

gLAB and Cygwin installation on Windows

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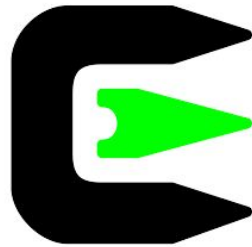
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Introduction

The tutorials of this course have been designed to be executed under UNIX (Linux) Operative System.

Nevertheless, Windows users can use Cygwin to emulate a UNIX command shell on their own computer to perform the laboratory sessions.



Software download

Go to <https://gage.upc.edu/en/learning-materials/software-tools/glab-tool-suite-links/glab-tutorials/gnss-tutorials>


- Tutorial 5: Solving navigation equations
- Tutorial 6: Kinematic orbit estimation of a LEO satellite
- Tutorial 7: Differential positioning with code
- Tutorial 8: Carrier ambiguity fixing
- Tutorial 9: Differential positioning with carrier
- Associated Software and Data Files (Linux)
 - [How to install the Software \[Linux\]](#)
 - [Software and Data Files \[Linux\]](#)
- Associated Software and Data Files (Windows)
 - [How to install the Software \[Windows\]](#)
 - All in one package:
 - **FULL Package with gLAB + Cygwin + Data Files**
 - Separate Packages (gLAB +Cygwin and Data Files):
 - [Installable Toolkit \(gLAB +Cygwin\)](#)
 - [Data Files \[Windows\]](#)

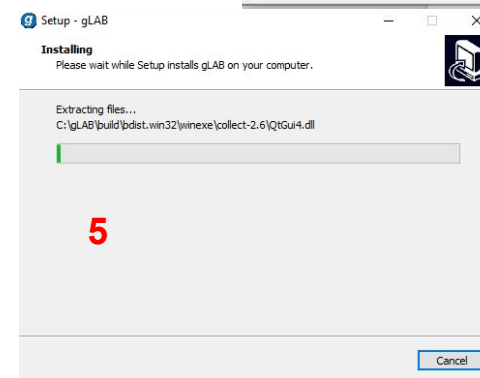
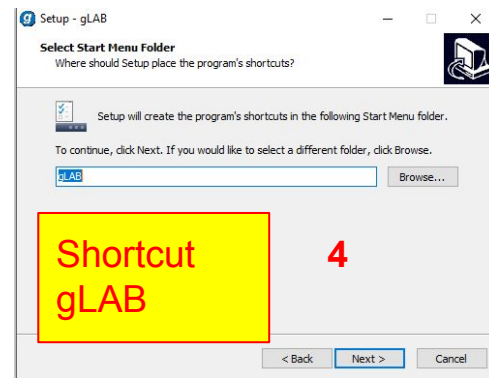
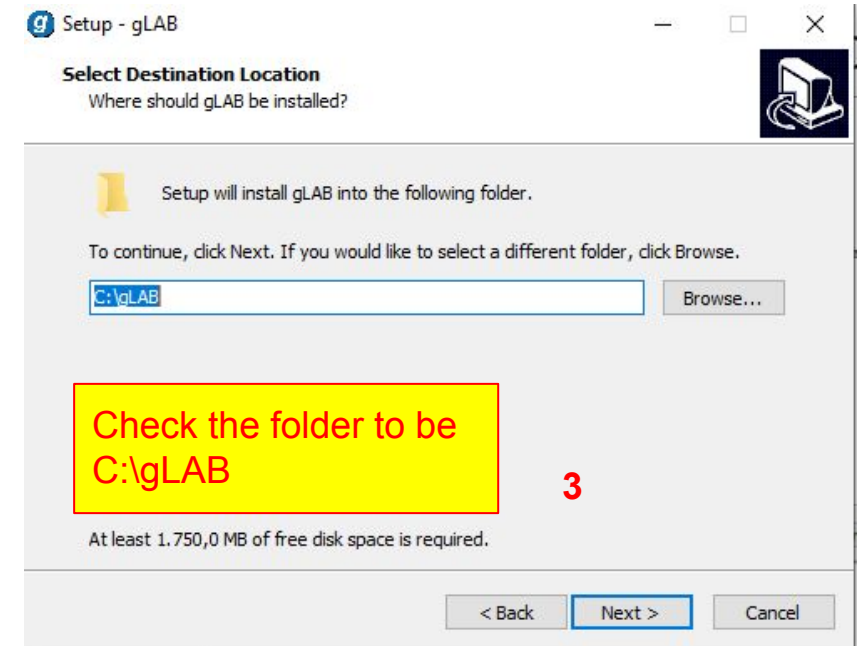
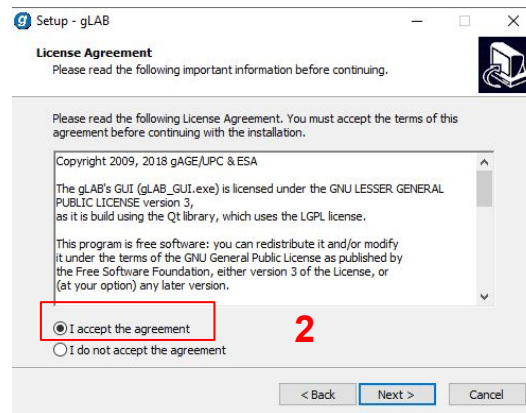
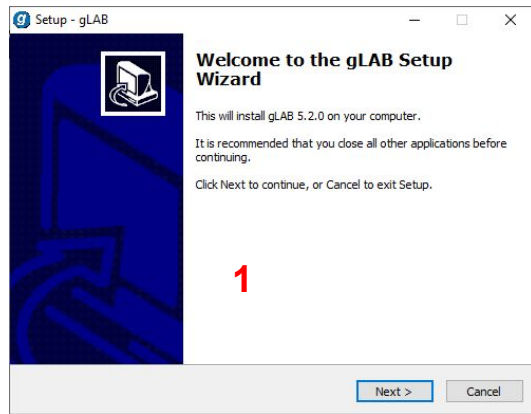
Click and download the full package, which contains:

- Cygwin, the UNIX emulator
- gLAB, gAGE GNSS data processing software
- Data files needed for the course

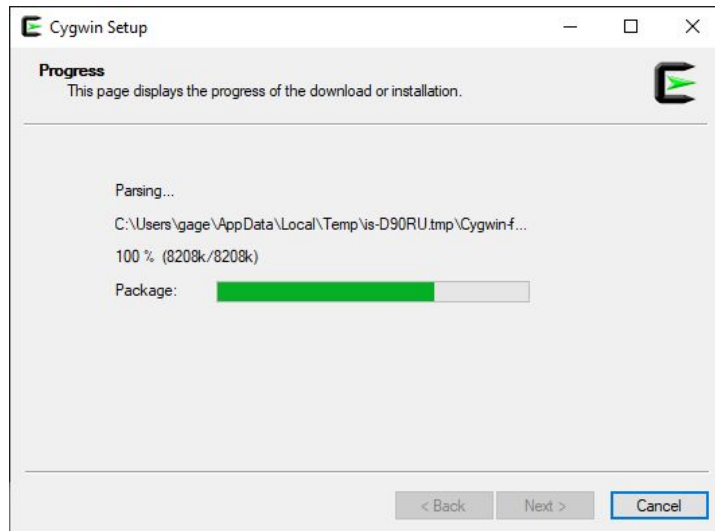
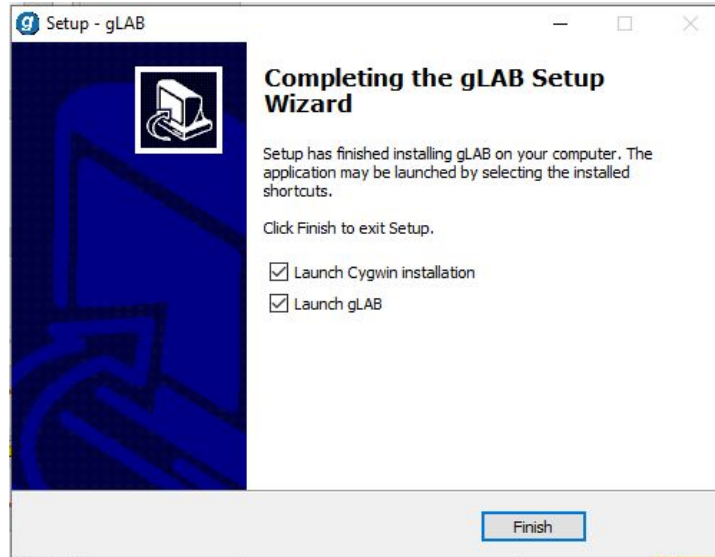
Name	Date modified	Type	Size
gLAB_v5.2.0_WinSetup_Cygwin_Master.exe	13/2/2024 11:56	Application	871.783 KB

Software installation

Click on:  gLAB_v5.2.0_WinSetup_Cygwin_Master.exe



Software installation



After having waited for some minutes...



- XWin Server (plotting permissions for Gnuplot)
- Cygwin Terminal (command line)
- gLAB (Graphical User Interface)
- GNSS TUTBOOK MASTER
 - FILES (zipped input files)
 - PROGRAMS (processing programs)
 - WORK (unzipped input files, destination of output)
 - HTML (format descriptions, etc.)
 - Tutorial scripts
 - Tutorial PDFs

Setting up the working area

Start Cygwin by clicking on the icon

Write *pwd* (Print Working Directory): the installation folder should be */cygdrive/c/gLAB/win/GNSS_TUTBOOK_MASTER*

```
g gage@gagevostro:/cygdrive/c/gLAB/win/GNSS_TUTBOOK_MASTER
gage@gagevostro:/cygdrive/c/gLAB/win/GNSS_TUTBOOK_MASTER pwd
/cygdrive/c/gLAB/win/GNSS_TUTBOOK_MASTER
gage@gagevostro:/cygdrive/c/gLAB/win/GNSS_TUTBOOK_MASTER |
```

If not: *cd "C:\gLAB\win\GNSS_TUTBOOK_MASTER"* (Change Directory)

```
gage@gagevostro:/cygdrive/c/windows cd "C:\gLAB\win\GNSS_TUTBOOK_MASTER"
gage@gagevostro:/cygdrive/c/gLAB/win/GNSS_TUTBOOK_MASTER |
```


Content of GNSS TUTBOOK MASTER

FILES	13/2/2024 15:16	File folder	
HTML	13/2/2024 15:16	File folder	
PROG	13/2/2024 15:16	File folder	
WORK	13/2/2024 15:18	File folder	
ntpd_tut2.sh	23/11/2017 14:43	SH File	35 KB
ntpd_tut2.txt	6/3/2018 19:03	Text Document	36 KB
ntpd_tut3.sh	6/3/2018 12:49	SH File	17 KB
ntpd_tut3.txt	6/3/2018 19:03	Text Document	18 KB
ntpd_tut4.txt	6/3/2018 19:03	Text Document	10 KB
ntpd_tut5.txt	6/3/2018 19:03	Text Document	6 KB
ntpd_tut6.sh	22/11/2017 17:24	SH File	17 KB
ntpd_tut6.txt	6/3/2018 19:04	Text Document	17 KB
ntpd_tut7.sh	18/1/2018 13:59	SH File	29 KB
ntpd_tut7.txt	6/3/2018 19:04	Text Document	30 KB
ntpd_tut8.txt	6/3/2018 19:04	Text Document	49 KB
ntpd_tut9.txt	6/3/2018 19:04	Text Document	108 KB
README_install.txt	6/3/2018 19:04	Text Document	5 KB
README_start.txt	6/3/2018 19:04	Text Document	3 KB
T0. Introduction to gLAB tool suite.pdf	7/3/2018 13:49	Microsoft Edge P...	4.432 KB
T1. UNIX environment tools and skills.pdf	20/2/2018 19:27	Microsoft Edge P...	307 KB
T2. Measurement analysis and error budg...	20/2/2018 19:27	Microsoft Edge P...	5.765 KB
T3. Model components analysis.pdf	20/2/2018 19:27	Microsoft Edge P...	6.084 KB
T4. Detailed code measurements modelli...	20/2/2018 19:27	Microsoft Edge P...	2.783 KB

- FILES (compressed input files)
- HTML (GNSS format description)
- PROG (executable programs)
- WORK (unzipped input files and output destination)
- ntpd_tut*.sh
(executable BASH scripts for the production of the output)
- ntpd_tut*.txt
(txt files with the single instructions to use for the tutorial)
- README (files to read)
- PDFs of the tutorials

Path to files - Windows vs Cygwin

- Windows style: `path\to\Windows directory`

Blank spaces are present, path indicated using \ (ALT + °)

- Linux (Cygwin) style: `path/to/Linux_directory`

Blank spaces are not present, path indicated using / (Maius + 7)

Cygwin works with Windows style only if the path is put between quotation marks.

Conversion:

W to L: `cygpath "path\to\Windows"`

L to W: `cygpath -w "path/to/Linux"`

```
gage@gagevostro:/cygdrive/c/Users/gage/Desktop/Lecture1502 cygpath "C:\Users\gage\Desktop\Lecture1502\path_to\end_path"
/cygdrive/c/Users/gage/Desktop/Lecture1502/path_to/end_path
gage@gagevostro:/cygdrive/c/Users/gage/Desktop/Lecture1502 cygpath -w "/cygdrive/c/Users/gage/Desktop/Lecture1502/path_to/end_path"
C:\Users\gage\Desktop\Lecture1502\path_to\end_path
```


Acknowledgements

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- The data set of GRACE-A LEO satellite was obtained from the NASA Physical Oceanography Distributed Active Archive Center at the Jet Propulsion Laboratory, California Institute of Technology.
- The other data files used in this study were acquired as part of NASA's Earth Science Data Systems and archived and distributed by the Crustal Dynamics Data Information System (CDDIS).
- To Deimos Ibáñez for his contribution to gLAB updating and making the Windows installable version of this tutorial.
- To Adrià Rovira-Garcia for his contribution to the edition of this material and gLAB updating.

Main bibliography

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- B. Hofmann-Wellenhof et al. *GPS, Theory and Practice*. Springer-Verlag. Wien, New York, 1994.
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Thank you!