# Installing and Compiling OpenFresco

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with contributions from:

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esco

# Outline

- Resources on NEESforge
- Install OpenFresco on Windows using the Installer
  - Install Tcl/Tk
  - Install OpenSSL
  - Download and Compile OpenSees Source
     Code
- Compile OpenFresco on MS Visual C++ 2005/2008

## **OpenFresco on NEESforge**

- Resource on NEESforge (<u>http://</u> openfresco.neesforge.nees.org)
- + Go over to the **Docs** on NEESforge
- Command Language Manual
- + Installation and Getting Started Manual
- + Examples
- Everything covered in this presentation is in the Installation Guide

# OpenFresco on NEESforge

### http://openfesco.neesforge.nees.org/



### Welcome to OpenFresco project!

Local and distributed hybrid simulations enabled through an object oriented software framework for experimentation and control.

### OpenFresco 2.5 & Manuals have been released

Andreas Schellenberg - 2008-01-14 18:04 (0 Comment) [Read More/Comment]

OpenFresco 2.0 & Manual have been released Andreas Schellenberg - 2007-01-03 08:40 (0 Comment) [Read More/Comment]

### Manual for OpenFresco 1.0-beta Andreas Schellenberg - 2006-11-30 08:24 (0 Comment) [Read More/Comment]

OpenFresco 1.0-beta Release Andreas Schellenberg - 2006-10-02 01:58 (0 Comment) [Read More/Comment]

[News archive]

### Manual

Subversion Repository-Downloads-

### 110,

- Bugs ( O open / 1total ) Bug Tracking System

📎 Tracker

- Support ( 0 open / Ototal ) Tech Support Tracking System

- Patches ( 0 open / Ototal ) Patch Tracking System

- Feature Requests ( 0 open / Ototal ) Feature Request Tracking System

Forums (11 messages in 2 forums)

🚽 Doc Manager

Mailing Lists (1 public lists)

- Task Manager - Next Release
- To Do

🔀 Surveys ( 0 surveys )

🕉 SCM Tree ( 57 commits, 116 adds )

OpenFres

### Released Files

# Documentation

Click on "Doc Manager" on http://openfesco.neesforge.nees.org/
 Click on "Manual & FAQ" and then click on "Version 2.6"

	<b>NEES</b> forg	Cecsearch the entire	project 🛟	Search Se	lvanced arch	Log In New Account				
Home	My Page	Project Tree	Code Snippets	Project Openings	OF	penFresco				
Summary	Forums Tracker	Lists Task	s Docs Survey	ys News	SCM	Files				
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**Developer Installation - Outline** + MS Visual Studio 2005/2008 is used Download OpenSees source code Install Tcl/Tk Install OpenSSL + Modify and compile OpenSees source code (TCP\_SocketSSL in Actor project) Download OpenFresco Window Installer Developer's Installation Compiling OpenFresco

# Developer Installation - OpenSees (1)

 First, register at the OpenSees website <u>http://opensees.berkeley.edu/community/</u> <u>profile.php?mode=register&agreed=true?</u> <u>reg=register</u>

 Then enter email address to get to the download screen

http://opensees.berkeley.edu/OpenSees/ developer/download.php

# Developer Installation - OpenSees (2) + Download OpenSees Source Code and unzip file

# DOWNLOAD Wind SOURCE CODE Users in BUG REPORT Source BUG REPORT Develog importa 1.1 Search 1.2 To customize the<br/>quicklinks, go to Site Map 3.1 Click Here Map 4.1 PEER NEESit

NEES

### Windows Executables

Users may download executable files for OpenSees for Windows 98/2000/NT/XP/Vista.

### Source Code Distribution

Developers may download source code for Unix and Windows versions of OpenSees. Please note the following important points.

- Understand that this is for developers only. If you have never compiled and debugged a very large C/C++ program before, all this will do for you is use up a lot of disk space.
- This code is covered by the <u>COPYRIGHT</u>. Please read the license before downloading it. The bottom line
  is that it's free to download and use prviding it's not for commercial use.
- 3. If you're just beginning to work with OpenSees then its recommended to start with a tarball from the most recent release. Releases occur on branches of the main cvs tree and have undergone QA and bug fixing to make them relatively stable. Later on, if you want to move off the branch and synchonize with the tip, use <u>CVS</u>.
- The source code is distributed as either a Unix-style tar archive compressed by GNU zip (gz) or as a PC-style ZIP archive. (The only difference is the type of archive; the same source code files are inside the archive.

### Stable Production Release

The current version of OpenSees is **1.7.5**. This is a stable, tested! release that you should use in production environments.

OpenFres

DOWNLOAD Stable Release	2
Unix systems	stable.tar.gz archive
Win32 systems	stable.zip archive

# Developer Installation – Tcl/Tk (1)

Install compiled Tcl/Tk 8.5 (

http://www.activestate.com/store/productdetail.aspx? prdGuid=f0cd6399-fefb-466e-ba17-220dcd6f4078)

ActiveTcI With the complete, ready-to-install Tcl distribution for Windows, Mac OS X, Linux, Solaris, AIX, and HP-UX. ActiveTcl is available on DVD or by free download. If you require support for or plan to redistribute ActiveTcl, you should learn more about our ActiveTcl Enterprise and OEM Licensing options below. More Info	Shopping Cart Products Contact us MY ACCOUNT Account Profile Register Sign in (? Customer Support
ActiveTcl       Standard distribution, available on DVD or by free download.         DVD \$39.00 + S&H         ActiveTcl Enterprise         Quality-assured, custom distribution including support and maintenance, for organizations of any size that depend on Tcl for their internal systems.	Click Here
ActiveTcl OEM License Request Information Annual license to distribute ActiveTcl within commercial products or services. All prices in USD.	

# Developer Installation – Tcl/Tk (2)

 Must install Tcl header and library files – it may not be part of the default installation

 Change the default installation location to C:\Program Files\Tcl





### Developer Installation – Compile OpenSees (2)

- Add TCP\_SocketSSL.ccp and TCP\_SocketSSL.h to the actor project
- Right click on the "actor" project and click on "Existing Item..."
- These files are in ...OpenSees Directory\SRC\actor\channel

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- <u>i</u>	References	Existing Item.				
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	Set as StartUp Project	Class				
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### Developer Installation – Compile OpenSees (3)

- + Add OpenSSL include
- Start by clicking on "Properties" after right clicking on actor project.

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Click Here Work genetics Work gene
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Click Here Source for any former of the second of the sec
Properties and a second s

### Developer Installation – Compile OpenSees (4)

- In the properties window expand "C/C++" section and select "General"
- Then, select the "Additional Include Directories"



### Developer Installation – Compile OpenSees (5)

- + Click new directory icon.
- + Enter "C:Program Files\OpenSSL\include"
- + Click "OK"

### Click Here

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and the second s				C,	penFres	co 16

### Developer Installation – Compile OpenSees (6)

- Add OpenSSL library by first expanding the "Linker" Section and selecting "General"
- Then select "Additional Library Directories"



### Developer Installation – Compile OpenSees (7)

- Click new directory icon.
- Enter "\User's Directory\OpenSSL\lib" where User's Directory is where you installed OpenSSL on your computer
- + Click "OK"

Click Here I herit from parent or project defaults Sy Dinherit from parent or project defaults Command Line Sy Dinherit from parent or project defaults Command Line Command Line		openSees Property Pages       Image: Configuration:       Active(Release)       Image: Platform:       Active(Win32)       Image: Configuration Manager         Image: Configuration Properties       Image: Output File       .\\bin/openSees.exe         Image: General       Output File       .\\bin/openSees.exe         Show Progress       Not Set
Click Here		Debugg C /C++ Additional Library Directories C /C /C / C / program Files\tcl\lib C / program Files\tcl\lib C / program Files\tcl\lib C / program Files\tcl SSL\lib";"c:\program Files\tc SSL\lib";"c:\program Files\tc SSL\lib";"c:\program Files\tc
	Click Here	Ma De Sy: ✓ Inherit from parent or project defaults Op Em Ad Command Line Specifies one or more additional paths to search for libraries; configuration specific; use semi-colon delimited list if more than one. (/LIBPATH:[dir])

# Developer Installation – Compile OpenSees (8)

+ Click "Apply" and "OK" to apply the changes

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<ul> <li>Linker</li> <li>Manifest Tool</li> <li>XML Document Generator</li> <li>Browse Information</li> <li>Build Events</li> <li>Custom Build Step</li> <li>Web Deployment</li> </ul> Additional Include Directories Specifies one or more directories to add to the include path; use semi-colon delimited list if more than one. (/I[path]) OK Cancel Apply
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OK Cancel Apply
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### Developer Installation – Compile OpenSees (9)

- Now you're ready to Build!
- Right click on openSees project and click "Build"

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	Solution Explorer	Custom Build Rules
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		References
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 Developer Installation – Compile OpenSees (10)
 + Building OpenSees can sometimes be tricky
 + The best resource is the OpenSees Forum ( http://opensees.berkeley.edu/community/ index.php)
 + OpenFresco will not compile without first compiling

OpenSees



# Developer Installation – OpenFresco (1)

### Click on "Released Files" (http:// openfesco.neesforge.nees.org)



### Welcome to OpenFresco project!

Local and distributed hybrid simulations enabled through an object oriented software framework for experimentation and control.

### **OpenFresco 2.5 & Manuals have been released** Andreas Schellenberg - 2008-01-14 18:04

(0 Comment) [Read More/Comment]

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Manual for OpenFresco 1.0-beta Andreas Schellenberg - 2006-11-30 08:24 (0 Comment) [Read More/Comment]

OpenFresco 1.0-beta Release Andreas Schellenberg - 2006-10-02 01:58 (0 Comment) [Read More/Comment]

[News archive]

### Project Summa

### 📎 Tracker

- Bugs ( O open / 1total ) Bug Tracking System

- Support ( O open / Ototal ) Tech Support Tracking System

- Patches ( 0 open / Ototal ) Patch Tracking System

- Feature Requests ( **0 open / Ototal** ) Feature Request Tracking System

Forums (11 messages in 2 forums)

Doc Manager

Mailing Lists (1 public lists)

Task Manager
 Next Release
 To Do

Surveys ( 0 surveys )

SCM Tree ( 57 commits, 116 adds )

OpenFres

Released Files



# Developer Installation – OpenFresco (2) + Download OpenFresco Windows Installer (http://neesforge.nees.org/frs/?group\_id=36)

	Package	Release & Notes	Filename		Date	
	Fackage	Release & Hotes	Thename	Size	D/L Arch	Туре
	Examples 🖾					
	2.5			200	8-01-01 18:00	
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	2.0			200	6-12-20 03:12	
	EXAMPLES.zip			474 KB	341 i386	.zip
	1.0-beta			200	6-10-02 19:24	
	ThreeSpanBridge_Tcl.zip			59 KB	99 Any	.zip
	TwoDOFModel_Tcl.zip			13 KB	74 Any	.zip
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	OpenFresco2.0.zip			2.38 MB	178 i386	.zip
	1.0-beta			200	6-10-04 01:56	
	OpenFresco1.0-beta.zip			6.06 MB	46 Any	.zip
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	OPF2.5_Installer_win32.zip			12.1 MB	166 1386	.zip
	2.0			200	6-12-20 01:25	
	OpenFresco2.0_win32.zip			2.62 MB	165 i386	.zip
	1.0-beta			200	6-10-03 05:24	
	OpenFresco1.0-beta_win32.z	tip		1.07 MB	47 i386	.zip

### Developer Installation – OpenFresco (3)

- Start OpenFrescon Windows Installer by double clicking on OPF2.6\_Installer\_win32.zip
- Click "Next"



### 

### Welcome to the OpenFresco Setup Wizard

This wizard will guide you through the installation of OpenFresco 2.6.

It is recommended that you close all other applications before starting Setup. This will make it possible to update relevant system files without having to reboot your computer.

Click Next to continue.

Cancel

OpenFres

Next >

### Developer Installation – OpenFresco (4)

- Use scroll bar to read License Agreement
- Click "I Agree"

•	OpenF	resco	Setu	р

Open+resco

### License Agreement

Please review the license terms before installing OpenFresco.

Cancel

OpenFres

Press Page Down to see the rest of the agreement.

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If you accept the terms of the agreement, click I Agree to continue. You must accept the agreement to install OpenFresco.

Nullsoft Install System v2.45

< Back I Agree

# Developer Installation – OpenFresco (5)

- + Check the Full installation option
- Click "Next"

CopenFresco Setup	Choose Components		
Opent resco	Choose which features of OpenFr	esco you want to install.	
Check the components you install, Click Next to continu	want to install and uncheck the com e.	ponents you don't want to	
Select components to insta	: Full Executable, DLLs, and Ex	Description Installs the source code, binaries, and examples. Recommended for developers.	
Space required: 217.2MB			
Nullsoft Install System v2.45 -	< <u>B</u> ack	Next > Cancel	
		12.	OpenFresco

### Developer Installation – OpenFresco (6)

- + Enter the path of OpenSees source code
- + Click "Next"

🧐 OpenFresco Setup		
OpenFresco	Set Environment Variable Make Sure that the OpenSees source code is installed on your computer before installing the OpenFresco source code!	
Enter the path where OpenS Example: C:\Program Files\C	ees directory is located. )penSees	
C:\Program Files\OpenSees	· · · · · · · · · · · · · · · · · · ·	
Nullsoft Install System v2,45 —		
jonne - the		OpenFresco

### Developer Installation – OpenFresco (7)

- + Choose the installation location by clicking on "Browse"
- Click "Next"

OpenFresco       Choose Install Location         Choose the folder in which to install OpenFresco.         Setup will install OpenFresco in the following folder. To install in a different folder, click         Browse and select another folder. Click Next to continue.
Setup will install OpenFresco in the following folder. To install in a different folder, click Browse and select another folder. Click Next to continue.
Destination Folder
C:\Program Files\OpenFresco
Space required: 217.2MB Space available: 19.1GB
Nullsoft Install System v2,45       < Back

### Developer Installation – OpenFresco (8)

- Clicking on "Install" to create a shortcut on the Start Menu
- + Check "Do not create shortcuts" to bypass this step
- Click "Install"



### Developer Installation – OpenFresco (9) + Following status screen appears 😌 OpenFresco Setup Installing Please wait while OpenFresco is being installed. Extract: openSees.exe... 45% Show <u>d</u>etails < Back Next >Cancel 30 OpenFresco

### Developer Installation – OpenFresco (10)

 Click "Yes" to complete installation – Adds a path to OpenFresco exe and DLLs to the execution path

Saying no here will change the Path for the current user only.
(Administrator permissions required for all users)
Vec No

# Developer Installation – OpenFresco (11)

### + Click "Finish" to complete installation

	🥯 OpenFresco Setup								
		Completing the OpenFresco Setup Wizard							
	Int.	OpenFresco 2.6 has been installed on your computer.							
	- 241	Click Finish to close this wizard.							
		< Back Finish Cancel							
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### Developer Installation – Compile OpenFresco (2)

- To Build openFrescoDLL to create DLL to be used with OpenSees, right click on openFrescoDLL project and selecting "Build"
- DLL is created in \User's Directory\OpenFresco 2.5\trunk \WIN32\bin

	OpenFresco - M	licr	osoft Visual Studio					
	File Edit View	Proj	ect Build Debug Tools	Window Community	Help			
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# Conclusion

- Instruction for Unstalling OpenFresco is in Installation and Getting Started Manual
- Installation and Getting Started Manual contains a simple example using OpenSees as the computational Driver
- Please contact me with any questions or suggestions (<u>hongkim@berkeley.edu</u>)

# Thank you!

### http://openfresco.neesforge.nees.org

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