditions are grouped automatically. Each “and” starts a new group, and each “or” becomes part of the previous group. This grouping is indicated by the parentheses in the session.

   Field Name
   Specify the field on which to apply the filter.

   Condition Operator
   Specify the way in which to compare the specified value with the field value.

   Input
   If this check box is selected, the user can specify a value for the filter in the generated session. Otherwise, the value is always applied implicitly, and not displayed in the session.

   Value
   The value with which to compare the field value. If Input is enabled, then this becomes the default value that is displayed in the session, but the user can change it.

Match Case
If this check box is selected, comparison of text fields is case-sensitive. Thus, for example, ”field content” is treated differently from “Field content”.

Generating the session and report

After selecting fields and optionally adding a filter, you can generate the session and report. You can click **Generate and run** on the main toolbar to generate the session and report, and start the session afterwards. In the generated session, you can print the report and test the filter. After closing the session, the **Report Designer** does not switch to design mode. If no changes have been made since the last time the report was generated, this button shows the text “Run” instead.

You can click **Generate and design** on the main toolbar to generate the session and report, and start the session afterwards. In this case, if you print the report, after closing the session the **Report Designer** switches to design mode for the generated report. You can style or position additional fields as appropriate. In the design mode, a new button is available on the main toolbar to switch back to the generation mode. If no changes have been made, this button shows the text “Design” instead.

Chapter 4: Modifying generated reports

1. Start the **Generated Reports (ttadv3548m000)** session. An overview of the generated reports and sessions is displayed.
2. If not a current activity is selected before, select **Actions > Select Current Activity**.

   See Generating new reports on page 40.
3. Select the generated report. Select **Actions > Check-Out**.
4. Click **Report Designer**.
5. In **Report Designer** you can perform these actions:
   - Add or remove fields.
   - Change group properties.
   - Apply a filter to a group.
   - Generate the session and report.

   For the applicable steps for each action, see Generating new reports on page 40.
6. Select **Actions > Check-In**.
7. Accept the default revision text or specify your own text and click **Save changes and exit**. Before you checked in the generated report, the new generated report or the new version of the generated report was only available for you. After check-in, the most recent version of the generated report is available to all users who set their activity context to your activity.
8. Select **Actions > Commit**.

The new generated report, or the new version of the generated report, is available to all users.

Activity context

When starting the **Generated Reports (ttadv3548m000)** session, the activity context is automatically set to your current activity. The activity context is changed when you select another current activity.

After the activity context is set, the sessions that are started run within this context. The sessions include the functionality that is added in the generated reports.

With **Options** and **Debug and Profile 4GL**, you can also set activity context.

When the generated reports are committed, the sessions include the generated report functionality without the requirement to set the activity context.

Activity in title of session tab

This section is only applicable if LN runs on-premises.

Hint: To ensure your session runs in the correct activity context, add the activity to the title that is used for the session tab in LN UI. To achieve this:

1. Select **Options > Settings** and select your current profile.
2. Add **`–set BAAN_WIN_TITLE=”%S-%a`** to the **Command** field in your User Profile Details. The **`%a`** shows the activity context. The result is, for example, Item Defaults-act0001.

Chapter 5: Exporting to Excel

You can export a personalized report to an Excel workbook.

Prerequisites

Before you can export the report to Excel, these prerequisites must be met:

- A "Rewrite File" device that uses the `excelRD` argument must be available.
  See Creating an ExcelRD device on page 46.
- The report must contain personalizations.
- Excel Output properties must be specified in the report.
  See Specifying Excel output properties on page 47.

Creating an ExcelRD device

1. Start the **Device Data (ttaad3500m000)** session and click **New**.
2. Specify this information:

   Device
   Specify the device code. For example, **`EXCEL_RD`**.

   Description
   Specify a description.

   Device Type
   Specify **`Rewrite file`**.

   Locale
   Leave blank.

   Intermediate File in XML Format
   Select this check box.

   Driver
   Leave blank.

Shell Command
Leave blank.

4GL Program
Leave blank.

Argument
Specify **`excelRD`**.

Path
Specify the path to store the output file.

Change Output file allowed
Select this check box.

Page Length
Specify `0`.

See the online help of the **Device Data (ttaad3100s000)** session.

3. Click **Save**.

Specifying Excel output properties

You must specify various Excel output properties in the report.

1. For the report as a whole, specify the **Sheet Name** property.

   See Changing report properties on page 14.
2. For the layouts in the report, specify the **Rows** property.

   For Before Field layouts, you must also specify the **Sheet Break** property.

   See Changing layout properties on page 16.
3. For fields, images, labels, and barcodes, specify the **Excel Output Column** and **Excel Output Row** properties.

   Note: When printing to an EXCELRD device, only fields, images, labels, and barcodes for which these properties are filled are included in the Excel workbook. A property is 'filled' if the property is not blank and not equal to zero.

   See these sections:
   - Changing field properties on page 20
   - Image on page 25
   - Label on page 27
   - Barcode on page 31

   If you select multiple items, you can simultaneously specify property values for the selected items:
   - If you specify a column, the specified value is applied to the first selected item, and is incremented for the other selected items. For example, you have selected four items and you

specify `B` in the **Column** property. For the first selected item, the value of the **Column** property is `B`. For the other three items, the value of the **Column** property is `C`, `D`, and `E` respectively.

- If you specify a row number, that number is applied to all selected items, so that these items have the same row number.

Exporting a personalized report to Excel

1 Start the print session to which the personalized report belongs.

2 Specify the desired options and select the ExcelRD device.

You can select this device on the **File** tab in the **Select Device (ttstpsplopen)** session.

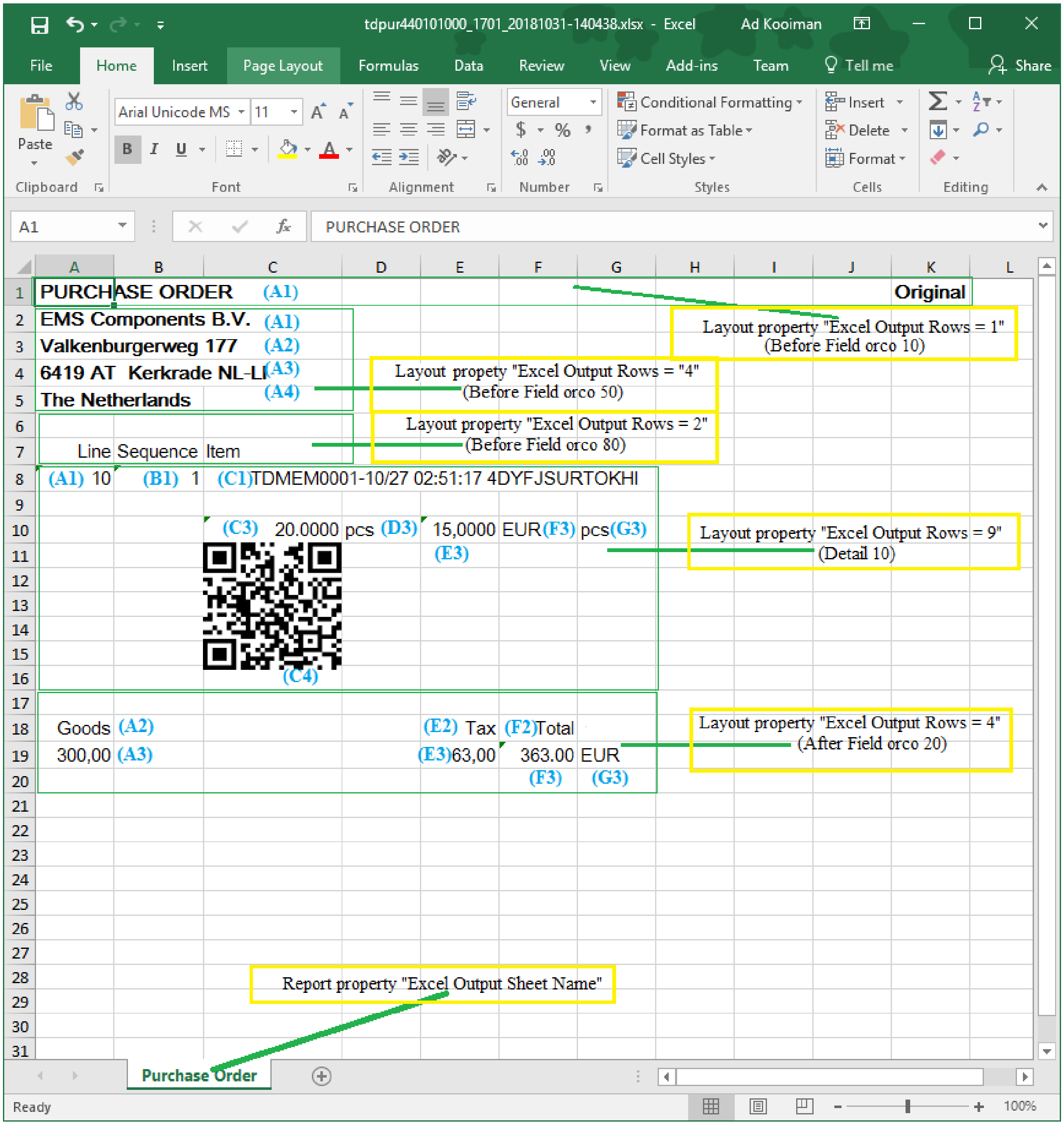
3 Print the report to the ExcelRD device.

a Click **Continue** in the **Select Device (ttstpsplopen)** session. A **Download File** dialog box is displayed.

b Click **Download** to store the generated spreadsheet on your computer.

Example

This screenshot shows an example of a Purchase Order report (tdpur4401m000), for which a few report elements are exported to an Excel workbook:



A green box refers to a report layout.

The blue text contains the **Excel Output - Column** and **Excel Output - Row** for the exported report element. The **Excel Output - Rows** properties are decreased to avoid unnecessary empty lines, or increased to provide enough space for the barcode.

Note: You cannot mix up elements between report layouts. For example, you cannot move a header layout element to a detail or any other layout.