The OZGrid API Timer Demo

A brief guide   
Version 1.0

Date: 7 Nov 2015

Table of Contents

[Introduction 4](#_Toc434690183)

[Development Environment 5](#_Toc434690184)

[Timer Demo 6](#_Toc434690185)

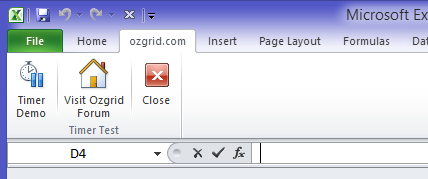
[Visit OzGrid Forum. 8](#_Toc434690186)

## Introduction

This document describes the OZGrid API timer demo workbook.

The workbook demonstrates the use of API based timers. Unlike the standard Excel ‘Application.OnTime’ statement, API based timers continue to work even while a cell is being edited or Excel is otherwise ‘engaged’.

The workbook will insert a new tab in the Excel ribbon when loaded.



The tab contains 3 options:

* Timer Demo – Displays the demo userform
* Visit OzGrid forum – Runs the default browser and navigates to the main OzGrid Excel index page at [www.ozgrid.com/forum](http://www.ozgrid.com/forum)
* Close – Closes the demo workbook.

## Development Environment

The application has been developed using Microsoft Office Excel 2010, (Version 14.0.7128.5000) running under Windows 8.1 Professional, Service Pack 1.

The application runs under 32bit and 64bit versions of Windows with 32bit versions of Microsoft Office.

It will not run in 64 bit versions of Microsoft Office because of changes in that version of Office that make backwards compatibility an issue. No development, or testing, was done using a 64 bit version of Office.

The application has been written for Excel version 2007 and later. It will not work in earlier versions.

### Tested Environments

The applications have been tested (briefly in some cases) in the following versions of Windows & Office. All versions of Office are 32 bit, Windows architecture as mentioned below)

The Windows Windows

Windows XP Service Pack 3 (32 bit)

* Office 2007

Windows 7 Service Pack 1 (6.1.7601) (32 bit & 64 bit)

* Office 2007
* Office 2010

Windows 8.1. (64 bit)

* Office 2007
* Office 2010

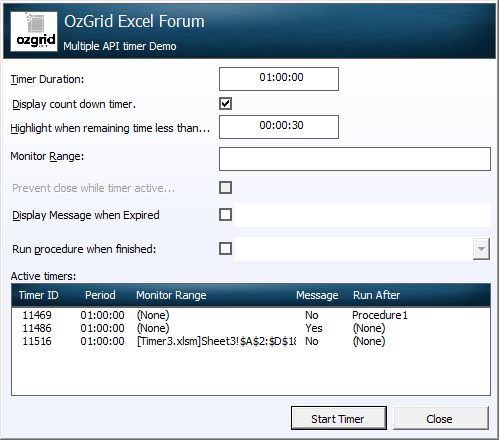
Windows 10 (64 Bit)

* Office 2010
* Office 2013

## Timer Demo

To start the application, click the Timer Demo button on the ozgrid.com tab. This tab is added to the ribbon where the workbook is loaded and will be removed when unloaded.

When selected, the following form will be displayed:



The available options are described on the next page.

| Item | Description |
| --- | --- |
| Timer Duration | Defines how long the timer should run. Times are entered using the standard Excel time notation (hh:mm:ss) such as 00:05:00 for 5 minutes or 01:30:00 for 1.5 hours.  Simple input without any separating colons, such as 2 or 1.3, will be assumed to be 02:00:00 (2 hours) or 01:30:00 (1.5 hours) respectively.  Inputs such as 05:00 will be assumed to be 5 hours. |
| Display the countdown timer | When running, the timer displays a small userform showing the remaining time. Clearing this option will keep the countdown hidden. |
| Highlight when remaining time… | If any time is entered in this box then the timer form will turn red with white text if the counter is less than the time entered.  Input is the same as for the Duration, except whole numbers will be assumed to be seconds. Any whole number will be converted to the appropriate time value. |
| Monitor Range | If any change is made in the worksheet range defined for this option, the timer will reset to its initial value.  To enter a range, simply highlight the cells on the worksheet to monitor. The range address can be entered manually but the complete Excel external range name convention, including workbook and worksheet name, must be used. For example: '[SGBCAPE WAP.xlsx]Actual Capture'!$A$8:$G$19  While each timer can monitor a single contiguous range on 1 worksheet, multiple timers can be set to monitor multiple ranges on the same worksheet.  Timers can be set for any worksheet in any loaded workbook. |
| Prevent close while timer active | If any range is defined, selecting this option will prevent the workbook being unloaded while the timer is active.  If left unselected, then unloading a workbook will automatically kill any timers monitoring that workbook. |
| Display message when finished | If selected, and any message is defined, the message will be displayed when the timer countdown reaches 0 |
| Run Procedure when finished | If selected and any procedure defined, the procedure will run when the timer countdown reaches 0.  The procedure name must be known in advance (it is not possible in VBA to list the available procedures), must be declared as ‘Public’ and be contained in a standard code module. This is the same restriction as for standard Excel Timers. |
| Active timers | The ID number for any active timers will be displayed in this list.    To cancel a timer before it completes its countdown, double click the ID number, You will be prompted if the timer is to be deleted.  If a Timer is monitoring a range on a worksheet and the ‘Prevent Close…’ option is not, then a Timer will also be deleted if the workbook containing that range is closed. Any defined procedure/message for that timer will not run/be displayed. |

## Integrating the Timer into your Project.

The sample workbook contains the following files.

|  |  |  |
| --- | --- | --- |
| Module name | Type | Function |
| clsOZTimer | Class Module | Main timer Class module |
| modCallBacks | Module | Demo only – provides the call back procedures for the demo ribbon |
| modSamples | Module | Demo only – Contains stub procedures for the ‘RunAfter’ parameter. |
| modOZTimer | Module | Code module containing supplementary procedures |
| ThisWorkbook | VBA Document | Code in the Workbook\_BeforeClose procedure |
| ufOZTimer | Form | Timer display |
| ufOZTimerList | Form | Demo Only. The user interface element of the demo. |

The files marked as ‘Demo Only’ are support files for the demonstration and are not required for other projects.

The other files can be added to your project simply by loading both the Timer Demo workbook and your existing project workbook. In the VBA development environment, drag the files clsOZTimer, modOZTimer & ufOZTimer from the demo project to your project.

There is additional code in the Workbook\_BeforeClose event in the ThisWorkBook class module.

This code must either be included in your project or combined with any existing code in the Workbook\_BeforeClose event, as it either:

* Prevents the workbook being closed while any timers are active
* Terminates active timers are terminated when a workbook is closed.

The reason for this is commented in the procedure:

'// Purpose : This workbook CANNOT be closed if any timers are active as Windows will

'// : be calling the TimerProc procedure every time the timer 'clicks'. If the

'// : procedure does not exist in memory then Excel crashes. Simple as that...

‘// : Alternatively, all active timers in the workbook must be terminated

‘// : when the workbook is closed. See the ‘KeepOpen’ property of the Timer

### Coding the Timer

Starting the timer is simply a matter of calling the StartTimer procedure in module modOZTimer.

This takes a number of parameters:

|  |  |  |  |
| --- | --- | --- | --- |
| Parameter | Type | Description | Default Value |
| Duration | Date (Time element only) | How long the timer is to run | 01:00:00 (1 hour) |
| Flag | Date (Time element only) | Timer display will be highlighted if the remaining time is less than the Flag time | 00:05:00 (5 minutes) |
| ShowCountdown | Boolean (True/False) | Defines of the countdown form should be displayed, or not. | True |
| Message | String | Any message to be displayed when the timer expires | Nothing |
| RunAfter | String | The name of any Public Procedure of Function in a standard code module to be executed when the timer expires. | Nothing |
| RangeAddress | String | A valid representation of an Excel Range – this should use the formal Excel External Range Address format.  Example: '[Master.xls]Work\_Order'!G1:H500 | Nothing |
| KeepOpen | Boolean | If True, this option will prevent the workbook being unloaded while a Timer is active. If False, all timers will be terminated if the workbook is closed. | True |
|  |  |  |  |

## Visit OzGrid Forum.

Opens the default browser at the OzGrid forum Index page…