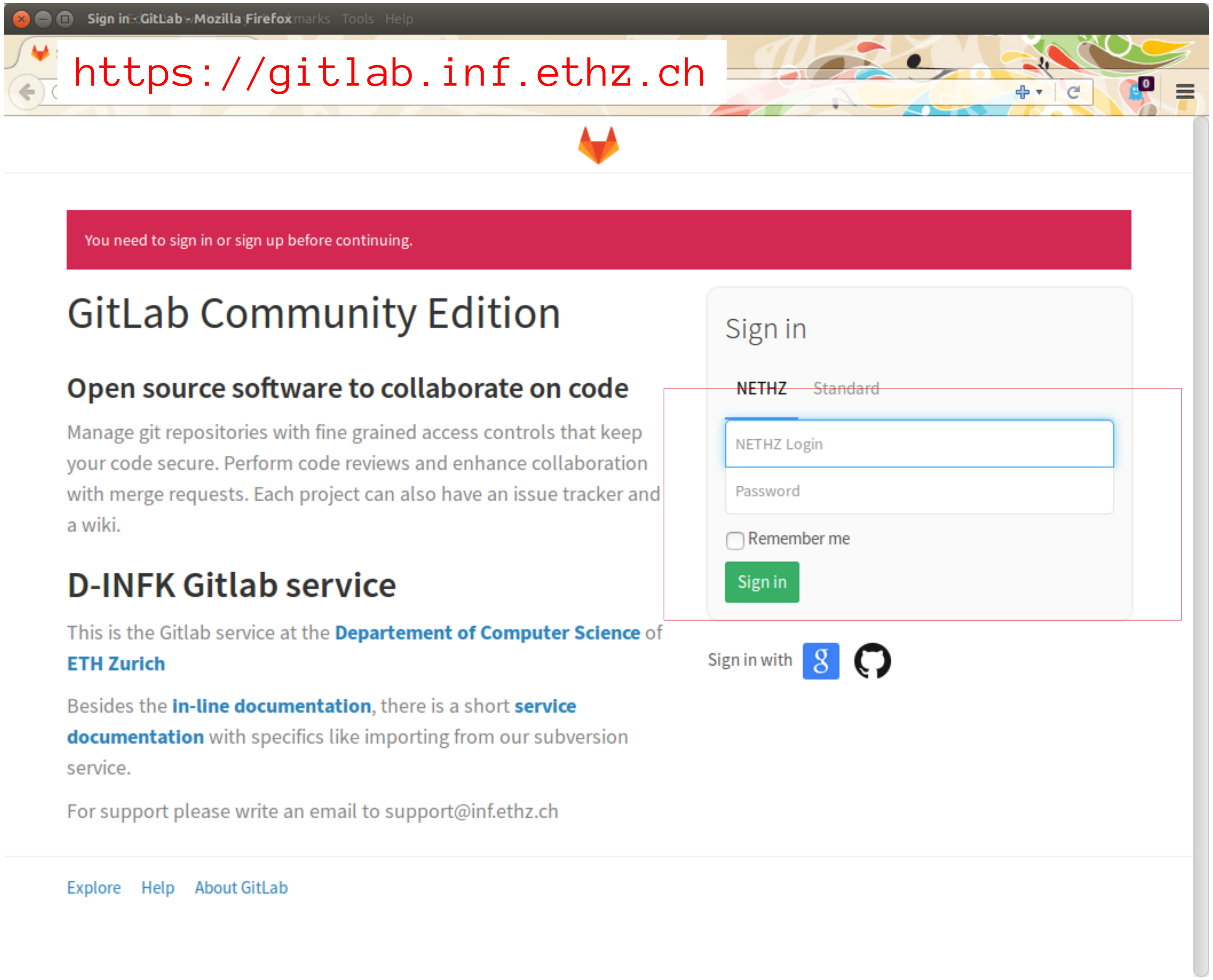
ASL – Fall 2016

Gitlab, SW setup + Bash

Gitlab account and permissions

Create a repository



https://gitlab.inf.ethz.ch

You need to sign in or sign up before continuing.

GitLab Community Edition

Open source software to collaborate on code

Manage git repositories with fine grained access controls that keep your code secure. Perform code reviews and enhance collaboration with merge requests. Each project can also have an issue tracker and a wiki.

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Besides the **in-line documentation**, there is a short **service documentation** with specifics like importing from our subversion service.

For support please write an email to support@inf.ethz.ch

Sign in

NETHZ Standard

NETHZ Login

Password

□ Remember me

Sign in

Sign in with

Explore Help About GitLab

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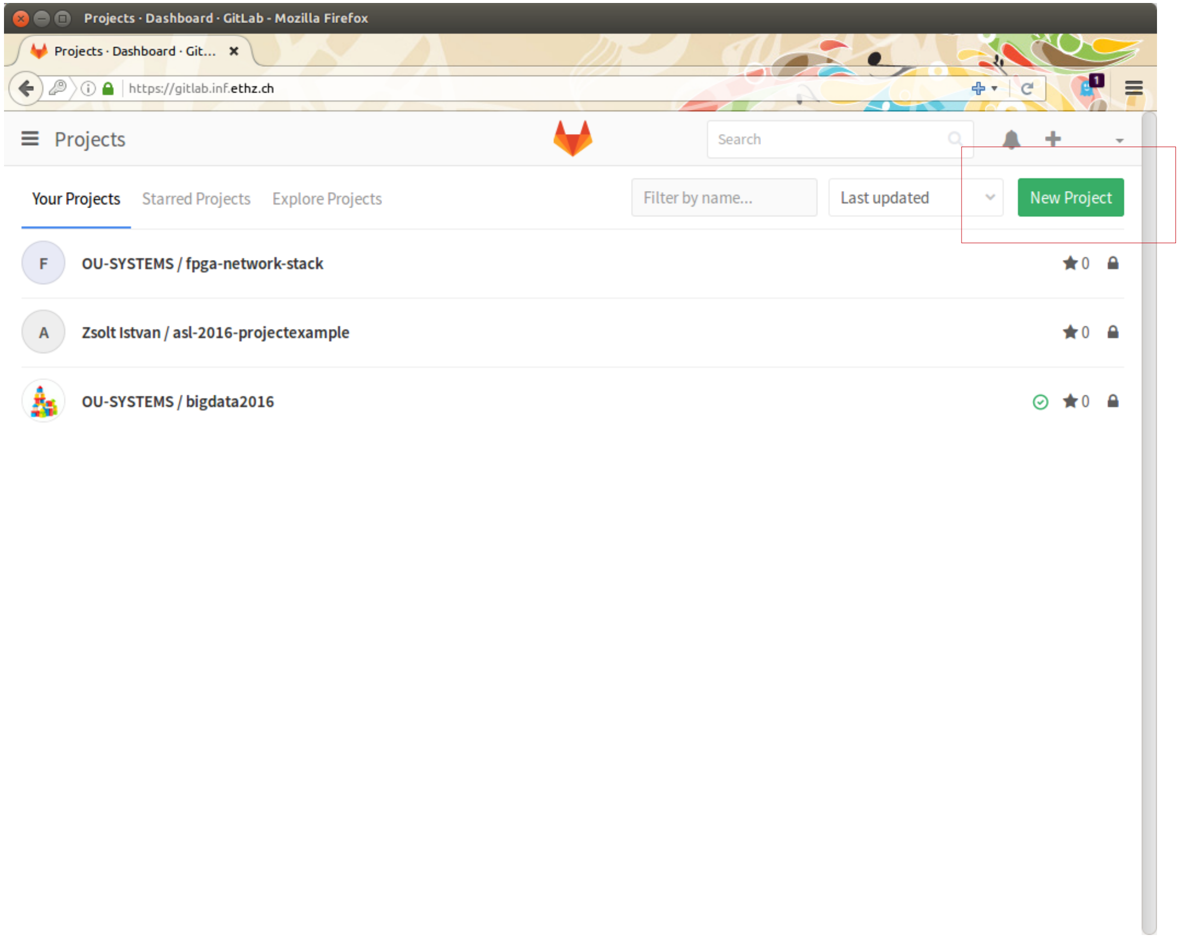

Projects · Dashboard · GitLab - Mozilla Firefox
Projects · Dashboard · Git...
https://gitlab.inf.ethz.ch
Projects
Search
Your Projects
Starred Projects
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Filter by name...
Last updated
New Project

F OU-SYSTEMS / fpga-network-stack ★0

A Zsolt Istvan / asl-2016-projectexample ★0

OU-SYSTEMS / bigdata2016 ★0

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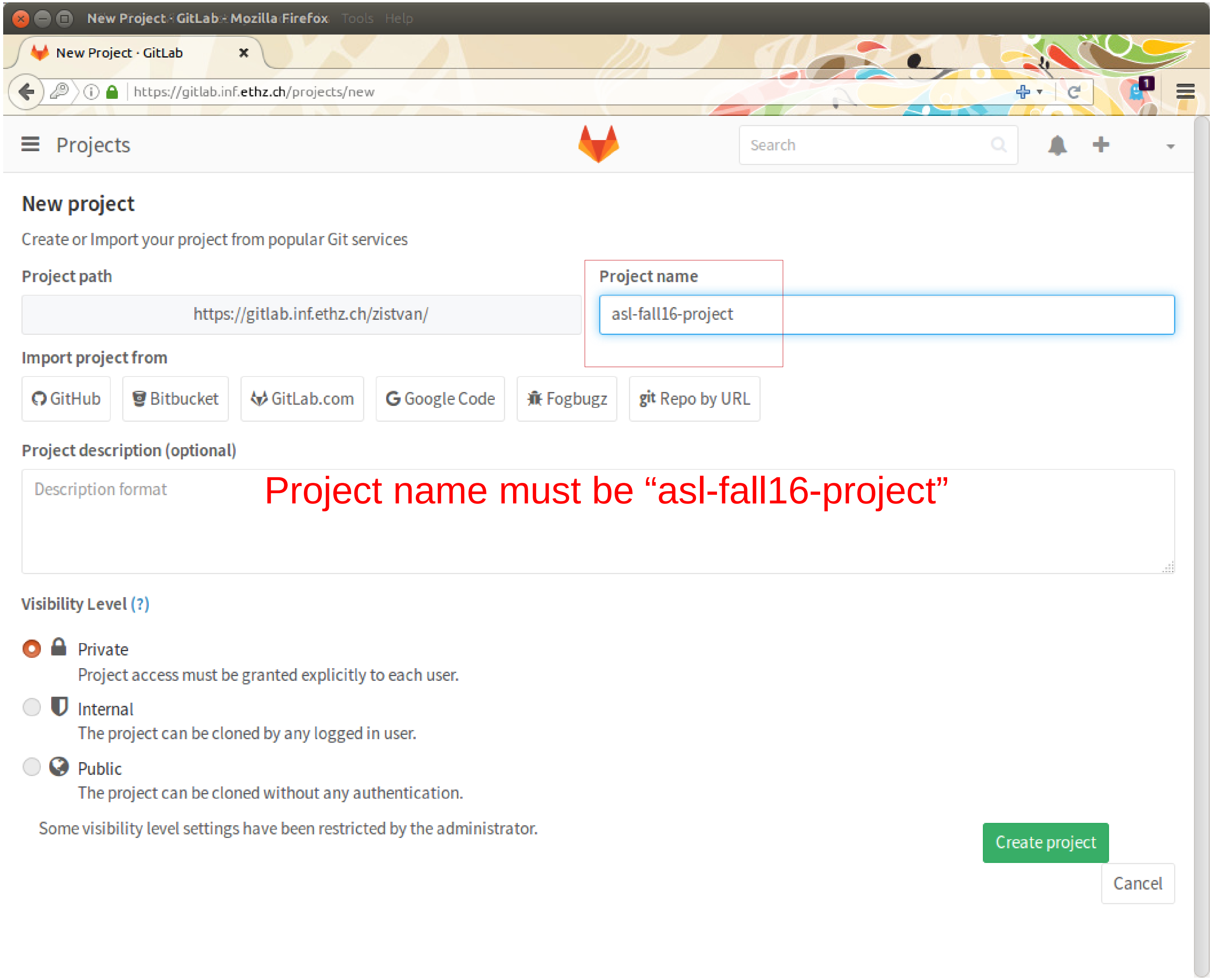


New Project · GitLab - Mozilla Firefox
Tools
Help
New Project · GitLab
https://gitlab.inf.ethz.ch/projects/new
Projects
Search

New project

Create or Import your project from popular Git services

Project path: https://gitlab.inf.ethz.ch/zistvan/

Project name: asl-fall16-project

Import project from

Project description (optional)

Project name must be "asl-fall16-project"

Visibility Level (?)

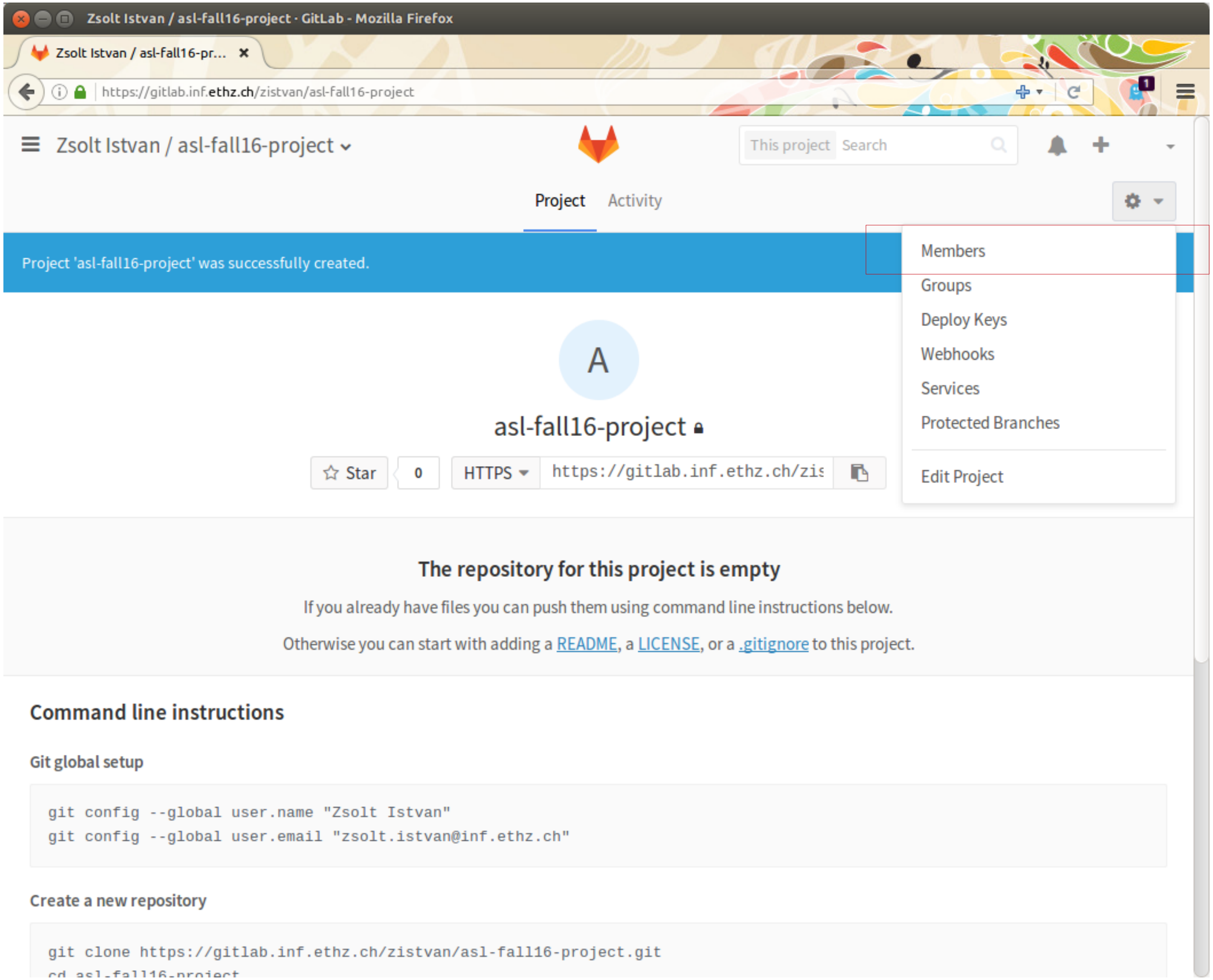
● Private
Project access must be granted explicitly to each user.

○ Internal
The project can be cloned by any logged in user.

○ Public
The project can be cloned without any authentication.

Some visibility level settings have been restricted by the administrator.

Create a repository



Zsolt Istvan / asl-fall16-project · GitLab - Mozilla Firefox
Zsolt Istvan / asl-fall16-pr...
https://gitlab.inf.ethz.ch/zistvan/asl-fall16-project
Zsolt Istvan / asl-fall16-project
This project
Search
Project
Activity
Members
Groups
Deploy Keys
Webhooks
Services
Protected Branches
Edit Project
A
Star
0
HTTPS
https://gitlab.inf.ethz.ch/zis

Project 'asl-fall16-project' was successfully created.

asl-fall16-project

The repository for this project is empty

If you already have files you can push them using command line instructions below.

Otherwise you can start with adding a README, a LICENSE, or a .gitignore to this project.

Command line instructions

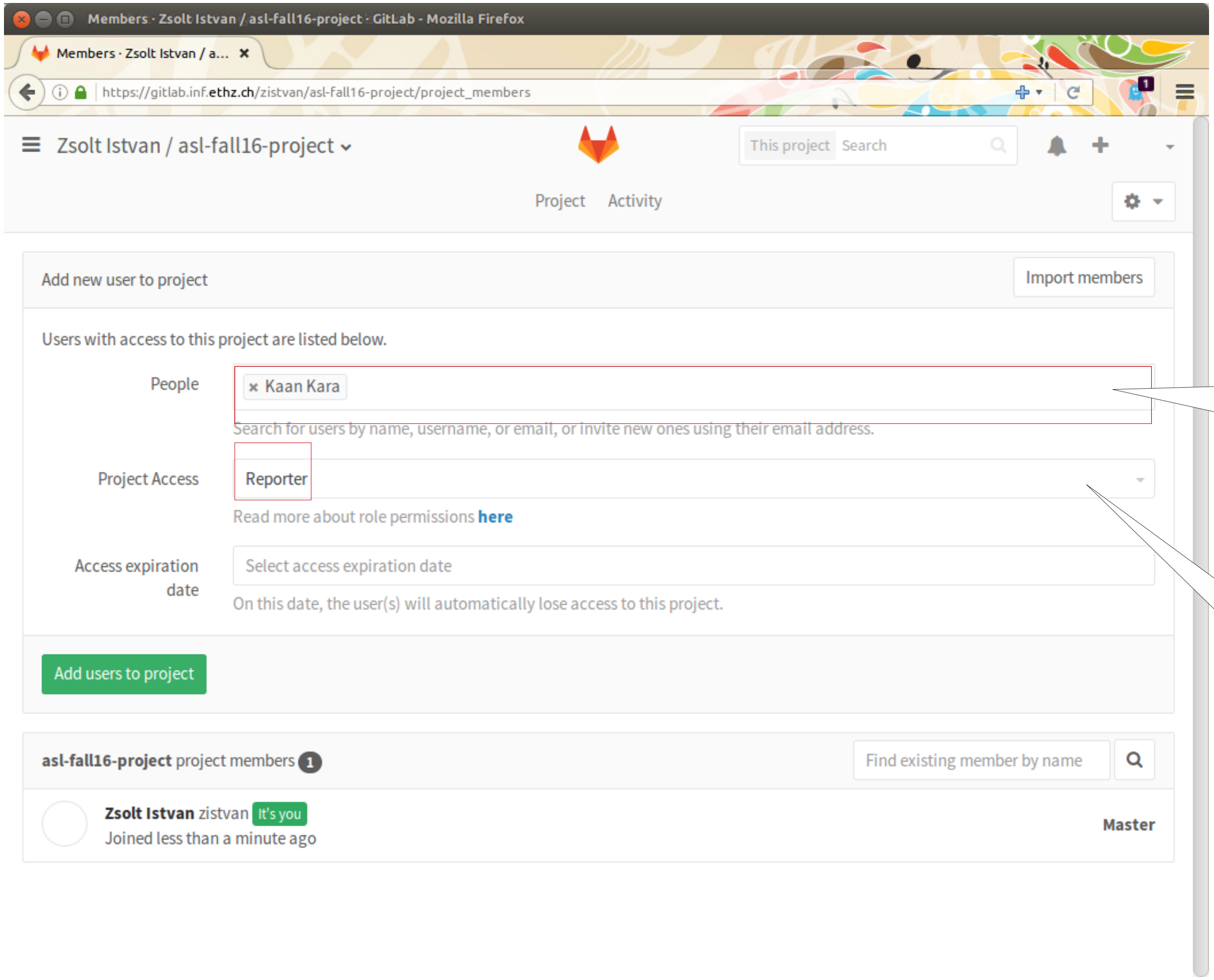
Git global setup

```
git config --global user.name "Zsolt Istvan"
git config --global user.email "zsolt.istvan@inf.ethz.ch"
```

Create a new repository

```
git clone https://gitlab.inf.ethz.ch/zistvan/asl-fall16-project.git
cd asl-fall16-project
```

Create a repository



Members · Zsolt Istvan / asl-fall16-project · GitLab - Mozilla Firefox

https://gitlab.inf.ethz.ch/zistvan/asl-fall16-project/project_members

Zsolt Istvan / asl-fall16-project

Add new user to project

Users with access to this project are listed below.

People: Kaan Kara

Search for users by name, username, or email, or invite new ones using their email address.

Project Access: Reporter

Read more about role permissions **here**

Access expiration date: Select access expiration date

On this date, the user(s) will automatically lose access to this project.

asl-fall16-project project members 1

Zsolt Istvan zistvan It's you

Joined less than a minute ago

Master

kkara
mewaida
zistvan
claudeb
dasidler

Add all of us to the project as “Reporter”, so that we can check out the code.

Once the repository has been created...

- Send an email to your TA (find him on the website) with subject “**ASL Azure Voucher**”
- First line: **your short nethz login**
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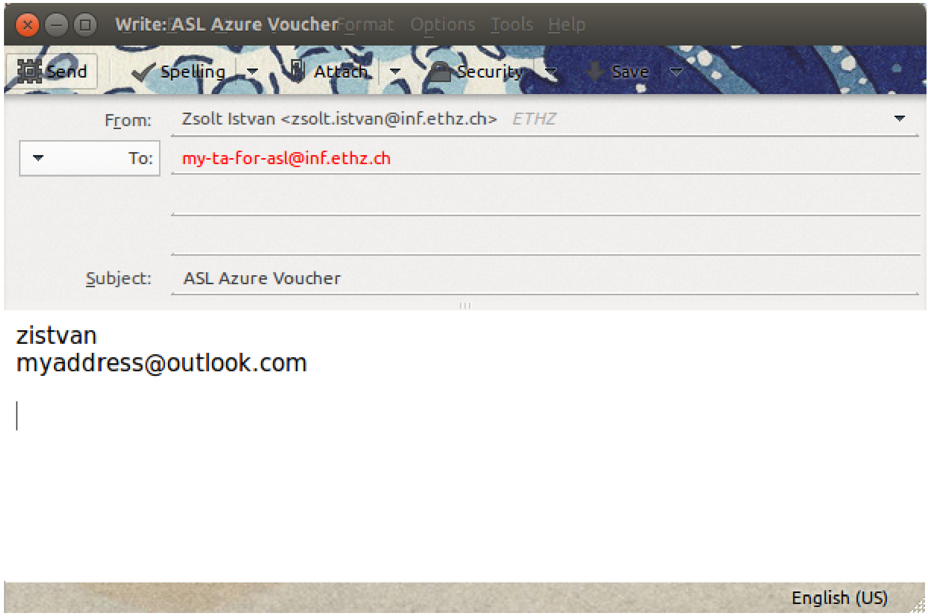
After you sent this email, you will get an automated response on the MS account; follow instructions there. Since we will enter your details by hand, this might take 1-2 days.



From: Zsolt Istvan <zsolt.istvan@inf.ethz.ch> *ETHZ*

To: my-ta-for-asl@inf.ethz.ch

Subject: ASL Azure Voucher

zistvan
myaddress@outlook.com

Installing memcached and memaslap

Required software on Azure VMs

```
echo "Install build tools and memcached"
sudo apt-get install build-essential libevent-dev memcached

echo "Get and build memaslap (will take a while)"
#use exactly this version of libmemcached!
wget https://launchpad.net/libmemcached/1.0/1.0.18/+download/libmemcached-1.0.18.tar.gz
tar xvf libmemcached-1.0.18.tar.gz
cd libmemcached-1.0.18
export LDFLAGS=-lpthread
./configure --enable-memaslap && make clients/memaslap
```

Remarks on memcached and memaslap

- Installing memcached should be fast. Once installed, start it with:

```
memcached -p 11212 -t 1
```

  - Run it with 1 thread (this is the default setup for all experiments)

- Building memaslap will take minutes, so we recommend building it once, and then scp'ing it to new machines.
  - To start the clients use (in clients/):

```
./memaslap -s <server>:11212 -T 64 -c 64 -o1 -S 1s -t <time> -F <workloadconfig>
```

  - We will provide you with example configuration files (define read-write mix and value size), and you can create your own quite easily.
  - Pipe output to a text file so that you can plot throughput, response times later
  - For more info: http://docs.libmemcached.org/bin/memaslap.html

Bash Tutorial

Comments from previous years

- “I had to stay up all night to run experiments!”
- “I cannot work on this from home...”
- “It took us more than 40hr./week to work on this milestone.”
- Solution is simple

Automate the experiments!

Bash Basics

- Bash is the command line interface used by most Linux systems
- On Windows: Use Putty to connect to a remote machine
- Most Bash-commands are simple programs that are executed
- Recommended for automating experiments
  - Feel free to use other scripting languages (Python, ...)

Running Bash Commands

```
command arg1 arg2
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# starts a command prompt returns as soon as the command finished

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command arg1 arg2 &
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# runs the command in the background

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Conditionals in Bash

```
MYVAR=foo
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for i in $(ls)
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for i in `seq 1 10`
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COUNTER=0
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  echo The counter is $COUNTER
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done
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Running across multiple machines

- Use SSH and SCP
  - `ssh darkoma@optimus.ethz.ch`
    - Login to machine called optimus.ethz.ch as user darkoma
  - `ssh darkoma@optimus.ethz.ch "ls"`
    - Execute command "ls" on optimus as user darkoma
    - This is great for scripting!!!
  - `scp project.jar darkoma@optimus.ethz.ch:~/asl`
    - Copy project.jar to ~/asl on optimus
- Hints:
  - To use ssh and scp in scripts use public key for passwordless authentication
  - Use ssh -i <some-key> to use a different key-pair from your default one

Enabling Passwordless Login

- To enable passwordless login on local machine:

```
 cat ~/.ssh/id_rsa.pub >>
~/.ssh/authorized_keys
```

- To enable passwordless login on remote machine:

```
 ssh-copy-id <username>@<machine>
```

- If there is no id_rsa.pub:

```
 ssh-keygen
```

- And don't give a password

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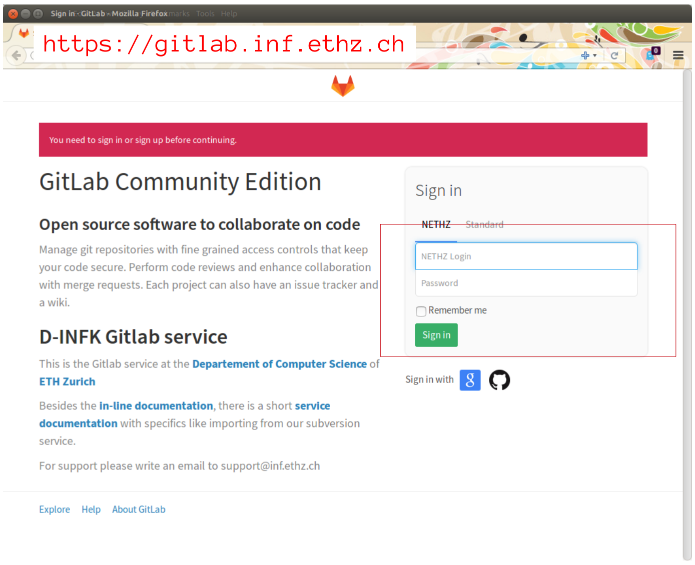

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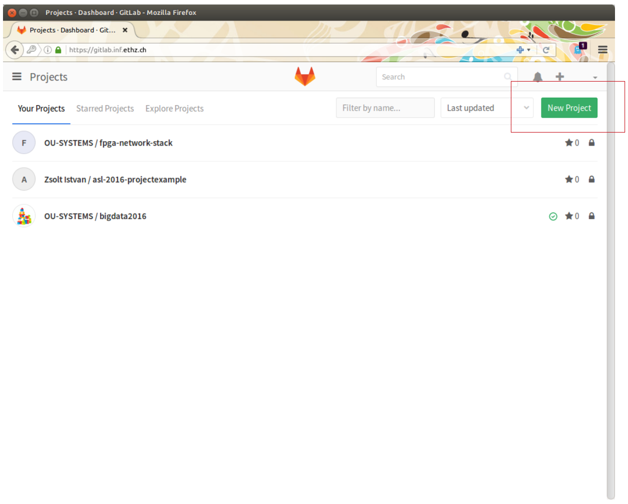
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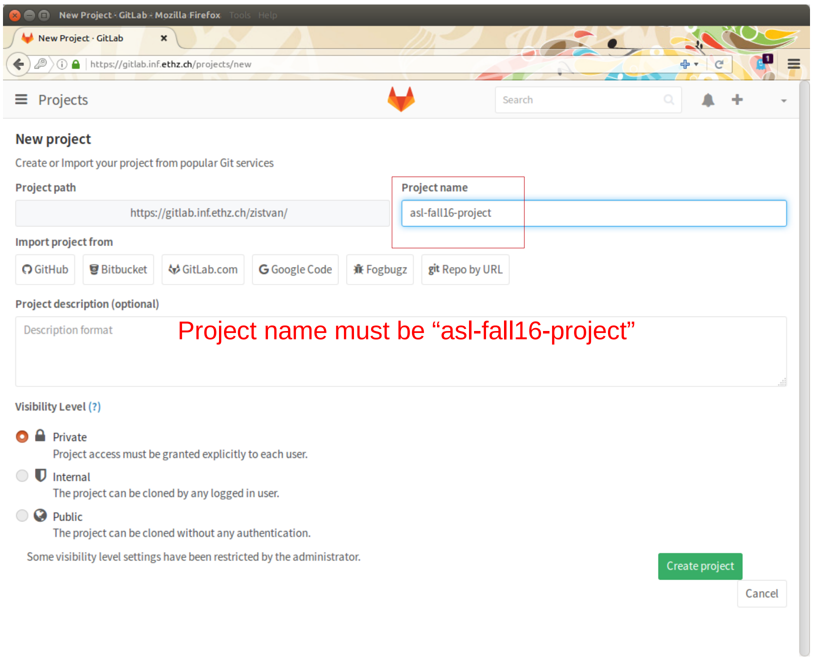

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Create or Import your project from popular Git services

Project path: https://gitlab.inf.ethz.ch/zistvan/

Project name: asl-fall16-project

Import project from

Project description (optional)

Project name must be “asl-fall16-project”

Visibility Level (?)

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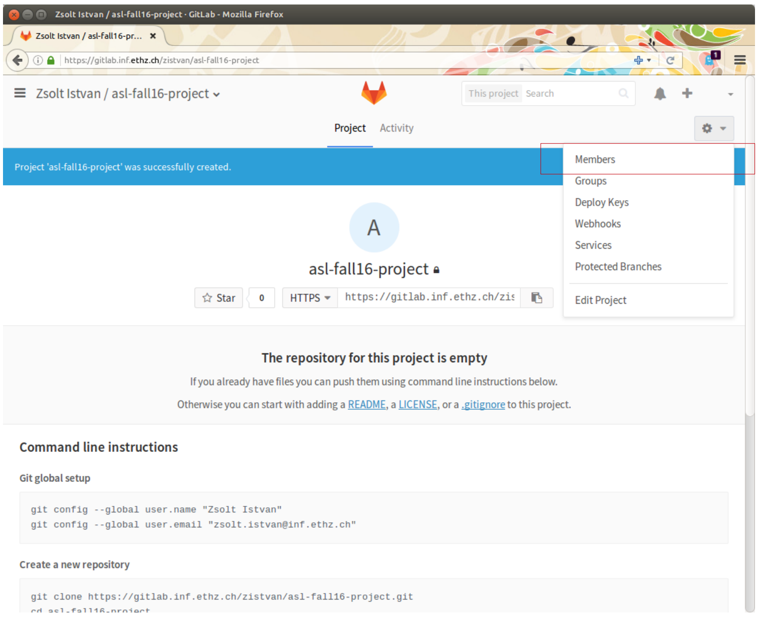

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Zsolt Istvan / asl-fall16-project
This project
Search
Project
Activity
Members
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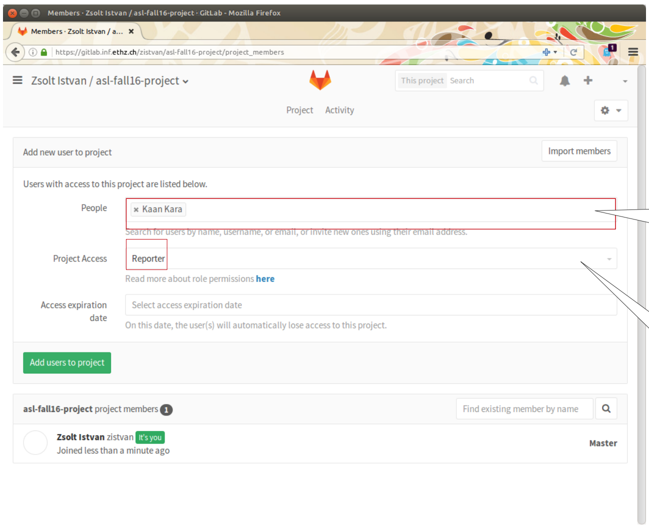

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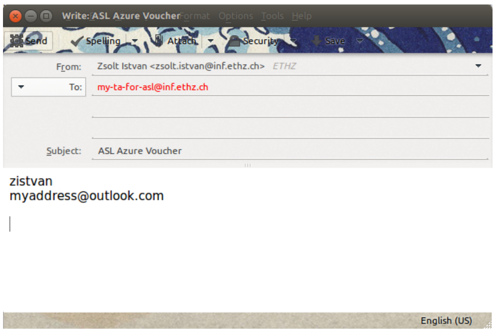

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cd libmemcached-1.0.18

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 cat ~/.ssh/id_rsa.pub >>
~/.ssh/authorized_keys
```

- To enable passwordless login on remote machine:

```
ssh-copy-id <username>@<machine>
```

- If there is no id_rsa.pub:

```
ssh-keygen
```

- And don't give a password