

Field Calculator

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Installation and Usage

Field Calculator provides a full-feature “calculator” that uses numeric constants and the contents of fields from ACT!2005 or ACT!2006 records to perform simple or complex calculations, and save the results into an ACT! field.

Field Calculator can be used either as a trigger or as a custom command. It can reference fields on the current Contact record, the current Group record, and the current Company record. Any combination of fields can be used, along with “plain ol’ numbers” to perform mathematical functions, including addition, subtraction, multiplication, division, exponentiation, trig functions and more.

Installation

1. Shut down all running programs
2. Run **Install_FieldCalculator.exe**
3. Follow the instructions on the screen. Restart your computer if prompted to do so.

This will create (if necessary) the \TNHG subfolder within the folder that Windows “knows” as the “Program Files” folder – usually c:\Program Files. It will create the \TNHG\FieldCalculator subfolder, and install **FieldCalculatorTrigger.exe**, and other supporting files, into that folder. The installation process will also copy into the \ACT\Act for Win 7\Plugins and into the \ACT\Act for Windows\Plugins subfolders (within that same “Program Files” folder) the supporting files necessary to operate within ACT!2005 and ACT!2006.

Usage

The command to execute **Field Calculator** consists of the entire path-and-filename of the Field Calculator program, followed by a “command’ or “argument string”. Please note that if there are any “blanks” in the path-and-filename, then it must be enclosed in “quotes” – Windows treats the blank as a

“terminator”, and the quotes are necessary to tell Windows that the string continues past the blank.

The Program Name

If the path-and-filename contains any blanks (such as `c:\program files\tnhg...`), then that entire path-and-filename must be enclosed in quotes, such as:

```
"C:\program files\tnhg\FieldCalculatorTrigger.exe"
```

The Command String

The “command string” consists of entries that start with a “question mark”, followed by a single letter, and “equal sign” and then more information. For example:

```
?V=T
```

```
?A=<C\User1>=(<C\User5> * <C\User2>) / 100
```

```
?F=S:\Triggers\PercentComplete.txt
```

Each “Question mark-Letter-Equals” string is used to tell Field Calculator a specific detail of its operation:

?V= indicates whether or not you want to view the Field Calculator window while it is performing its calculations.

- **?V=T** indicates that you DO want to see the window, and that you will need to click the [OK] button on that window when the calculation is complete.
- **?V=F** indicates that you do NOT want to see the window. This is the default value, and if you don't want to see the window, you can leave out this entire **?V=** “argument”

?W= indicates whether or not you want Field Calculator to wait until its finished performing the calculation in the algorithm before allowing another process to begin.

- **?W=T** indicates that you DO want to Field Calculator to wait. You would usually on use this when a series of calculations must be performed IN SEQUENCE to produce correct results. If multiple

algorithms are to be performed, but the second algorithm doesn't rely on the results of the first, then the first doesn't need to WAIT. The last algorithm in a sequence never needs to wait.

- ?W=F indicates that you do NOT want Field Calculator to wait. This is the default value, and if you don't want Field Calculator to wait, you can leave out this entire ?W= "argument"
-

?A= indicates a algorithm to be computed. The name of the field to hold the results comes first, followed by the "equals" sign, followed by the other fields and factors to be used in computing the results. This algorithm is subject to all the "standard" math restrictions and rules, such as precedence of operation, parenthetical override of those precedence, etc. For example

?A=<C:User4>=<A:User1>*<C:User2>+<G:User6>*<C:User5>

will produce different results than

?A=<C:User4>=<A:User1>*(<C:User2>+<G:User6>) *<C:User5>

Some points to remember when constructing your list:

- Each fieldname is enclosed in "carets" < > similar to what you'll see in mail-merge templates.
- Each fieldname includes as the first letter an indication of which record "type" is used as the source of that field. A indicates the Company record, C indicates the Contact record, and G indicates the Group record. The record type is separated from the fieldname by a colon, ie <A:Discount> refers to the Discount field on the Company record.
- The RESULT field goes first, followed by the equal-sign, followed by the algorithm. Think "this field COMES FROM that equation".
- Available operators include:
 - + : addition
 - - : subtraction
 - * : multiplication
 - / : division
 - ^ : exponentiation
 - exp|log|log10|abs|sqr|sqrt|sin|cos|tan|asin|acos|atan : trig functions
 - min|max : minimum and maximum
 - () : parenthesis to group and order operation

?F= indicates that the algorithm is to be read from a file instead of being included in the trigger command itself. This can be very handy if your algorithm is really long, or if it changes frequently, or if you'd rather use a text editor to

establish or maintain your algorithm. When you use the ?F= argument, the entire-path-and-filename follows the equal-sign. So, for example, you might use
`?F=S:\ACT\Common\Triggers\CalcGrossAmt.txt`

if your algorithm is in the `CalcGrossAmt.txt` file, in the subfolder `\ACT\Common\Triggers` in the shared folder `S:`. The contents of this file should contain ONLY the algorithm; it should NOT include ?A= or ?F=.

The Batch File

The version of ACT! in commercial release at the time of this writing does not allow a trigger to include a “command string” or “argument list”, like the one that tells Field Calculator how to operate. Therefore, the trigger definition must be placed in a “DOS .bat file”, and that file used as the trigger definition on the ACT! field. When the .bat file “runs”, a DOS window will appear on the screen, showing the commands included in the .bat file and waiting for the commands to finish. This can be somewhat disconcerting to users, so you might want to include a command to hide this window. (A utility is provided in the `\TNHG` folder, in case you need one. Its name is `ConsoleTool.exe`, and it uses the /hide “switch” to tell DOS to hide the window. An example of its use is included below.)

As an example, you might use Notepad (or any other text editor) to create a file that contains the following lines:

```
"C:\program files\TNHG\ConsoleTool.exe" /hide
"C:\program files\TNHG\FieldCalculator\FieldCalculatorTrigger.exe" _
?A=<C: AmtDue>=<C: Gross Amt> * ( 1 - <A: Discount>) * _
(1+<G: Sales Tax>) ?V=T
```

(There are really only two lines in this example but the page isn't wide enough to show the entire second line on a line by itself. The underscores `_` are not really part of the line – they are there only to indicate that the REAL line continues on the next “text line”.)

The above example uses the `ConsoleTool` to hide the DOS window (`/hide`), then runs the Field Calculator program (`FieldCalculatorTrigger.exe`), shows the window while it operates (`?V=T`), and calculates the Contact record `AmtDue` field, by applying the Company discount to the Contact `Gross Amt` and then applying `Sales Tax` from the Group record.

If you save this file as

`FCGrossAmt.bat`

In the `s:\act\common` folder, then your trigger would be
`s:\act\common\FCGrossAmt.bat`

Another quick example:

If the `f:\triggers\FCProfit.bat` file contains

```
"C:\program files\tnhg\consoletool.exe" /hide  
"C:\program files\tnhg\FieldCalculator\FieldCalculatorTrigger.exe" _  
?A= <C:Profit> = <C:Amount> - <C:Cost>
```

And the trigger is set to

```
F:\triggers\FCProfit.bat
```

Then the value in the Cost field on the Contact record is subtracted from the value in the Amount field on the Contact record and results is stored into the Profit field on the Contact record. The user will not have to look at either the DOS window or the Field Calculator window while the field values are read, calculated and stored.

(Additional samples are provided in the `\TNHG\FieldCalculator` folder.)