

SAP Crystal Solutions
SAP Crystal Reports and SAP Crystal Server

Step by Step guide: Create an HR Report With SAP Crystal Reports 2020





CREATE A HUMAN RESOURCES REPORT

Human Resources Information Systems (HRIS) are prevalent in even the smallest organizations. SAP Crystal Reports is the perfect tool to analyze and report on HRIS data, as its capabilities for HR reporting are limited only by the imagination.

Here is a sample report designed to summarize data in a human resources data source:

HR Report.rpt

Design | Preview

Parameters

Type HR Pas...
Click here to a...

PHa
Ridin' Round Outdoor Sports
Employee Summary

GH1

Employee Name	Title	Address	Hire Date	Service Days	Salary	Photo
Brid, Justin	Marketing Director	64 E. Mill Pond St. Reseda, CA 91335	Hired: 5/5/2019	51 days service	Salary: *****	
Buchanan, Steven	Sales Manager	9851 North Thompson Lane Rancho Cucamonga, CA 91730	Hired: 3/10/2019	107 days service	Salary: *****	
Callahan, Laura	Inside Sales Coordinator					
Davolio, Nancy	Sales Representative					

Enter Values

Type HR Password to see Salary (case-sensitive - blank for no salary):
HR Password

OK Cancel



This HR report makes use of several important Crystal Reports features:

- Special database join options permit all employees to be included on the report whether they sold any products or not. If they did, their total sales appears on the report. Also, a separate data source table containing an HR password can be linked to other tables even though there is no common field.
- Multiple report columns allow more pleasing columnar presentation of data, even if there is no traditional multi-column requirement, such as printing mailing labels.
- Customized group naming and sorting avoids potential issues with employees with the same name being combined in a single group. Also, groups may be sorted on any desired value, not just the value the group is based on.
- Dynamic image location allows an image to be updated “on the fly” within the report based on some report or database value, such as employee name or number.
- Optional parameter fields may be filled in by a viewer, or just left blank. Report logic determines if a value is supplied and, if so, uses the value in the report.

Steps for creating an HR report are similar to other reports.

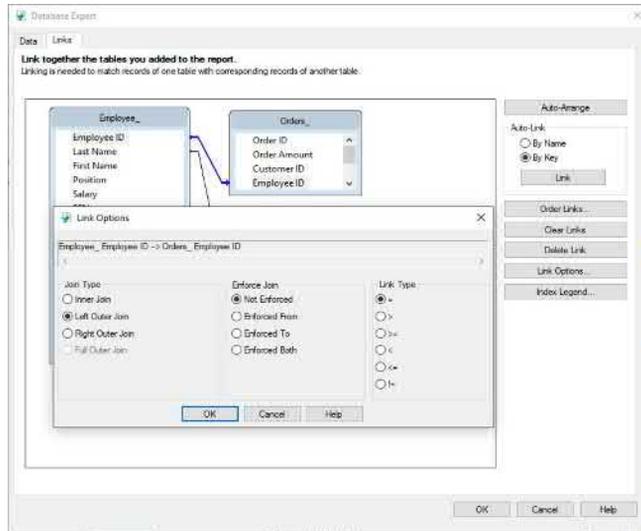
- Connect to a data source. Add and join necessary tables. Other white papers on the [SAP Crystal Reports Guides website](#) discuss details. Other reporting techniques discussed in other white papers on the same site will also be helpful.



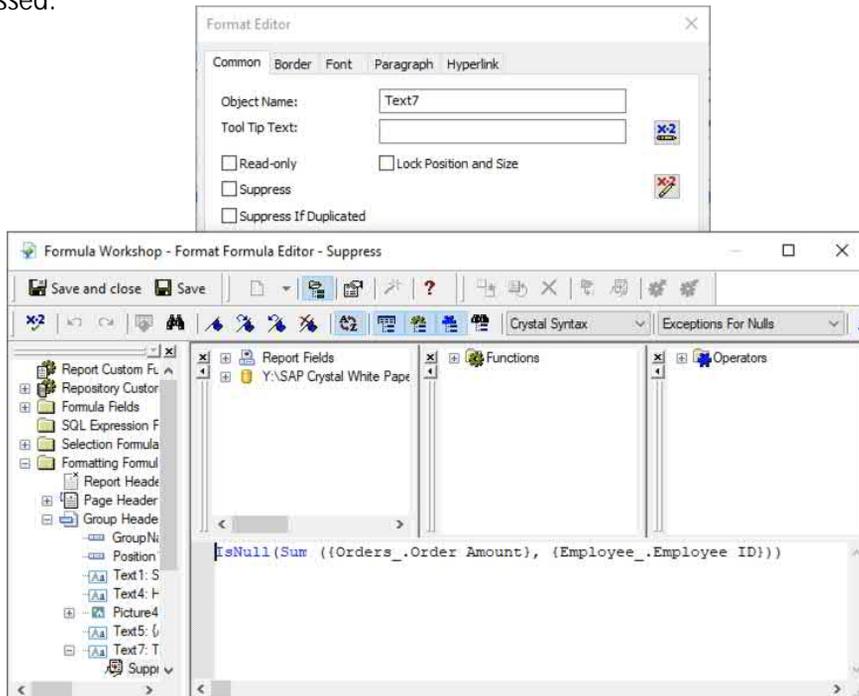
SPECIAL DATABASE JOIN OPTIONS

When initially connecting to tables in the Database Expert, you have several choices regarding join and link types. These options determine whether the data source will return records when fields that are joined don't match.

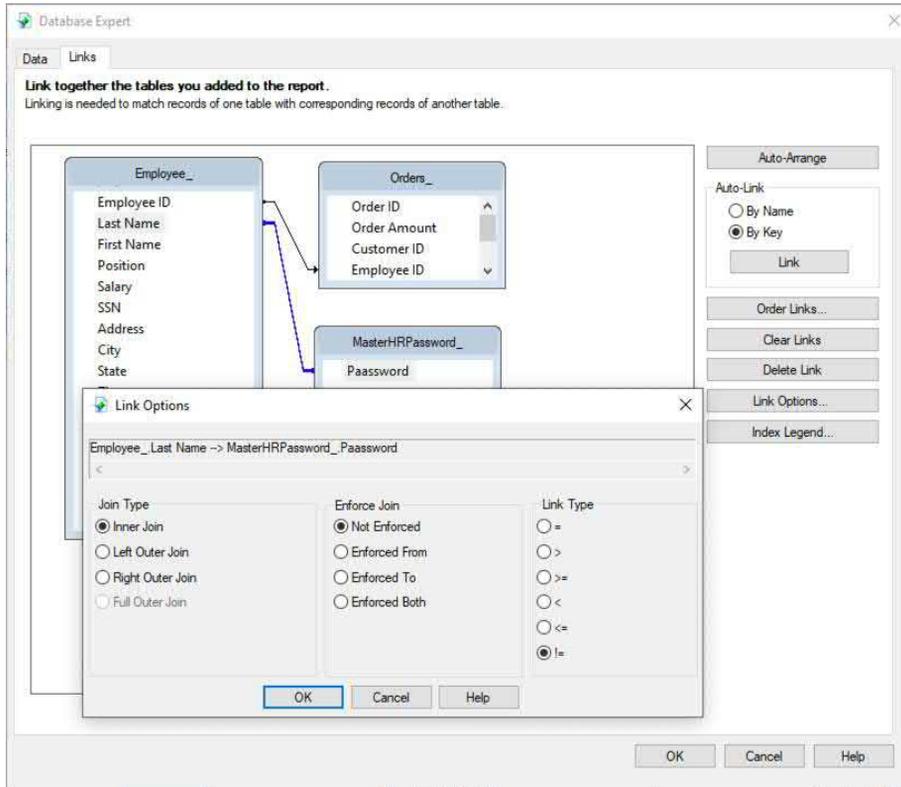
In order to include all employees on the report, whether they have sales or not, the Employee table is joined to the Orders table using a Left Outer Join. This results in all records from the Employee table being returned to the report whether there are matching fields in Orders or not. If there are no matching orders for an employee, all Orders table fields return Null Values.



You may test for null values in a formula to determine, for example, whether a "Total Sales" text object should be suppressed:



If you have tables that need to provide data to the report, but that are not “joinable” to other tables, you may consider a not-equal (!=) link type. Because the single record in the MasterHRPassword table is not designed to join any other tables, simply joining on fields of like data types (a basic relational database join requirement), but specifying a not-equal (!=) link type, will return the single HR password record for every other record in any other table. Therefore, the value from the single HR password record will be available throughout the report.



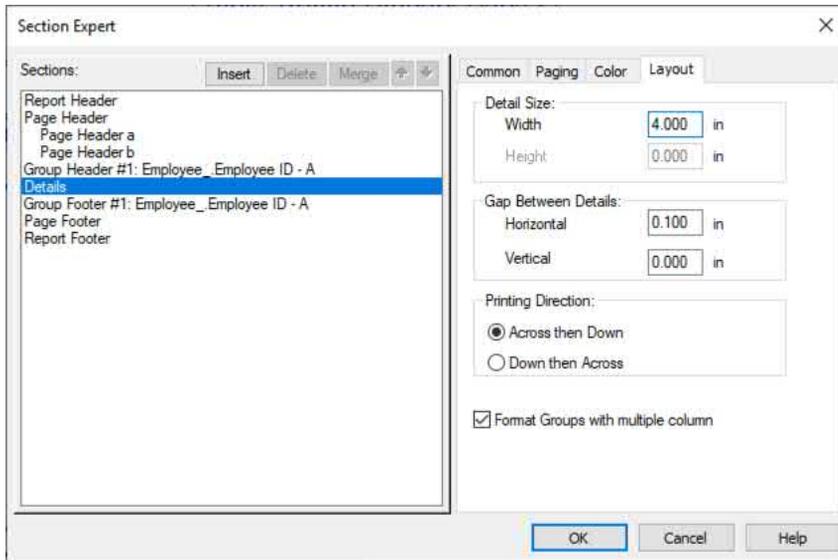
Caution: Use this not-equal technique carefully if the table you are joining to contains multiple records. You may easily create a “many to many” table relationship that distorts totals from other data tables. If this happens, create a record selection formula that results in only a single record being returned from the not-equal table.



CREATING MULTIPLE COLUMNS

Traditional “reports” are often thought of as rows and rows of data spanning a typical 8 ½ by 11 inch page. While a multiple-column report may come to mind when you think of mailing labels or name tags, any data that doesn’t require the full width of a printed page or visual display space may benefit from a multi-column report.

1. RIGHT-CLICK the blue Details section name and select Section Expert from the context menu.
2. With the Details section highlighted, check Format with Multiple Columns. This will add an additional Layout tab to the Section Expert. Click it.



3. Consider the width of the report canvas (this is determined with the File | Page Setup menu option). Set the column width, as well as the horizontal gap value, based on the overall canvas width. This will determine how many columns appear on the report.

4. If you wish associated report groups to also appear within columns, check Format Groups with multiple columns. Otherwise, group headers and footers will span the entire canvas width with only details sections within the groups appearing in columns.

You will benefit from previewing the report and trying various combinations of column settings and canvas size settings until you achieve desired results.



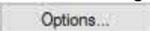
CUSTOMIZING A GROUP NAME FIELD

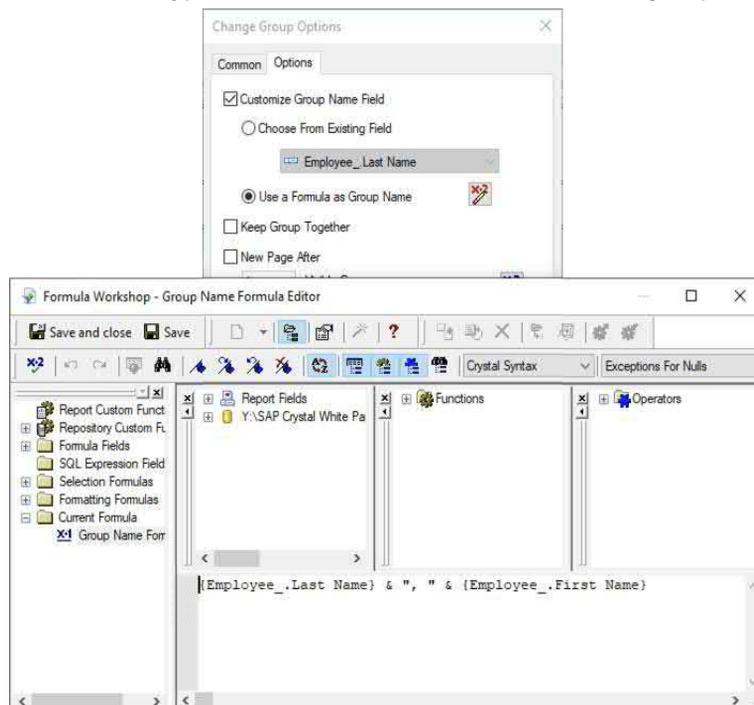
By default, report groups display the Group Name Field in the group header. Initially, the group name field simply displays the database field or formula value the group is based on. For example, if you create a group based on employee last name, the group name field in each group header will display the employee last name for that particular group.

Sometimes you may want to display something different at the beginning of each group. For example, you may be required to use an employee ID numeric value to create report groups (which will keep two separate "John Smith" employees in their own report groups based on their unique employee IDs). However, the employee ID will have little meaning when it appears at the beginning of each group. If, for example, you prefer to group on employee ID, but display employee name, you may either:

- Remove the Group Name Field from the group header and simply drag another database field or formula from the Field Explorer.
- Customize the existing Group Name Field.

To customize the group name field:

1. Click the Group Expert  toolbar button.
2. From the right side of the Group Expert, select the existing group whose name you wish to customize. Click  .
3. The Group Options dialog box will appear. Click the Options tab.
4. Check Customize Group Name Field. Then, either select Choose From Existing Field and select the desired database or formula field from the drop-down list, or select Use a Formula as Group Name, click the conditional formula  button, and type in the desired formula to use as the group name value.



SORTING GROUPS ON A SUMMARY FIELD

By default, SAP Crystal Reports will sort groups by the field the group is based on. The employee ID group field scenario, discussed previously, is an example of why sorting groups on the field they're based on may sometimes prove undesirable – sorting by employee ID will typically be of little use.

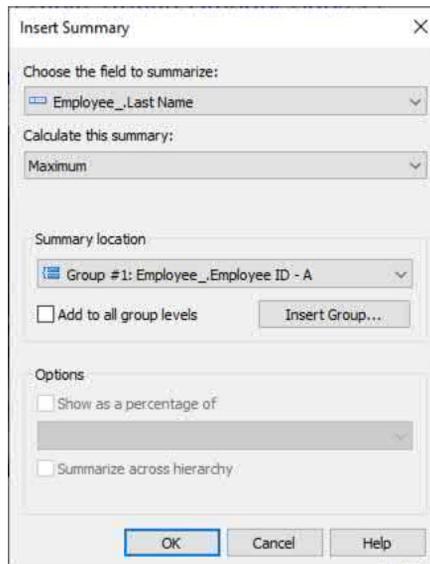
SAP Crystal Reports provides the ability to sort groups on a value other than the field the group is based on. There is a slight trick to consider, though, as it's not practical to simply sort on an alternative database field. Because a particular database field's values may change within the group (for example, if the group is based on Department and various employee last names occur within that department, there will be no single last name to sort on), SAP Crystal Reports will only sort groups based on a Summary Field.

While sorting on a typical summary field, such as total salary within a department group (to see employees in high-to-low salary order), or total sales within a sales manager group (to see a sales manager's top sales people first), may be desirable, there are times you need to use a different type of summary field. In the scenario presented in this HR example, employees are grouped by employee ID. You may wish to sort them in employee last name order, however.

First, make sure the desired summary field has been added to the report:

1. Click the Insert Summary  toolbar button.

2. From the resulting Insert Summary dialog box, select the database field you wish to summarize, the type of summary you wish to create, and the group you wish to place the summary in.



3. The summary will be placed in the associated group footer section.



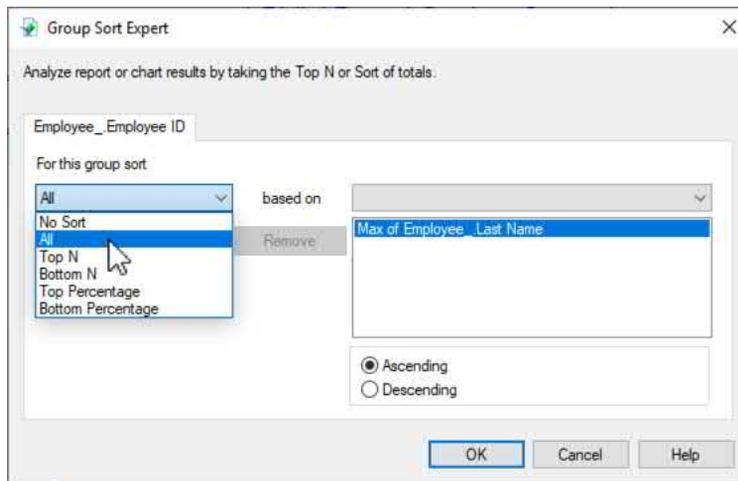
Once the summary has been inserted, you may use it to sort groups.

1. Click the Group Sort Expert  toolbar button. The Group Sort Expert dialog box will appear.

2. If there is more than one group on your report, select the tab for the group you wish to sort.

3. In the drop-down list, choose the type of custom sort you wish to apply for the group (for example, if you only wish to include the top 10 sales person groups, select Top N. If you wish to see all employee groups, but sorted by a summary, select All).

4. Select the desired summary field in the based on list. Select the Ascending or Descending radio button to determine a low-to-high or high-to-low sort.



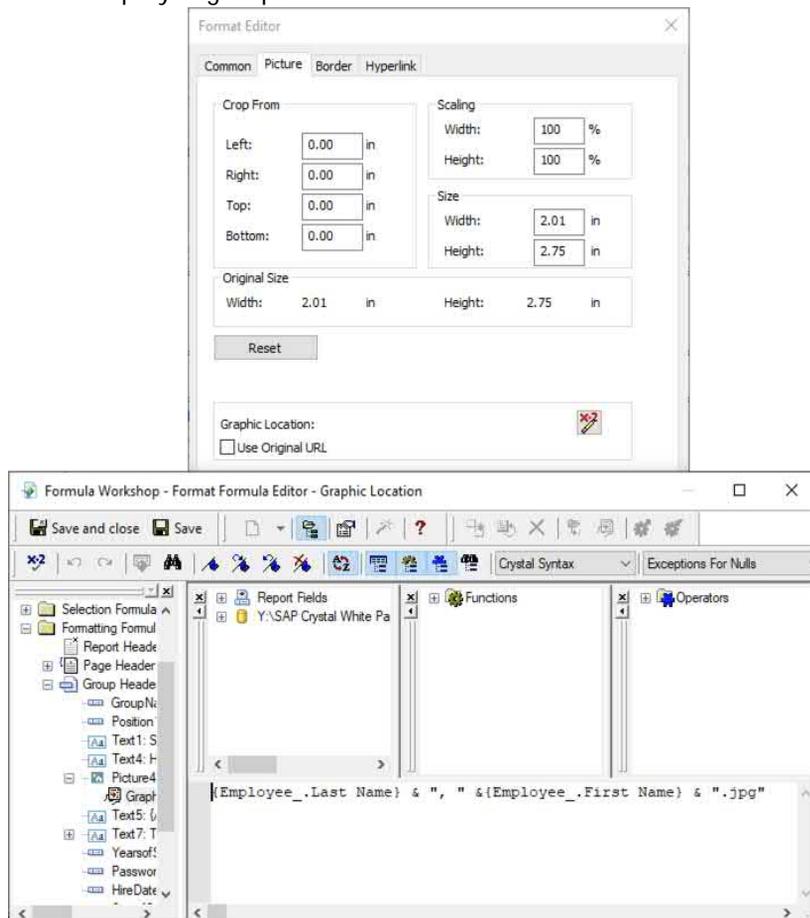
Tip: While the Group Sort Expert makes use of an existing summary appearing in a group header or footer, you are not required to leave the summary on the report once it has been used. For example, you may insert a summary based on Maximum of Employee Last Name to use it in the Group Sort Expert. However, once the groups are properly sorted, you may remove the summary from the report canvas. The Group Sort Expert will continue to reference the summary, even though it no longer appears on the report.

DYNAMIC IMAGE LOCATION

SAP Crystal Reports facilitates visually rich reporting and data visualization by use of one or more graphic images files in any report section. And, this is not limited to just a single image in a particular section (such as a company logo placed in the page header). The filename that an image is based on may be dynamically adjusted as the report progresses, based on any combination of field and report logic. This will permit product images, employee photos, engineering diagrams, and so forth, to be added to repetitive report sections, with each image changing dynamically as the report progresses. The possibilities are limitless.

To make use of a dynamic image:

1. Insert the initial image you wish to use by clicking the Insert Picture  toolbar button. Navigate to the desired folder and select a "default" image file. This image will appear in the design tab, and will appear as the default image if a dynamic image filename doesn't resolve to a valid image file.
2. Drop the image to the desired report section and location. If you wish to adjust some aspect of the image (for example, image size), RIGHT-CLICK on the image and select Format Graphic from the context menu.
3. You may supply a dynamic image filename that will change as the report progresses from the same Format Editor dialog box. Select the Picture tab and click the Graphic Location custom formula  button.
4. Build a formula that results in a unique filename for the desired image. For example, if a local folder exists that contains employee photos named <last name>, <first name>.jpg, you can create a formula that will supply that filename for each employee group.



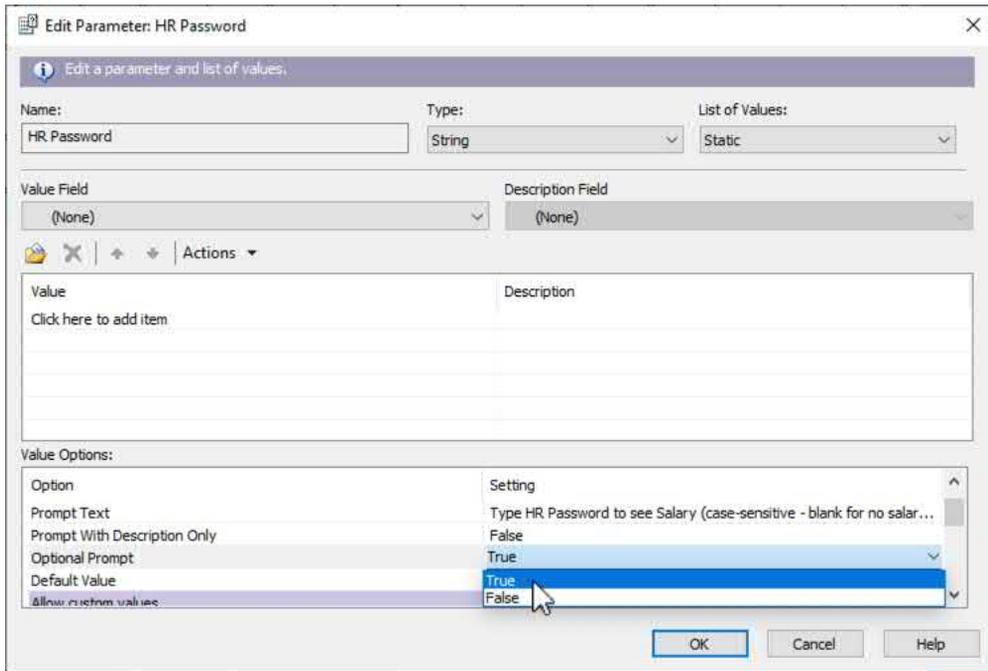
When the report runs, the filename for the image will be evaluated every time the image is encountered. If the dynamic image filename can be found, that image will appear. If not, the “default” image that was initially added to the report will appear.

Tip: SAP Crystal Reports recognizes BLOB (binary large object) data types in most databases that support them, such as Microsoft Access and SQL Server. If your database contains an image within a BLOB field, simply drag the field to the report canvas like any other field to display the database-based image.

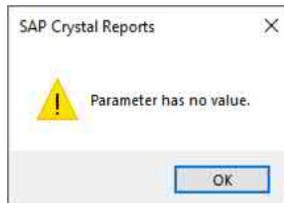


OPTIONAL PARAMETER FIELDS

A parameter field is a custom prompt that you may create to prompt your report viewer for a value when the report is refreshed. Among many properties that you may customize when the parameter field is created or edited is whether the report viewer is required to supply a value when prompted.



If you set a parameter's Optional Prompt property to True, then when the parameter is initially prompted for, the viewer may simply leave it blank and click OK on the parameter dialog box. Optional parameter fields require special attention in most formulas and dialog boxes where they may be used. If, for example, you don't specifically accommodate an optional parameter field in a formula and the viewer leaves the parameter blank, an error will result.



Make use of the SAP Crystal Reports formula language HasValue function to determine if an optional parameter has been supplied a value. If it has, you may then use the supplied value in the remainder of your formula logic. For example, if a viewer is prompted for an optional password and leaves the parameter blank, the report may display non-sensitive salary data in a formula. Otherwise, if a user does supply a value and it matches a password database field, the actual salary will be displayed.

```
If HasValue({?HR Password}) And {?HR Password} = {MasterHRPassword_.Paassword} Then
  "$" & ToText({Employee_.Salary},0)
Else
  "*****"
```



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