

Performance Optimization Story

PACS (ralph.24u.cz)

 PACS

Parker Hannifin Corporation

Filtration Group

Task Inbox

My open tasks 4

All open tasks 278

Unassigned tasks 230

Tasks on hold 34

Closed tasks 0

Function ^	Part number ^	Part description ^	Part status ^	Order value ^	Business Unit ^	Process time ^
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
OP	SN-50-3333-24-0040	Pump	New	\$0.00	CGGC	1 months, 5 days, 2 hours
OP	make		New	\$0.00	AGS	1 months, 28 days, 0 hours
SC	purr			\$0.00	AGS	1 months, 28 days, 0 hours
OP	makee			\$0.00	AGS	1 months, 28 days, 0 hours

PACS (Part Add Change System)

A tracking system for **managing part requests, approvals, and order processes** across customer service, engineering, operations, and supply chain, ensuring each step is completed in sequence from lower-level parts to top-level parts.

PACS (ralph.24u.cz)

PACS

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My open tasks **4** All open tasks **278** Unassigned tasks **230** Tasks on hold **34** Closed tasks **0**

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OP	SN-50-3333-24-0040	Pump	New	\$0.00	CGGC	1 months, 5 days, 2 hours
OP	make		New	\$0.00	AGS	1 months, 28 days, 0 hours

Top 5 longest scripts based on total time

Script	Server		Client		All Together	
	Time	Instances	Time	Instances	Time	Instances
Startup	03:48:40	1932	00:06:56	28	03:55:36	1960
SS EMAILQUE Send e-mails	00:43:14	1864			00:43:14	1864
TASK Filter (filter)	00:02:58	1932	00:00:26	99	00:03:24	2031
TASK Go to overview and filter (filter)	00:02:11	1932	00:00:29	54	00:02:41	1986
Set statup globals	00:01:03	1932			00:01:56	17
Refresh window			00:01:46	21		
TASK Process create new task (json)			00:00:18	12		

Slow per user experience

Picked for optimization by FM Bench

Top 5 longest scripts based on average time

Script	Server		Client		All Together	
	Time	Instances	Time	Instances	Time	Instances
Startup	7.102s	1932	14.884s	28	7.213s	1960
SS EMAILQUE Send e-mails	1.392s	1864				
SS EMAILQUE Delete sent e-mails	0.092s	68				
TASK Go to overview and filter (filter)	0.068s	1932				
Set statup globals	0.033s	1932				
Refresh window			5.069s	21	5.069s	21
TASK Open choose customer			4.021s	3	4.021s	3
TASK Process create new task (json)			1.574s	12	1.574s	12
TASK Customer Filter			1.129s	3	1.129s	3

First Round of Discovery

- 28 client sessions too low - data collected from only 3 users
- Startup performing tasks not needed for server-side sessions
- Scripts perceived as slow were actually taking less than a second to execute
 - **Perceived performance** affected by **layout rendering after** the Filter scripts

Measuring Layout Rendering



```
1 Set Variable [ $~~~~~ ; Value: TimeLog ( "start" ; "" ) ]
2 Go to Layout [ "scpt_tasks" (TASK) ; Animation: None ]
3 Perform Script [ "TASK Filter (filter)" ; Specified: From list ; Parameter: #P ( 1 ) ]
4 Go to Layout [ "Tasks Overview" (TASK) ; Animation: None ]
5 Go to Record/Request/Page [ First ]
6 Execute FileMaker Data API [ Select ; Target: $timelog_response ; TimeLogDapiJson ( "exit" ; "end" ) ]
7 Set Variable [ $timelog ; Value: "" ]
8 Set Variable [ $$layout_instance_id ; Value: TimeLogInstanceID ]
9 Set Variable [ $~~~~~ ; Value: TimeLogCustom ( "start" ; Get ( ScriptName ) ; "Layout" ; Get ( LayoutName ) ; $$layout_instance_id ) ]
10 Set Variable [ $$timelog_layout_start_time ; Value: Get ( CurrentTimeUTCMicroseconds ) ] ⚙️
11 Set Variable [ $$timelog ; Value: $timelog ]
12 Install OnTimer Script [ "TimeLog Layout Ontimer" ; Interval: .001 ] ⚙️
```

Measuring Layout Rendering



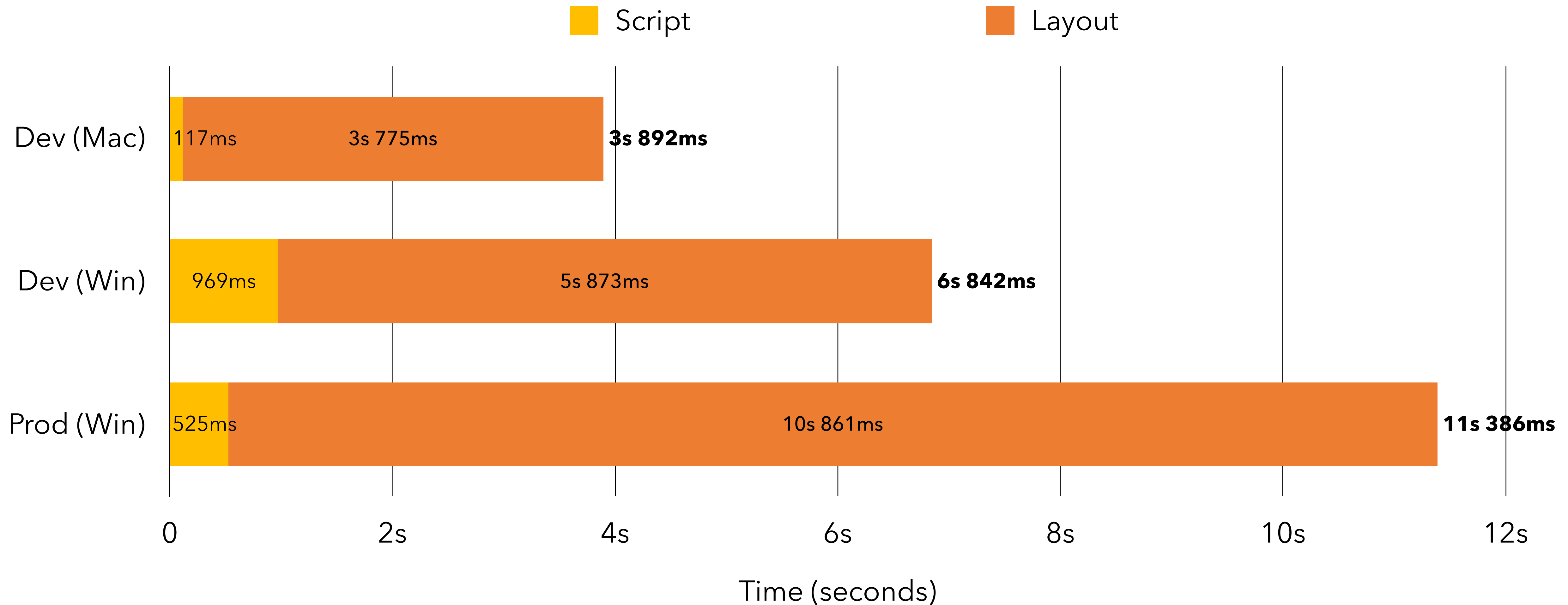
The image shows two overlapping FileMaker script editor windows. The top window is titled "Edit Script 'TASK Go to overview and filter (filter)' (PACS (ralph.24u.cz))" and contains the following code:

```
1 Set Variable [ $~~~~~ ; Value: TimeLog ( "start" ; "" ) ]
2 Go to Layout [ "scpt_tasks" (TASK) ; Animation: None ]
3 Perform Script [ "TASK Filter (filter)" ; Specified: From list ; Parameter: #P ( 1 ) ]
4 Go to Layout [ "Tasks Overview" (TASK) ; Animation: None ]
5 Go to Record/Request/Page [ First ]
6 Execute FileMaker Data API [ Select ; Target: $timelog_response ; TimeLogDapiJson ( "exit" ; "end" ) ]
```

The bottom window is titled "Edit Script 'TimeLog Layout Ontimer' (PACS (ralph.24u.cz))" and contains the following code:

```
1 Install OnTimer Script [ ]
2 Set Variable [ $instance_id ; Value: $$layout_instance_id ]
3 Set Variable [ $$layout_instance_id ; Value: "" ]
4 Set Variable [ $timelog ; Value: $$timelog ]
5 Set Variable [ $time ; Value: Round ( ( Get ( CurrentTimeUTCMicroseconds ) - $$timelog_layout_start_time - 1000 ) / 1000 ; 0 ) & " ms" ]
6 Execute FileMaker Data API [ Select ; Target: $timelog_response ; TimeLogDapiJsonCustom ( "exit" ; $time ; "Layout" ; Get ( LayoutName ) ; $instance_id ) ]
7 // Show Custom Dialog [ $time ]
```

TASK Filter Script + Layout Rendering



Why It Was Slow

PACS (ralph.24u.cz)

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Function ^	Part number ^	Part description ^	Part status ^	Order value ^	Business Unit ^	Process time ^
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
OP	SN-50-3333-24-0040	Pump	New	\$0.00	CGGC	1 months, 3 days, 6 hours
OP	make		New	\$0.00	AGS	1 months, 26 days, 4 hours
SC	purr			\$0.00	AGS	1 months, 26 days, 4 hours
OP	makee			\$0.00	AGS	1 months, 26 days, 4 hours

Why It Was Slow

PACS (ralph.24u.cz)
Manage Database for "PACS"

Tables Fields Relationships

Table: tasks 106 fields View by: custom order

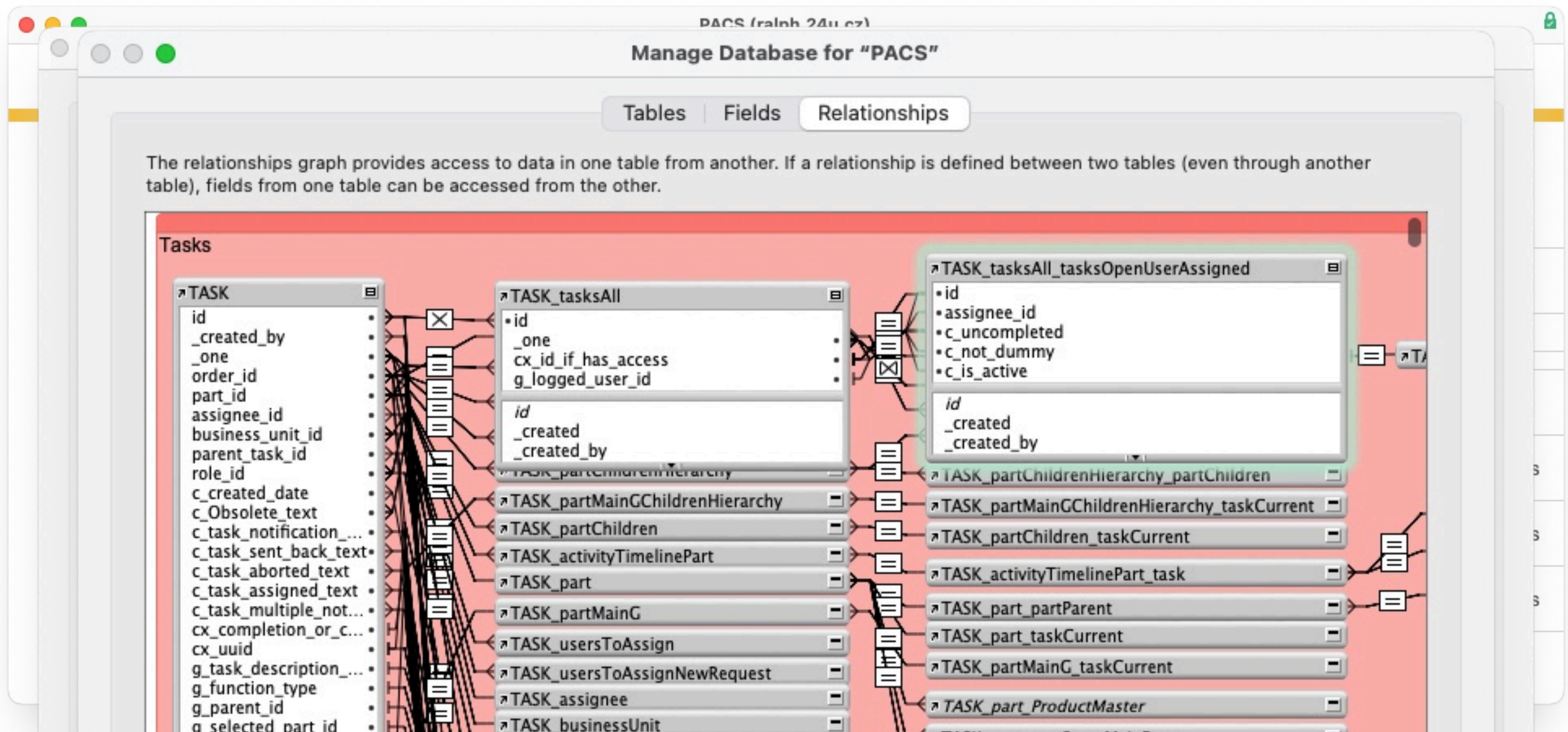
Field Name	Type	Options / Comments (Click to toggle)
cx_has_access	Calculation - Number	Unstored, from TASK, = (ValueInList (SETT::g_logged_user_roles_ids ; role_id) and (ValueIn...
cx_id_if_has_access	Calculation - Number	Unstored, from TASK, = If (cx_has_access ; id)
cx_badge_all_open_tasks	Calculation - Number	Unstored, from TASK, = 0+Count (TASK_tasksAll_tasksOpenAll::id)
cx_badge_unassigned_open_ta...	Calculation - Number	Unstored, from TASK, = 0+Count (TASK_tasksAll_tasksOpenUnassigned::id)
cx_badge_user_assigned_open...	Calculation - Number	Unstored, from TASK, = 0+Count (TASK_tasksAll_tasksOpenUserAssigned::id)
cx_badge_to_be_completed_ta...	Calculation - Number	Unstored, from TASK, = 0+Count (TASK_tasksAll_tasksToBeCompleted::id)
cx_badge_all_closed_tasks	Calculation - Number	Unstored, from TASK, = 0+Count (TASK_tasksAll_tasksClosedAll_tasksNewerThan30days::id)
cx_function_name	Calculation - Text	Unstored, from TASK, = TASK_functions::name
cx_function_name_part_dashbo...	Calculation - Text	Unstored, from TASK, = If (not c_is_complete ; TASK_functions::name)
cx_process_time_days	Calculation - Number	Unstored, from TASK, = 0+Round (cx_process_time_hours/SETT::g_daily_working_hours ; 1)
cx_function_type	Calculation - Text	Unstored, from TASK, = TASK_functions::type
cx_business_unit_code	Calculation - Text	Unstored, from TASK, = TASK_businessUnit::code
cx_part_numbers_values	Calculation - Text	Unstored, from TASK, = Substitute (List (TASK_part::part_number) ; "¶" ; ", ")

Field Name: Type: Calculation Options...

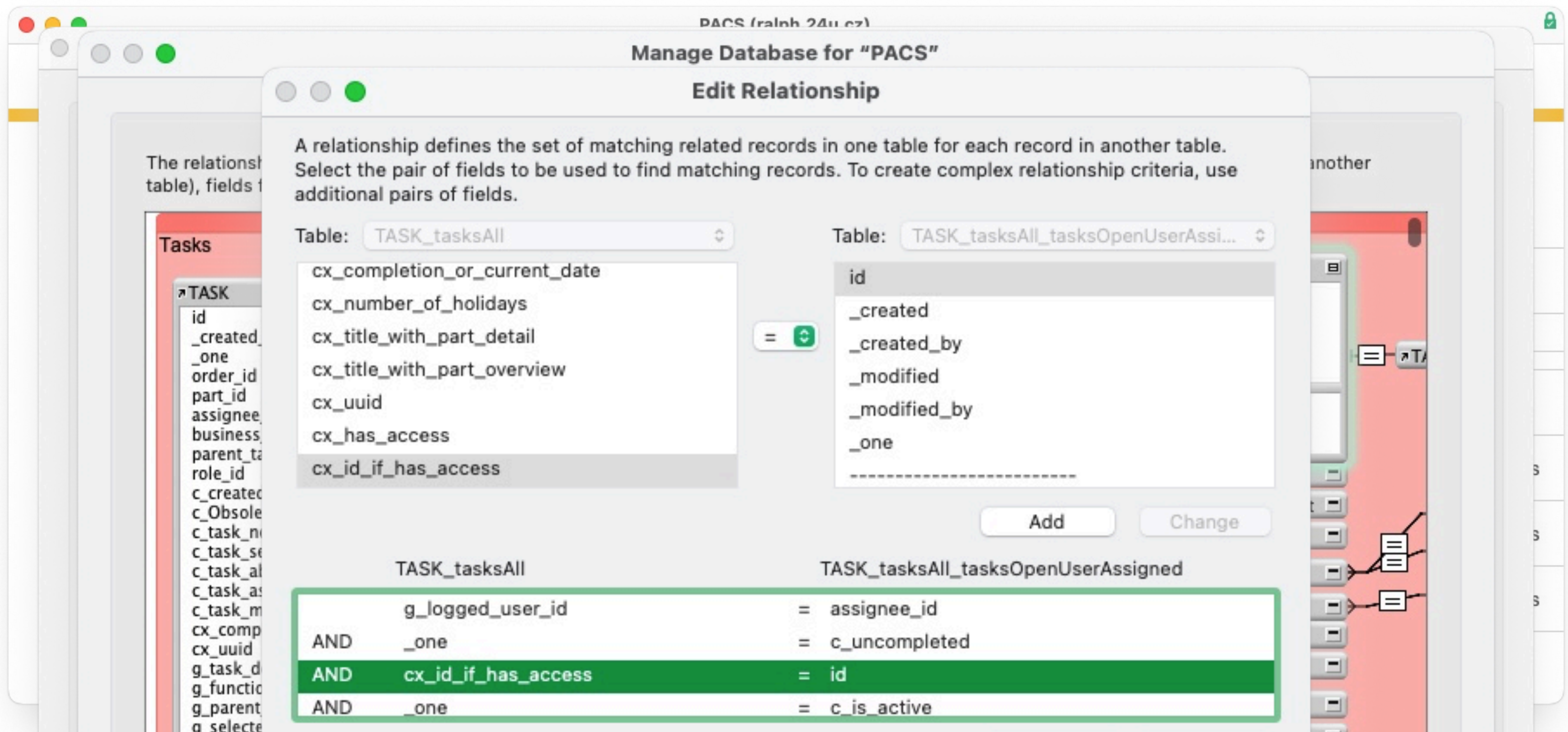
Comment:

Create Change Duplicate Delete Copy Paste

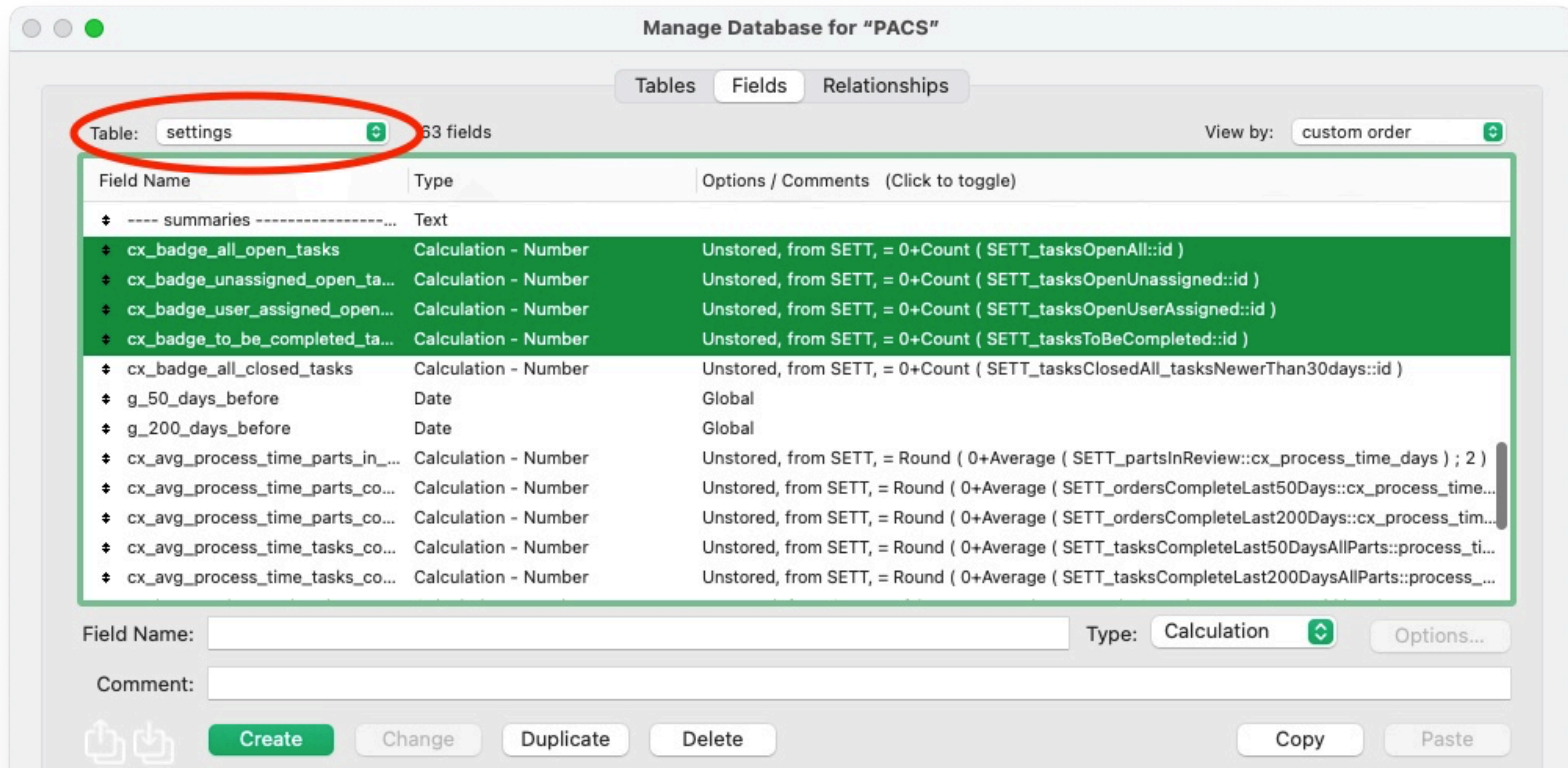
Why It Was Slow



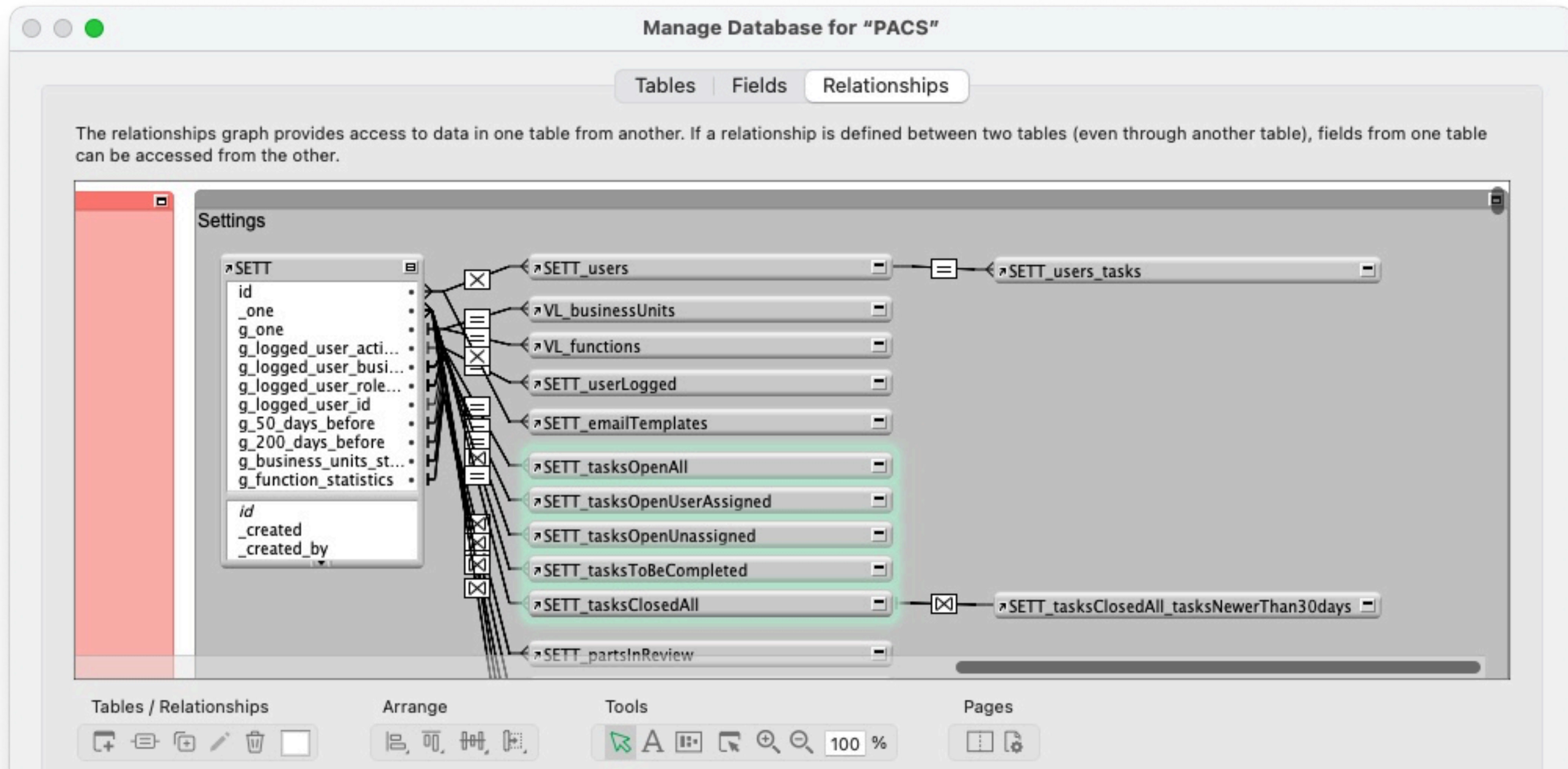
Why It Was Slow



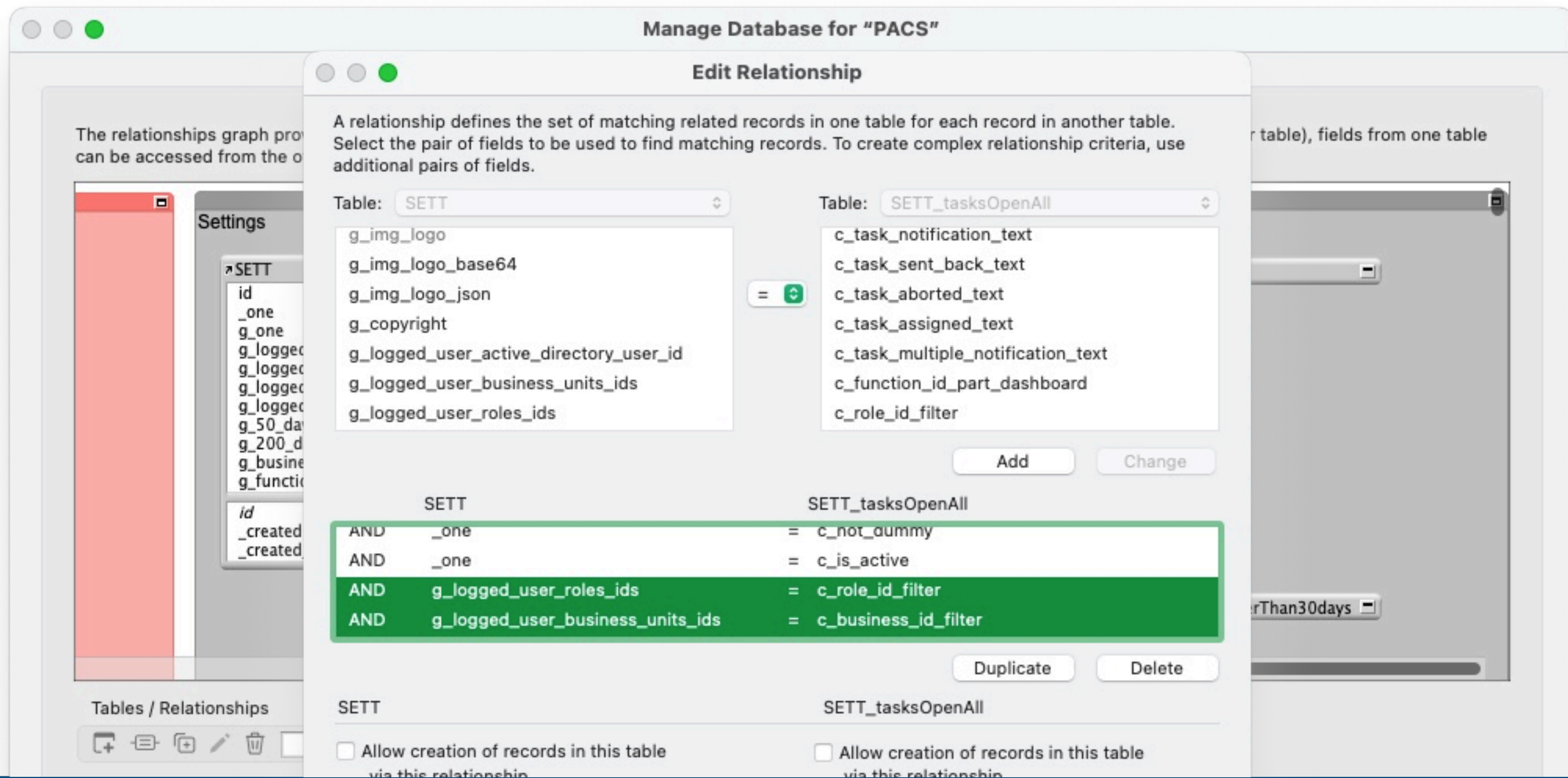
How We Optimized It



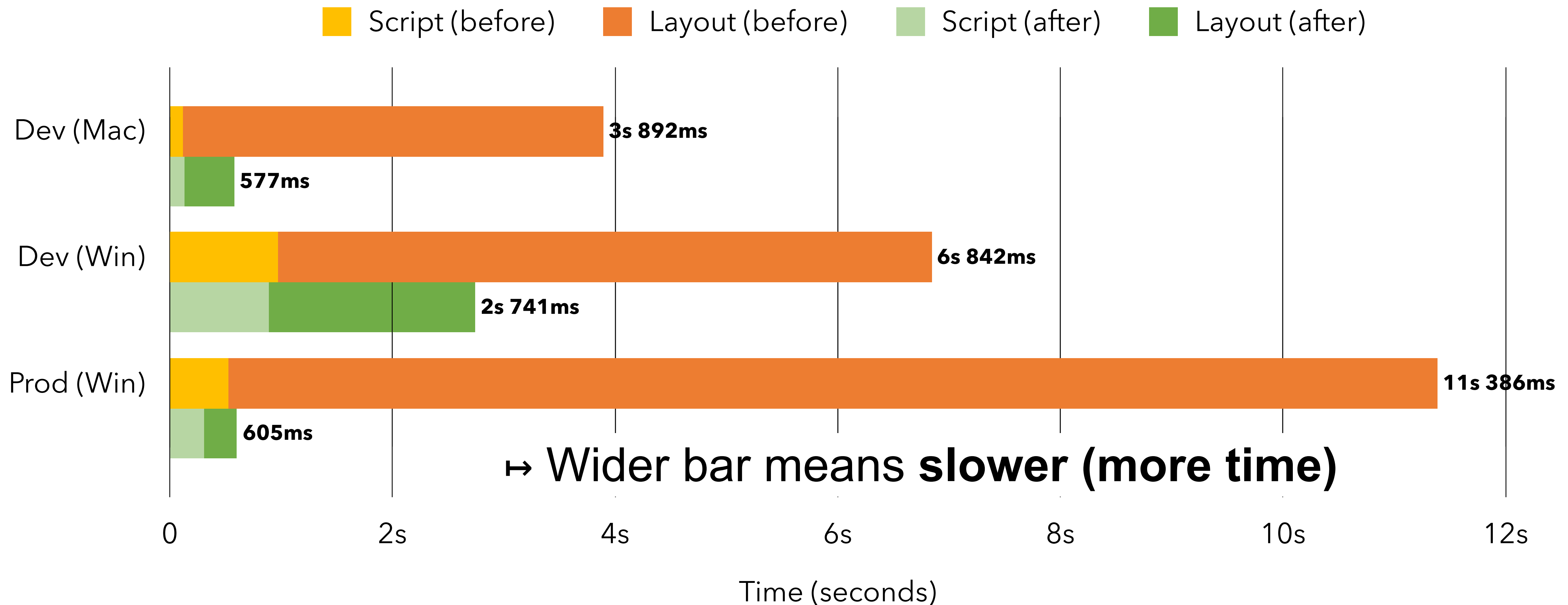
How We Optimized It



How We Optimized It



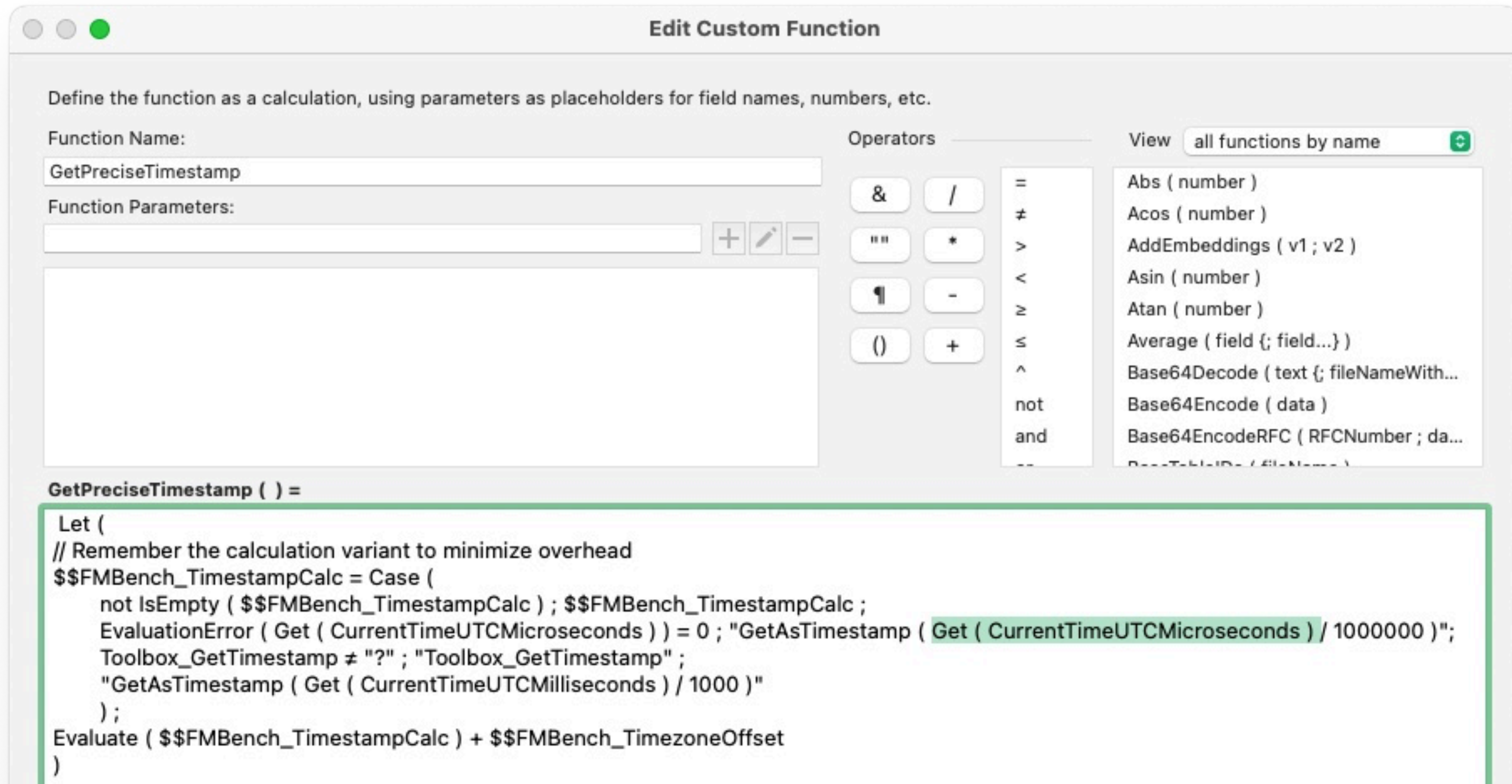
TASK Filter Script + Layout Rendering (Optimized)



Takeaways

- Always consider both measured and perceived performance
- FileMaker Pro still mostly single-threaded
 - Layout rendering time can be measured accurately using OnTimer script trigger
- No need to over-optimize

New Version of FM Bench



New Version of FM Bench

The screenshot displays the FMBench_Analyzer application interface. The top menu bar includes options like Dashboard, Catalogs, Databases, Schema, Layouts, Calculations, Scripts, Menus, Security, Find, Show All, Export, and AI. The main window shows a list of scripts, with 'Paused Script' selected. A red arrow points from the 'Paused Script' entry in the list to the 'Paused Script' entry in the BottleNeck Finder window.

BOTTLENECK FINDER

YOUR FILTER: From: 9/3/2025 0:00:00 To: 9/3/2025 23:59:59

Object / Instance	Instances	Average Time	Total Time	
<input checked="" type="checkbox"/> Paused Script Script from FMBench_Detective	3	00:00:00.219192	00:00:00.657571	i
09/03/2025 10:26:23.126520 admin from 192.168.0.154, 192.168.0.156, 10.0.4.3 using Pro 22.0.1 English Mac (Intel) 15.6 Czech			00:00:00.225430	SBR
09/03/2025 10:31:29.245190 admin from 192.168.0.154, 192.168.0.156, 10.0.4.3 using Pro 22.0.1 English Mac (Intel) 15.6 Czech			00:00:00.221409	SBR
09/03/2025 10:31:48.008481 admin from 192.168.0.154, 192.168.0.156, 10.0.4.3 using Pro 22.0.1 English Mac (Intel) 15.6 Czech			00:00:00.210737	SBR
<input type="checkbox"/> Script With Loop Script from FMBench_Detective	2	00:00:00.098960	00:00:00.197921	i
09/03/2025 10:26:42.980298 admin from 192.168.0.154, 192.168.0.156, 10.0.4.3 using Pro 22.0.1 English Mac (Intel) 15.6 Czech			00:00:00.097422	SBR
09/03/2025 10:32:04.146286 admin from 192.168.0.154, 192.168.0.156, 10.0.4.3 using Pro 22.0.1 English Mac (Intel) 15.6 Czech			00:00:00.100499	SBR
<input type="checkbox"/> Hello World Script from FMBench_Detective	2	00:00:00.084343	00:00:00.168687	i
09/03/2025 10:26:18.959960 admin from 192.168.0.154, 192.168.0.156, 10.0.4.3 using Pro 22.0.1 English Mac (Intel) 15.6 Czech			00:00:00.085740	SBR
09/03/2025 10:31:58.424831 admin from 192.168.0.154, 192.168.0.156, 10.0.4.3 using Pro 22.0.1 English Mac (Intel) 15.6 Czech			00:00:00.082947	SBR
<input type="checkbox"/> Open Logo Subscript Script from FMBench_Detective	1	00:00:00.148555	00:00:00.148555	i
09/03/2025 10:26:28.187358 admin from 192.168.0.154, 192.168.0.156, 10.0.4.3 using Pro 22.0.1 English Mac (Intel) 15.6 Czech			00:00:00.148555	SBR
<input type="checkbox"/> Halted Script Script from FMBench_Detective	1	00:00:00.127221	00:00:00.127221	i
09/03/2025 10:26:37.043916 admin from 192.168.0.154, 192.168.0.156, 10.0.4.3 using Pro 22.0.1 English Mac (Intel) 15.6 Czech			00:00:00.127221	SBR
<input type="checkbox"/> Open Logo Script Script from FMBench_Detective	1	00:00:00.091163	00:00:00.091163	i
<input type="checkbox"/> Waiting For Button Script from FMBench_Detective	1	00:00:00.007287	00:00:00.007287	i
09/03/2025 10:26:48.857329 admin from 192.168.0.154, 192.168.0.156, 10.0.4.3 using Pro 22.0.1 English Mac (Intel) 15.6 Czech			00:00:00.007287	SBR
<input type="checkbox"/> RepeatChar Custom Function from FMBench_Detective	4	00:00:00.001380	00:00:00.005522	i
09/03/2025 10:26:28.235131 admin from 192.168.0.154, 192.168.0.156, 10.0.4.3 using Pro 22.0.1 English Mac (Intel) 15.6 Czech			00:00:00.000951	SBR