# OpenLB technical report: Compiling OpenLB with Linux Bash for Windows

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February 2019

The here described installation procedure has been tested with OpenLB 1.1 and Windows 10 x64. If you are using Windows 10 Fall Creators Update and later: Install Linux bash from the Microsoft Store and skip steps 1 through 4. Use the following guide `https://docs.microsoft.com/en-us/windows/wsl/install-win10`

1. Make sure you are using a 64-bit version of Windows 10 with the Anniversary Update

2. Open the Settings app and go to **Update & Security - For Developers**. Activate the **"Developer Mode"** switch here to enable Developer Mode.
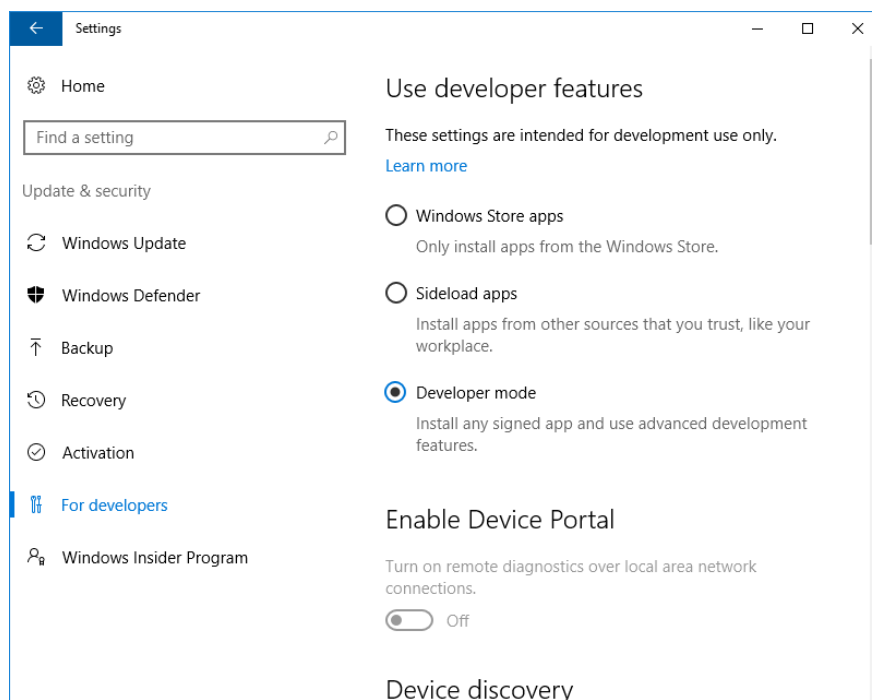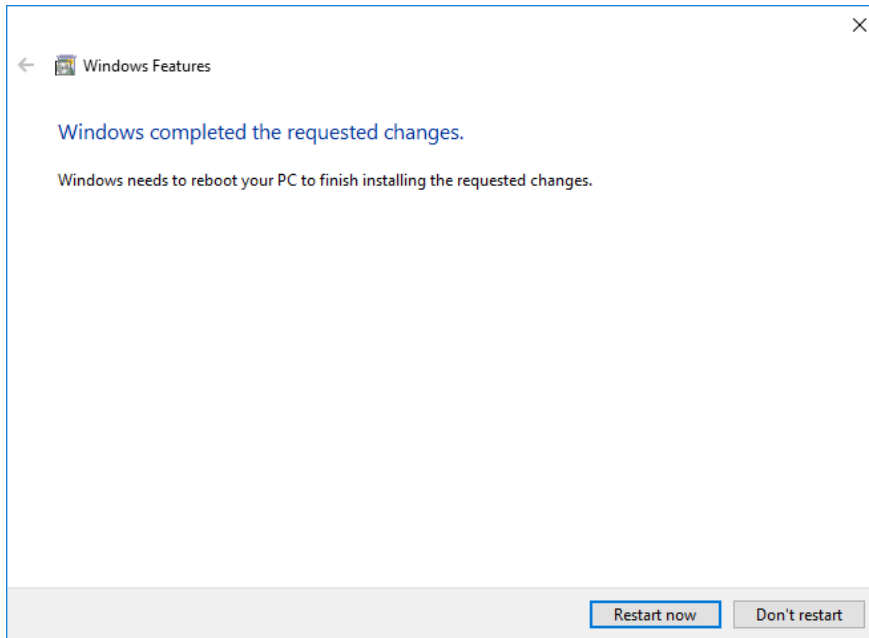
3. Enable installation of apps outside the Windows Store
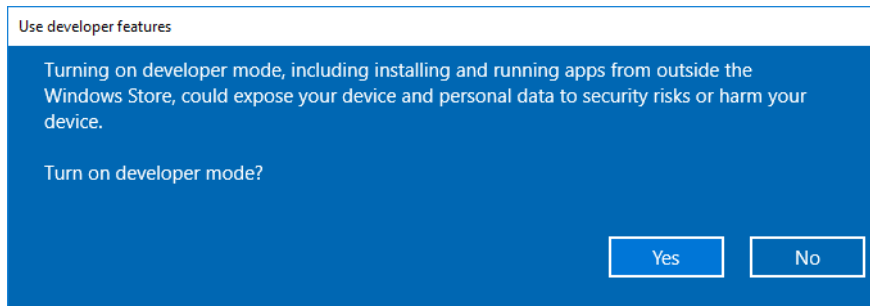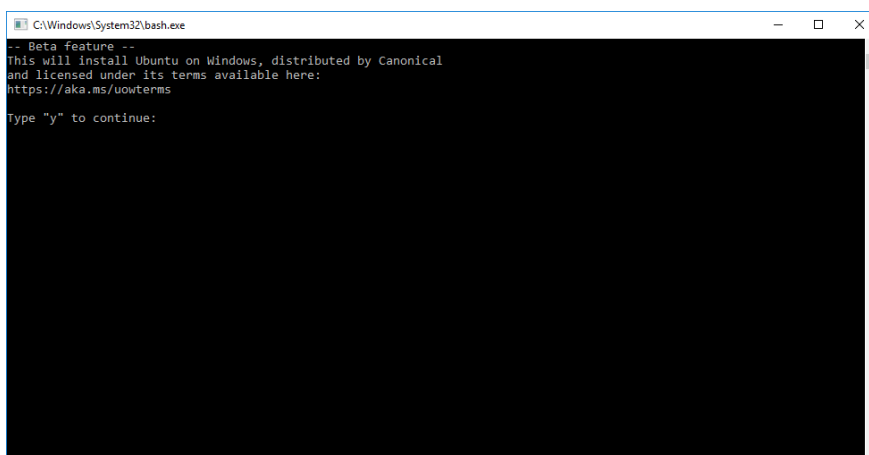

4. Open the Control Panel, click **"Programs"** and select **"Turn Windows Features On or Off"** under Programs and Features. Enable the **"Windows Subsystem for Linux (Beta)"** option in the list here and click **"OK."**
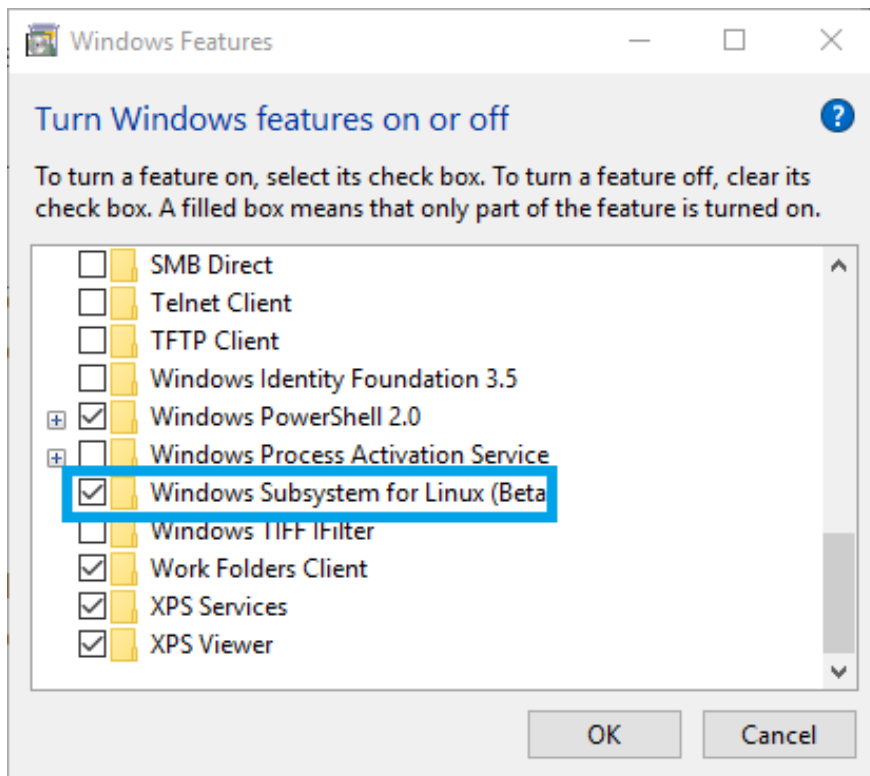
5. Reboot

6. After the computer restarts click the Start button and type **"bash"**

7. type **"y"** to accept the license

8. Wait for the Linux image to be downloaded then create a UNIX username and password

9. Before installing the required libraries run:
   sudo apt-get update

10. Next, install the g++ compiler, which you will need to compile C++ programs:
    sudo apt-get install g++ make

11. To benefit from the efficient parallelization, you will probably want to run the program on more than one core, so it is recommended to install Open-MPI:
    sudo apt-get install openmpi-bin openmpi-doc libopenmpi-dev

12. Download OpenLB from `http://www.openlb.net/` and unzip it to a folder
    (e.g. C:\Users\USERNAME\Documents\openlb).

13. Navigate to this folder within the Linux Bash
    (e.g. cd /mnt/c/Users/USERNAME/Documents/openlb)

14. Finally, go into the root folder of OpenLB and type **make** to compile the software library
    and all examples. If your system is set up correctly, you should see a lot compiler messages
    but no errors.