

# CALCULATED RESULT DATA TYPE

---

## OVERVIEW

---

This data type is used to populate the result of a formula into a numerical field. Typical examples might be:

1. In a Billable Hours table, a calculation field that multiplies the Worker Hourly Rate of the user in the Done By field times the Number Billable Hours and puts the value into a field called Cost. Note that Done By and Worker Hourly Rate may be linked user fields pulled into the Billable Hours Table.
2. In a Product Quoted table, a field that multiplies the Product Price by the Number of Units and puts it in a Cost field.
3. In the Product Quoted table, another field that multiplies the Cost field by the Company's Discount Rate. The Company field and Company Discount Rate in the Product Quoted table may be linked fields from the Company table.
4. In the Quote Table, a field that takes the Total Cost of all Products Quoted (a calculation on related records data type), multiplies it by the Sales Tax Rate and Populates the Sales Tax, triggering another Calculated Result Field to be updated with the total of the Total Cost of all Products Quoted plus the Sales Tax, in a cascading auto-update.

## FIELD WIZARD

---

### GENERAL TAB

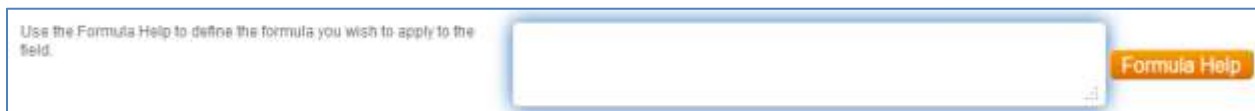
---

This contains the standard options for field label and field name. The underlying data type of the field is floating point.

### OPTIONS TAB

---

The formula block and formula help button function like other formula blocks in the system, but with a larger work area.



Use the Formula Help to define the formula you wish to apply to the field.

Formula Help

The standard "Round data" and calculation options used in other numerical and currency types are included.

Select whether the number of decimal digits in the field is limited. If you set the field to round to a number of digits, user entries that have more decimal digits will be automatically rounded to the specified number of digits. It is the rounded value that will be stored in the database. Use the **Display Tab** to customize the way decimals are displayed.

**Round data:**

- Do not round
- Round to  decimal digits

If you want the value in your output fields to be automatically calculated whenever the fields being used for the calculations are changed, select the first option. Note that this may not be desirable, for instance if you are calculating a billable amount based on an employee's billable rate and the linked fields holding that value are automatically updated. In that case, you may not want already existing billing records to be updated when an employee's billable rate changes. Choosing the second option means that once the calculation field has some value, it will never be overwritten by the system – it will only be updated if a user clicks the Update button.

- Automatically update calculation
- Calculate automatically only if the field has no value

All calculation output fields will have an Update button next to them to enable manual recalculation.

A Null value handling section has been added for this data type. If the Null value handling option is set to “Treat null values as 0”, then the calculated field will calculate even if some of the underlying fields are empty, applying a 0 value to those fields. If it is set to the default value of “Don’t calculate until all fields have a non-null value,” then it will not calculate at all if any of the fields have a null value, and as soon as the final field is given a value, the calculation will run.

If the formula fields have a null value, you can define whether the calculated field should be given any value or not.

**Null value handling**

- Treat null values as 0
- Don't calculate until all fields have a non-null value

When using the option to “Treat null values as 0,” situations may arise in which a “divide by 0” error occurs. This error can be avoided by using the following type of formula construction:

```
$calculated_number_of_sent_emails == 0 ? 0 : (100 * $number_of_bounced_emails / $calculated_number_of_sent_emails)
```

In this case, the syntax reads: “if the value of the first field is 0, return a 0 in the Calculated Result field. Otherwise, apply the formula that follows the colon. We will be adding an option to ignore divide by 0 errors in the future, but in the meantime, for situations that require it, the above syntax will give the desired result.

## PERMISSIONS TAB

Fields of this data type are not editable by users, and the display type is always view only, regardless of group permissions. A user does not need edit permissions for the formula to update the field. This behavior is consistent with the permissions used for other data types that have default values.

General	Options	Permissions	Display
<input type="button" value="Back"/> <input type="button" value="Next"/> <input type="button" value="Finish"/> <input type="button" value="Cancel"/>			
<p>The selected groups will be able to see the field when viewing <b>Products Quoted</b> that they created or that were created on their behalf. The other groups will not see the field at all.</p>		<p>Allow group to view the field in their own <b>Products Quoted</b>:</p> <div style="border: 1px solid gray; padding: 2px;">       admin        adminimport        Anonymous        Contract Creator     </div>	
<p>The selected groups will be able to see the field when viewing other people's <b>Products Quoted</b>. The other groups will not see the field at all.</p>		<p>Allow group to view the field in others' <b>Products Quoted</b>:</p> <div style="border: 1px solid gray; padding: 2px;">       admin        adminimport        Anonymous        Contract Creator     </div>	

## DISPLAY TAB

The display tab for the calculated result has the same basic options as for the Calculation on multiple linked records data type with a few minor changes:

- The “size of the input box” option is eliminated, since this is a view only field and will show as many characters as needed.
- Users will have the choice of displaying a currency or percentage symbol with the field.

<p>Type in a currency symbol or HTML string that will be displayed in reports and tables next to the number. Choose where to position this symbol. To set up rounding, switch to the <b>Rules</b> tab.</p>	<p>Currency or percentage symbol</p> <p><input type="radio"/> None</p> <p><input checked="" type="radio"/> \$</p> <p>Display it</p> <p><input checked="" type="radio"/> before the number</p> <p><input type="radio"/> after the number</p>
--	---

- No button to manually update the calculation. When a record is being edited and fields used in a calculation in the current record are modified, the calculation is updated immediately.