

# **Introduction to magnetic materials in modern technologies**

## **OOMMF code Installation Instruction**

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This set of slides provides support for the installation of a software package that allows one to perform micromagnetic simulations. The «predictive power» of such simulations has been evidenced by many experimental studies combined with corresponding micromagnetic simulations.

The software package considered here is based on the finite-difference method for numerical calculations (which is different from the finite-element method) and supplied by NIST (USA): Object-Oriented MicroMagnetic Framework (OOMMF).

Background on the ITL/NIST micromagnetics public code project

OOMMF is a project in the Applied and Computational Mathematics Division (ACMD) of ITL/NIST, in close cooperation with  $\mu$ MAG, to develop portable, extensible public domain programs and tools for micromagnetics. This code forms a completely functional micromagnetics package, with the additional capability to be extended by other programmers so that people developing new code can build on the OOMMF foundation. OOMMF is written in C++, a widely-available, object-oriented language that can produce programs with good performance and extensibility. For portable user interfaces, we use Tcl/Tk so that OOMMF operates across a wide range of Unix, Windows, and Mac OS X platforms. The main contributors to OOMMF are Mike Donahue and Don Porter.

Taken from: <https://math.nist.gov/oommf/>

Link to the OOMMF tutorial video regarding installing OOMMF:

<https://app.vidgrid.com/view/Z0pYocrlyqPq/?sr=OKBMRP>

- **Mac users will find information for installation from time 1hr 20 minutes in this video.**

# Installation instruction for Windows

Before installing OOMMF software you need to install Tcl programming language in your machine. For installing Tcl, please go to <https://www.tcl-lang.org/> and install Magicspalt from the **latest software release section**.

## Step 1:

Tcl Developer Xchange

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### Welcome to the Tcl Developer Xchange!

Join the many thousands of software developers who are already more productive with help from the **Tcl programming language** and the **Tk graphical user interface toolkit**.

Tcl (Tool Command Language) is a very powerful but easy to learn dynamic programming language, suitable for a very wide range of uses, including web and desktop applications, networking, administration, testing and many more. Open source and business-friendly, Tcl is a mature yet evolving language that is truly cross platform, easily deployed and highly extensible.

Tk is a graphical user interface toolkit that takes developing desktop applications to a higher level than conventional approaches. Tk is the standard GUI not only for Tcl, but for many other dynamic languages, and can produce rich, native applications that run unchanged across Windows, Mac OS X, Linux and more.

► [Learn more](#)

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#### Tcl Conference News

The **27<sup>th</sup> Tcl/Tk Conference** was held Nov 10, 2019 as a virtual event, due to COVID-19.

The **18<sup>th</sup> European Tcl/Tk User Meeting** was canceled due to COVID-19.

[Older conference info](#)

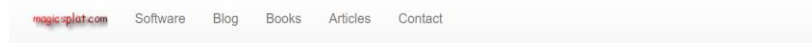
#### Latest Software Releases

[Tcl/Tk 8.6.11](#) [Source](#)  
[Tcl/Tk 8.7a3](#) [Pre-release](#)  
[All Tcl/Tk Downloads](#)

[ActiveTcl](#) [Multi-platform](#)  
[BAWT](#) [Multi-platform](#)  
**[Magicspalt Windows](#)**  
[IronTcl](#) [Windows](#)  
[Tklib 0.7](#) [Feb 9, 2020](#)

Magicspalt

## Step 2:



## Magicplat Tcl/Tk for Windows

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## Introduction

The **Magicplat Tcl/Tk for Windows** distribution is a binary Windows Installer based distribution of Tcl/Tk for Windows systems. It includes commonly used libraries, extensions and development tools.

The current release, version 1.11.1 ([changes](#)), is based on Tcl/Tk 8.6.11 and includes the following packages:

Tcl/Tk 8.6.11, Autoopts 0.6, Awthemes 10.2.0, BContour 1.1, Bezier 1.1, BWidget 1.9.13, CAWT 2.6.0, Canvas3d 1.2.4, Chesschart 0.2, Cmark 1.0, Crimp 0.2, Critcl 3.18.1, Csp 0.1.0, Dgtools 0.3, Dgw 0.3, DiffUtil 0.4.1, Duktape 0.9.0, Ffidi 0.8b0, GRIDPLUS 2.11, Gc\_class 1.0, Hl\_tcl 0.7.4, Img 1.4.12, Incr Tcl 4.2.1, iocp 1.0.9, JBlend 2.1, Mpexpr 1.2, Mkdoc 0.4, Msgpack 2.0, Nacl 1.1, Nsf/nx/XOTcl 2.3, Ooxml 1.5, Parse\_args 0.3.0, Pdf4tcl 0.9.2, Promise 1.1, RBC Toolkit 0.1.1, RI\_http 1.5, RI\_json 0.11.0, Ruff 1.0.5, Scrolldata 2.12, Shtmlview 0.9.1, SQLite 3.34.0 Tarray 1.0.0, Tarray\_ui 1.0.0, TDBC 1.1.2, TWAPI 4.5.2, TclCurl 7.74.0, TclPro Debugger 2.0, TclWS 3.1, Tclvcs 2.3, Tcllib 1.20, Tclparser 1.8, TclTLS 1.7.22, TcUvs 1.4.2, Tdom 0.9.2, Thread 2.8.6, Tix 8.4.3, TkDND 2.9, TkTable 2.11, Tkcon,

## Step 3:

## Downloads

**NOTE:** You must choose the version matching your platform as the 32-bit version will not install on 64-bit Windows either.

Downloads are available from [Sourceforge](#).

Click here

## Reporting bugs

This project only provides an installation bundle for Tcl and extensions. Please report any bugs in individual packages to the respective groups. For installation related issues, please raise a [ticket](#).

## Version history

## Changes in Version 1.11.1

Patch for Tk 8.6.11 to fix mouse wheel scrolling bug.

New packages (1): ooxml 1.5.

Updated packages (2): CAWT 2.6, ruff 1.0.5.

## Changes in Version 1.11.0

New packages (9): autoopts 0.6, chesschart 0.2, duktape 0.9, hl\_tcl 0.7.4, msgpack 2.0, nacl 1.1, scrolldata 2.12, shtmlview 0.9.1, type 0.1.






Updated packages (22): Tcl/Tk 8.6.11, TDBC 1.1.2, registry 1.3.5, Thread 2.8.6, dde 1.4.3, awthemes 10.2.0, ffidi 0.8b0, Img 1.4.12, iocp 1.0.9, mentry 3.11, mkdoc 0.4, rl\_json 0.11.0, scrollutil 1.7, sqlite 3.34.0, tablelist 6.11, tclcurl 7.74.0, TcUvs 1.7.22, Tclws 3.1, tksvg 0.7, tmdoc 0.4, twapi 4.5.2, web 3.7.

## Changes in Version 1.10.1

New packages: BContour 1.1, Bezier 1.1, dgtools 0.3, dgw 0.3, iocp 1.0.0, tarray 1.0.0, tarray\_ui 1.0.0, mkdoc 0.3, tls 1.7.21, tmdoc 0.3,

## Step 4:

 Parent folder

tcl-8.6.11-installer-1.11.1-x86.msi	2021-01-14	22.6 MB	24 	
tcl-8.6.11-installer-1.11.1-x64.msi	2021-01-14	25.1 MB	127 	
tcl-8.6.11-installer-1.11.0-x64.msi	2021-01-05	24.8 MB	4 	
tcl-8.6.11-installer-1.11.0-x86.msi	2021-01-05	22.6 MB	3 	
tcl-8.6.10-installer-1.10.1-x64.msi	2020-08-30	24.3 MB	3 	
tcl-8.6.10-installer-1.10.1-x86.msi	2020-08-30	22.0 MB	2 	
tcl-8.6.10-installer-1.10.0-x64.msi	2019-12-02	21.3 MB	3 	
tcl-8.6.10-installer-1.10.0-x86.msi	2019-12-02	20.3 MB	5 	

# Installation of OOMMF software

After installing Tcl program, now we install OOMMF software. Please follow the instruction mentioned below

Go to <https://math.nist.gov/oommf/software-20.html>

- OOMMF 2.0 alpha 2 patch release (8-Jun-2020).
  - Fixes avf2odt ODT header bug on Windows, and oxsi/boxsi slowdown on large stage counts (all platforms).
  - [Source-only](#) gzipped-tar file (15 903 144 bytes).
  - Source with pre-compiled [64-bit Windows executables \(x64\) for 64-bit Tcl/Tk 8.6.x](#), pkzipped archive (22 505 121 bytes). Built for use with ActiveTcl 8.6.6 or later. (See note 1b above.)
- OOMMF 2.0 alpha 2 (30-Sep-2019).
  - [Source-only](#) gzipped-tar file (15 892 731 bytes).
  - Source with pre-compiled [64-bit Windows executables \(x64\) for 64-bit Tcl/Tk 8.6.x](#), pkzipped archive (22 262 357 bytes). Built for use with ActiveTcl 8.6.6 or later. (See note 1b above.)
- OOMMF 2.0 alpha 1 (30-Sep-2018).
  - [Source-only](#) gzipped-tar file (15 546 536 bytes).
  - Source with pre-compiled [64-bit Windows executables \(x64\) for 64-bit Tcl/Tk 8.6.x](#), pkzipped archive (19 987 004 bytes). Built for use with ActiveTcl 8.6.6 or later. (See note 1b above.)
- OOMMF 2.0 alpha 0 (29-Sep-2017).
  - [Source-only](#) gzipped-tar file (15 416 262 bytes).
  - Source with pre-compiled [64-bit Windows executables \(x64\) for 64-bit Tcl/Tk 8.6.x](#), pkzipped archive (19 517 900 bytes). Built for use with ActiveTcl 8.6.6 or later. (See note 1b above.)

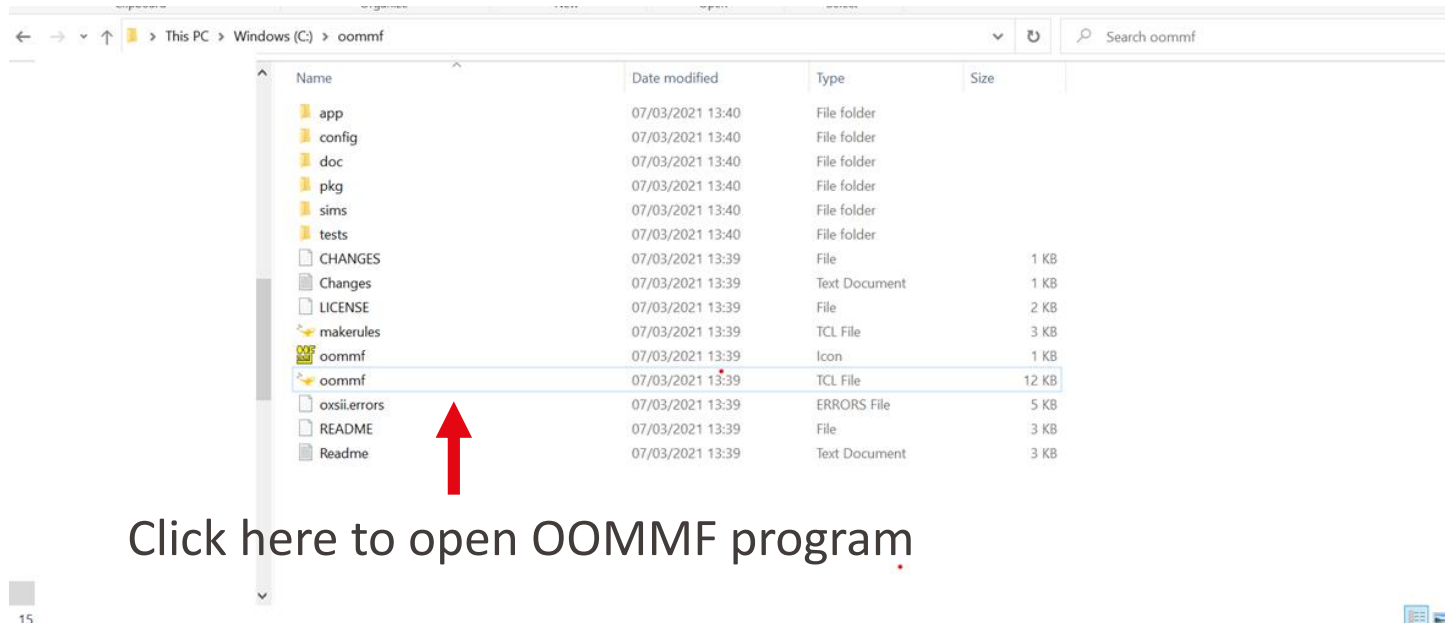


Click here to download OOMMF

Unzip the OOMMF rar file and store it in C drive

# Installation of OOMMF software

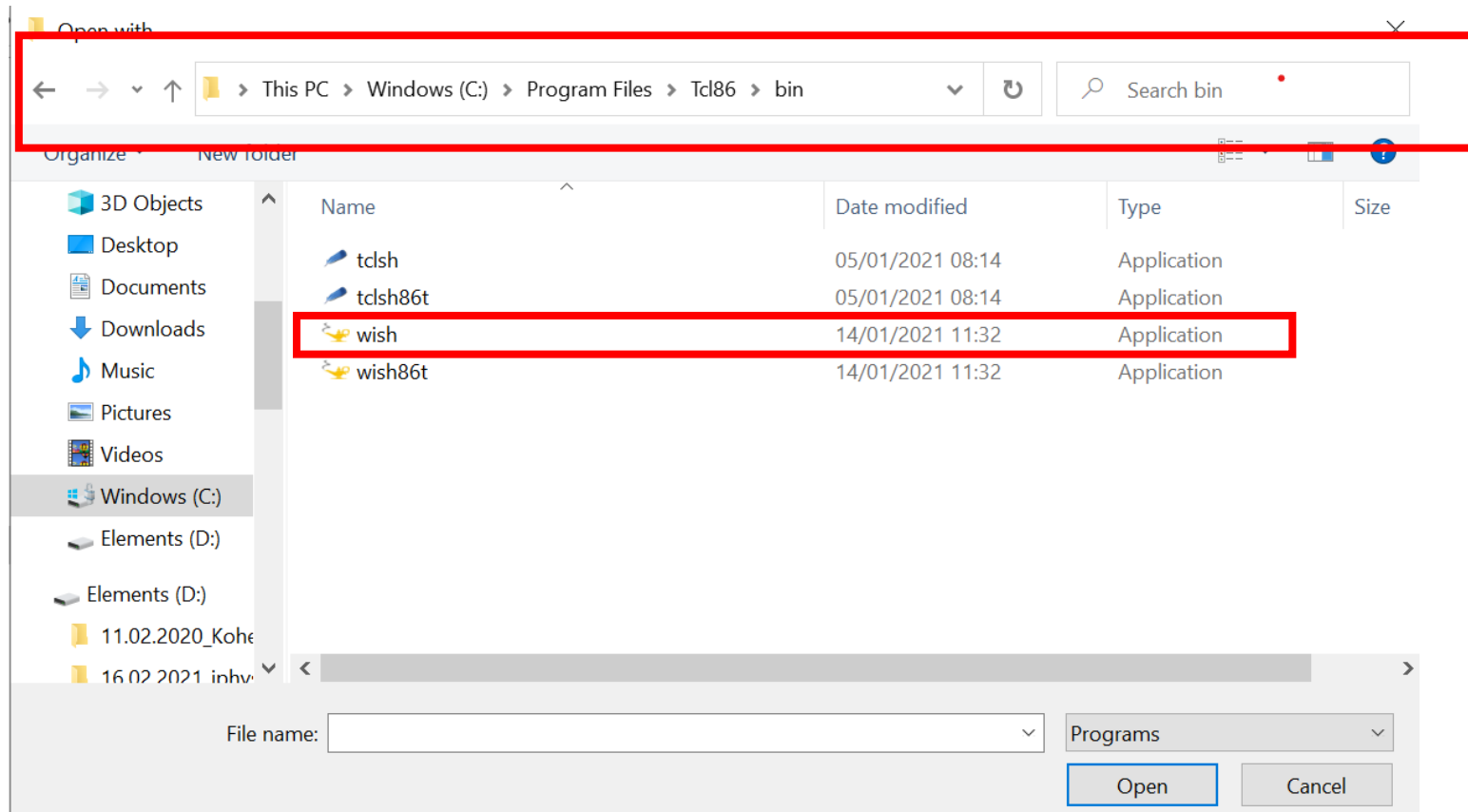
Now you have installed OOMMF in your computer. Lets try to run the program. For this go to your OOMMF folder and try to run the TCL file.



Click here to open OOMMF program

If you don't see your TCL file activated. Then go to **Open with > look for another app in this pc > Tcl86 > bin > wish ( a screen shot is attached in the next slide)**

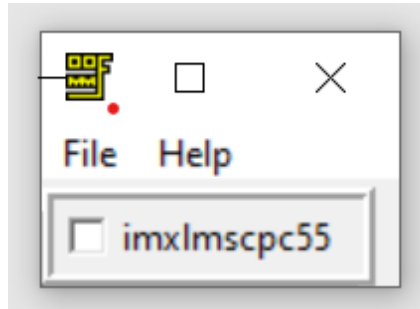
Try this if you don't see the Tcl file active in OOMMF folder after installing the software





If everything goes fine your screen should look like the picture shown below after opening the Tcl file in OOMMF folder.

**Step 1:**



**Step 2:**

