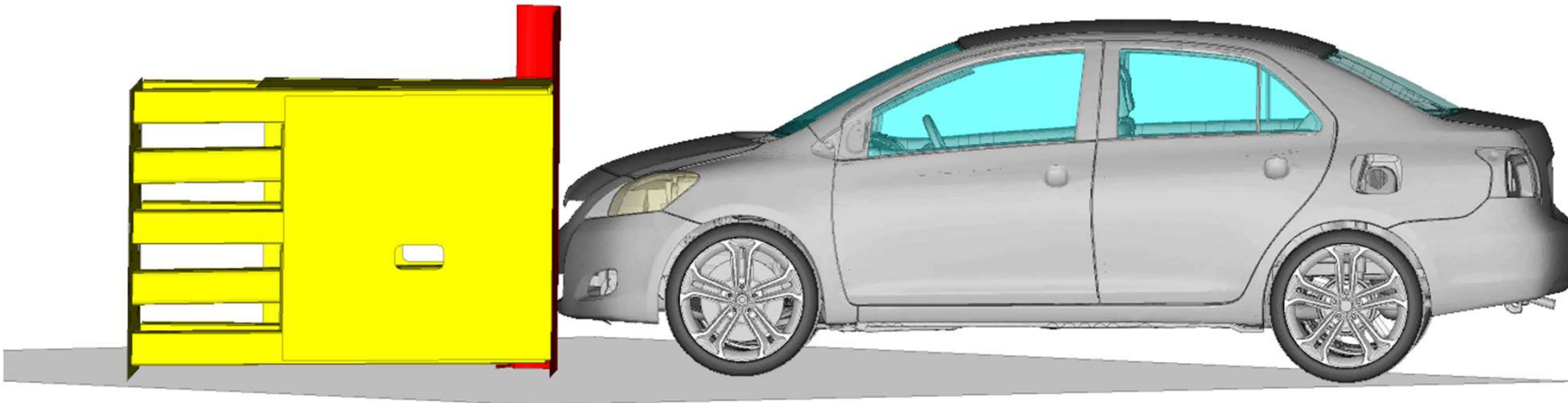


## Tutorial: How to get access to OpenRadioss™

2022.09.08 - Marian Bulla

# OpenRadioss™

1: Yaris\_SORB\_14  
Loadcase 1 : Time = 0.0000e+00 : Frame 1



# OpenRadioss™

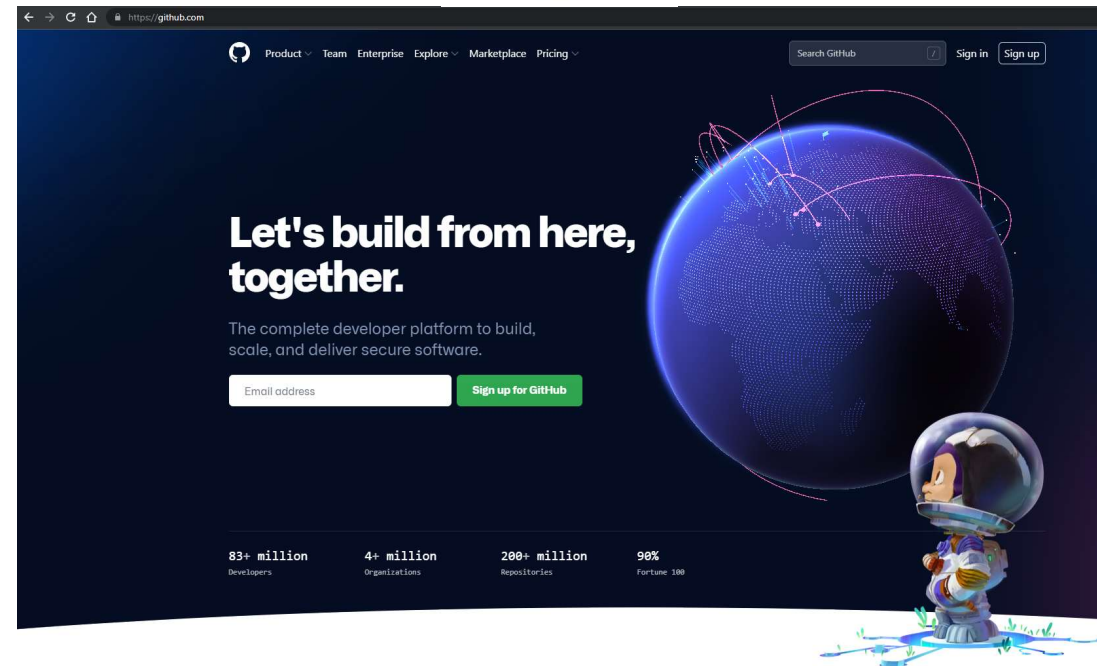
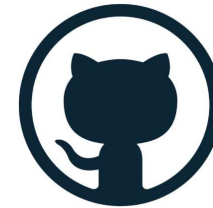
→ Steps to access OpenRadioss™:

- ❖ Get GitHub account
- ❖ On Windows: Install WSL (**W**indows **S**ubsystem for **L**inux)
  - ❖ **Alternatively: Install Lubuntu in VirtualBox**
- ❖ Fork the OpenRadioss repository
- ❖ Install lfs (git Large File System)
- ❖ Clone your fork
- ❖ Start developing
- ❖ Contribute: Submit a pull request
- ❖ Local compilation
- ❖ Start your new compiled OpenRadioss™ executable. Two examples:
  - ❖ Radioss formatted model
  - ❖ LS-Dyna formatted model
- ❖ Enjoy your developments 😊

# OpenRadioss™

→ Steps to access OpenRadioss:

❖ Apply for a GitHub account: <https://github.com/>



❖ Activate two-factor authentication (2FA) !!!

❖ Settings → Password and authentication → Enable “Two-factor authentication”

# OpenRadioss™



→ Steps to access OpenRadioss:

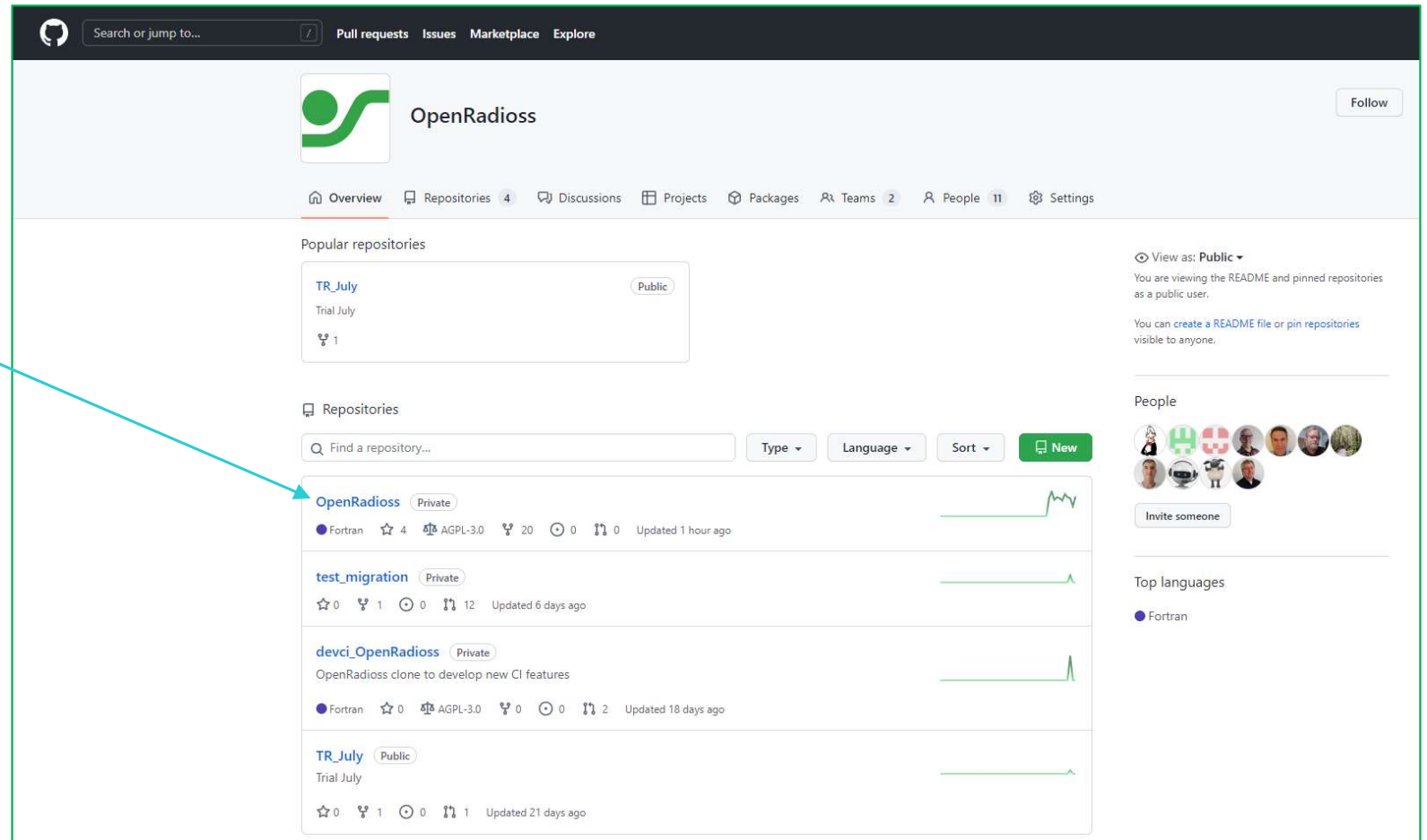
❖ Fine tuning: Emails

Your **github** e-mail.  
Will be used later...

The screenshot shows the GitHub account settings page, specifically the 'Emails' section. The left sidebar contains various settings categories: Public profile, Account, Appearance, Accessibility, Notifications, Access, Billing and plans, **Emails**, Password and authentication, SSH and GPG keys, Organizations, Moderation, Code, planning, and automation, Repositories, Packages, GitHub Copilot, Pages, Saved replies, Security, Code security and analysis, Integrations, Applications, Scheduled reminders, Archives, Security log, Sponsorship log, and Developer settings. The main content area is titled 'Emails' and shows a list of email addresses. The first email address, 'bulla@altair.com - Primary', is circled in red. Below it, there are two options: 'Not visible in emails' and 'Receives notifications'. The 'Add email address' section has an input field for 'Email address' and an 'Add' button. The 'Primary email address' section explains that 'bulla@altair.com' will be used for account-related notifications and password resets. The 'Backup email address' section has a dropdown menu set to 'Allow all verified emails' and a 'Save' button. Below this, there are two checkboxes: 'Keep my email addresses private' (checked) and 'Block command line pushes that expose my email' (checked). The 'Email preferences' section has two radio buttons: 'Receive all emails, except those I unsubscribe from.' (selected) and 'Only receive account related emails, and those I subscribe to.' There is a 'Save email preferences' button at the bottom.

# OpenRadioss™

Click here to access  
the OpenRadioss™ repository



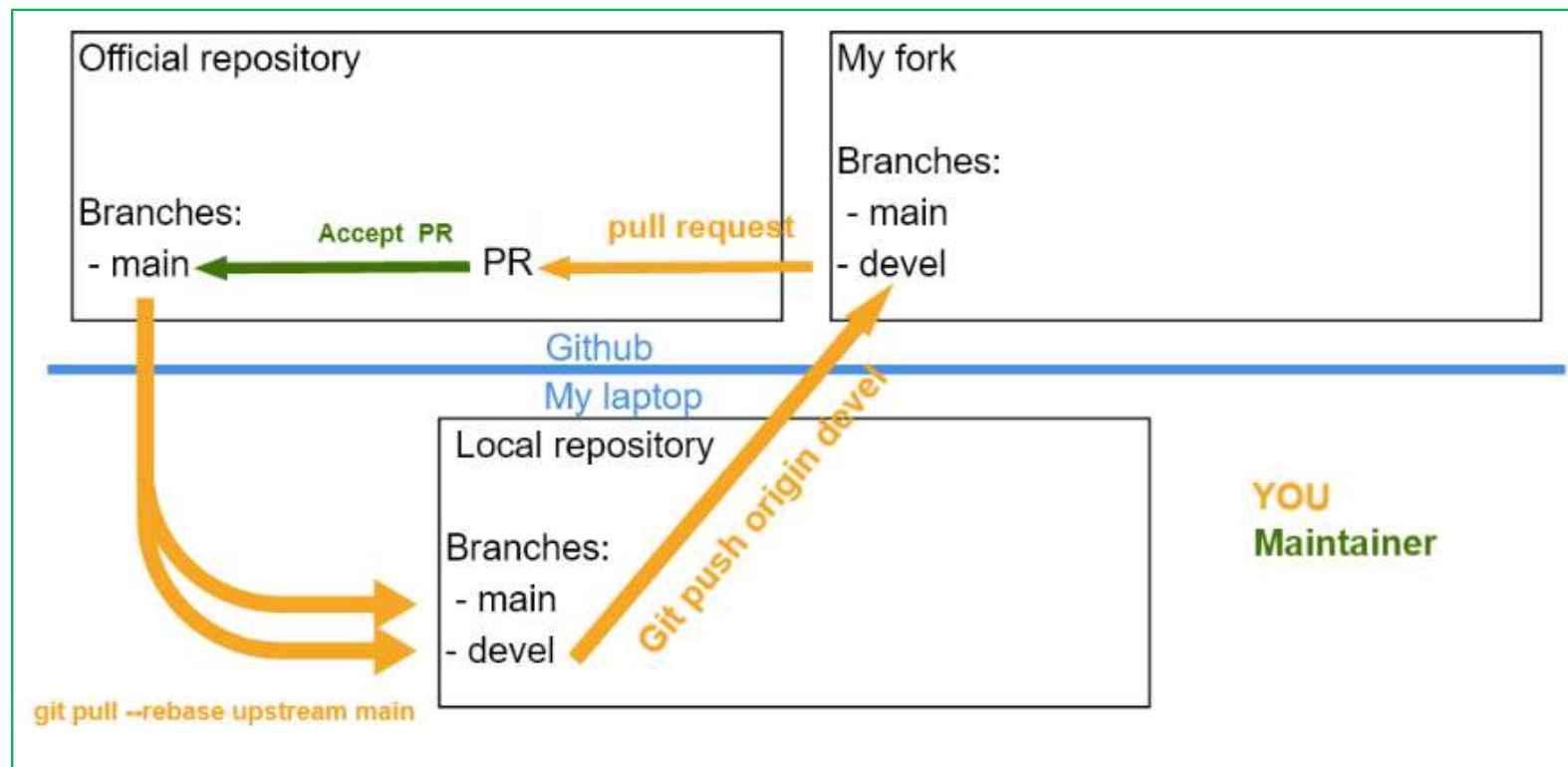
The screenshot shows the GitHub profile page for OpenRadioss. At the top, there is a search bar and navigation links for Pull requests, Issues, Marketplace, and Explore. The profile header includes the OpenRadioss logo, the name 'OpenRadioss', and a 'Follow' button. Below the header, there are navigation tabs for Overview, Repositories (4), Discussions, Projects, Packages, Teams (2), People (11), and Settings. The main content area is divided into 'Popular repositories' and a list of 'Repositories'. The 'Popular repositories' section shows a single repository, 'TR\_July', which is public. The 'Repositories' section has a search bar and filters for Type, Language, and Sort, along with a 'New' button. The repository list includes:

- OpenRadioss** (Private): Fortran, 4 stars, AGPL-3.0 license, 20 forks, 0 issues, 0 pull requests, updated 1 hour ago.
- test\_migration** (Private): 0 stars, 1 fork, 0 issues, 12 pull requests, updated 6 days ago.
- devci\_OpenRadioss** (Private): Fortran, 0 stars, AGPL-3.0 license, 0 forks, 0 issues, 2 pull requests, updated 18 days ago.
- TR\_July** (Public): Trial July, 0 stars, 1 fork, 0 issues, 1 pull request, updated 21 days ago.

On the right side of the page, there is a 'View as: Public' dropdown, a note about viewing README and pinned repositories, a link to create a README file or pin repositories, a 'People' section with avatars and an 'Invite someone' button, and a 'Top languages' section showing Fortran as the primary language.

# OpenRadioss™

## ➤ Contribution workflow:



# OpenRadioss™

→ Steps to access OpenRadioss:

❖ On Windows: Install WSL (Ubuntu) from



<https://docs.microsoft.com/en-us/windows/wsl/install>

## Install Linux on Windows with WSL

Article • 06/27/2022 • 7 minutes to read • 8 contributors



This guide will show you how to install a Linux distribution (such as Ubuntu, OpenSUSE, Kali, Debian, Arch Linux, and more) using the Windows Subsystem for Linux. WSL enables you to use Linux tools, like Bash or Grep, completely integrated with Windows tools, like PowerShell or Visual Studio Code, with no need to dual-boot.

### Prerequisites

You must be running Windows 10 version 2004 and higher (Build 19041 and higher) or Windows 11.

#### Note

To check your Windows version and build number, select **Windows logo key + R**, type **winver**, select **OK**. You can update to the latest Windows version by selecting **Start > Settings > Windows Update > Check for updates**.

If you're running an older build, or just prefer not to use the install command and would like step-by-step directions, see [WSL manual installation steps for older versions](#).

### Install WSL command

You can now install everything you need to run Windows Subsystem for Linux (WSL) by entering this command in an **administrator** PowerShell or Windows Command Prompt and then restarting your machine.

PowerShell



```
wsl --install
```

This command will enable the required optional components, download the latest Linux kernel, set WSL 2 as your default, and install a Linux distribution for you (*Ubuntu by default, see below to change this*).



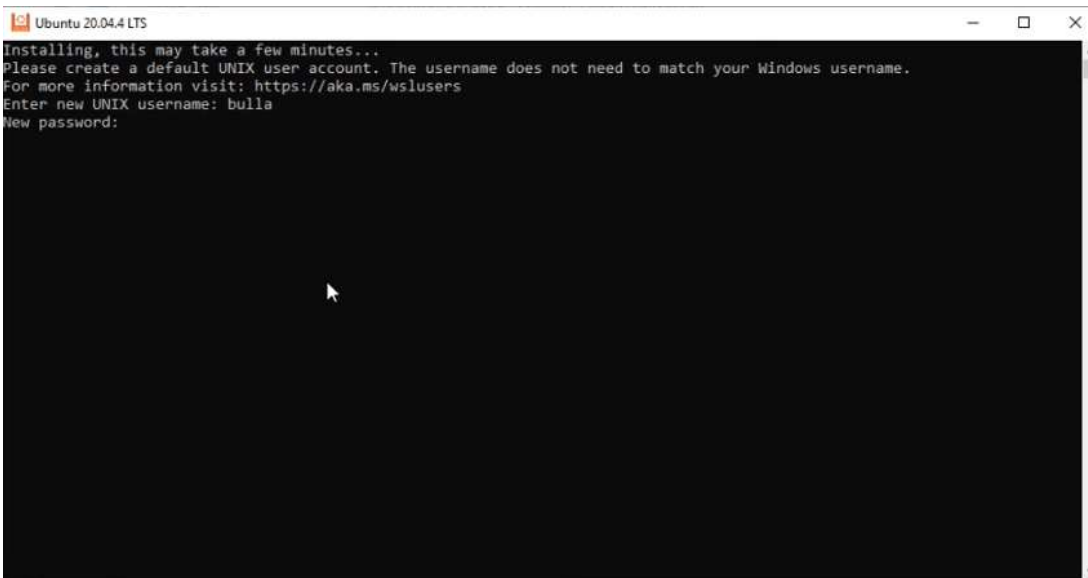
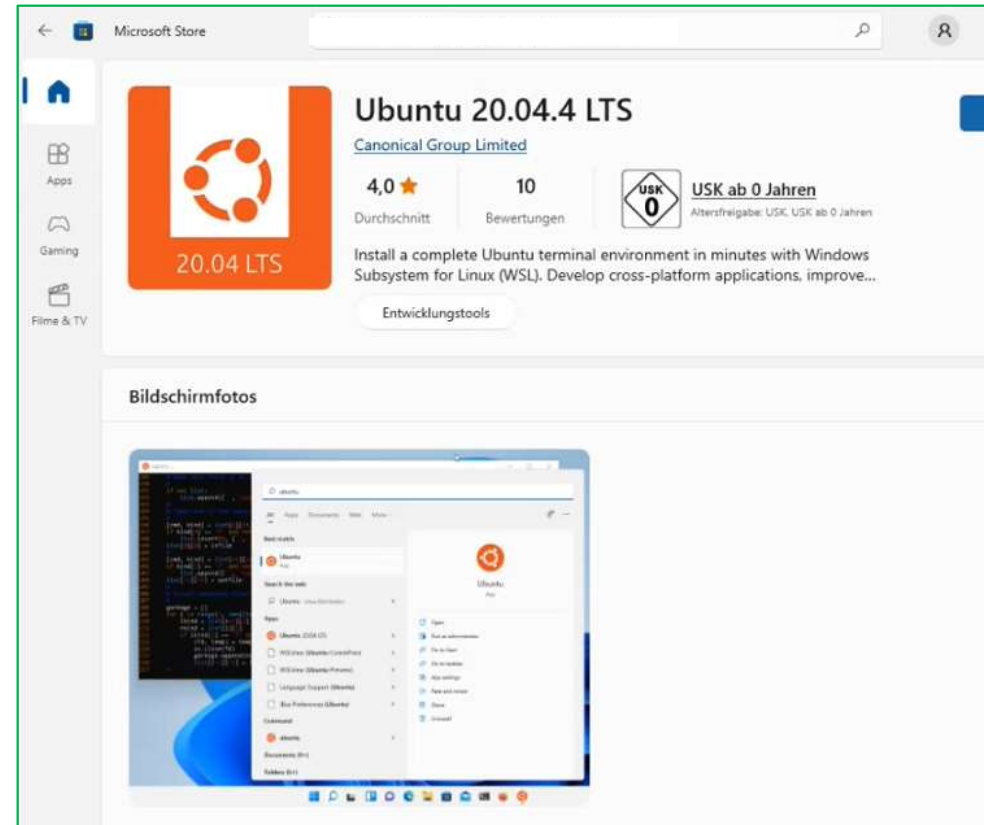
# OpenRadioss™

→ Steps to access OpenRadioss:

❖ On Windows: Install WSL (Ubuntu) from



<https://docs.microsoft.com/en-us/windows/wsl/install>



(Remember your linux-root password for further steps !!!)

# OpenRadioss™

→ Steps to access OpenRadioss:

❖ On Windows: Install WSL (Ubuntu) from



Microsoft Store

➤ In your Linux window (WSL), create an encryption key:

➤ Type: `ssh-keygen -t rsa`

➤ Copy the public key content to your github account:

➤ In → Github → Settings → SSH and GPG keys →

→ 

```
/mnt/d/WS$  
/mnt/d/WS$ ssh-keygen -t rsa
```

→ 

```
~$ cp .ssh/id_rsa.pub /mnt/d/WS/  
~$
```

New SSH key

Public profile

Account

Appearance

Accessibility

Notifications

Access

Billing and plans

Emails

Password and authentication

SSH and GPG keys

Organizations

Moderation

Code, planning, and automation

Repositories

Packages

Pages

Saved replies

SSH keys / Add new

Title

OpenRadioss my laptop

Key

Begins with 'ssh-rsa', 'ecdsa-sha2-nistp256', 'ecdsa-sha2-nistp384', 'ecdsa-sha2-nistp521', 'ssh-ed25519', 'sk-ecdsa-sha2-nistp256@openssh.com', or 'sk-ssh-ed25519@openssh.com'

Add SSH key

→ This step simplifies the data exchange between GitHub and your private workstation.

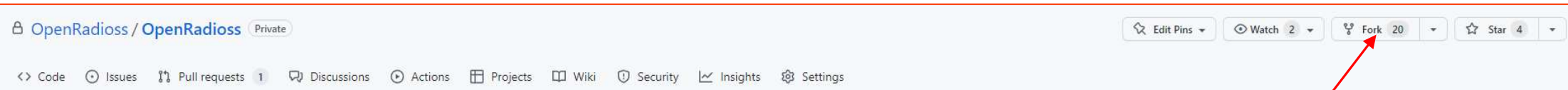
# OpenRadioss™

→ Steps to access OpenRadioss:

❖ On Windows: Install WSL (Ubuntu)

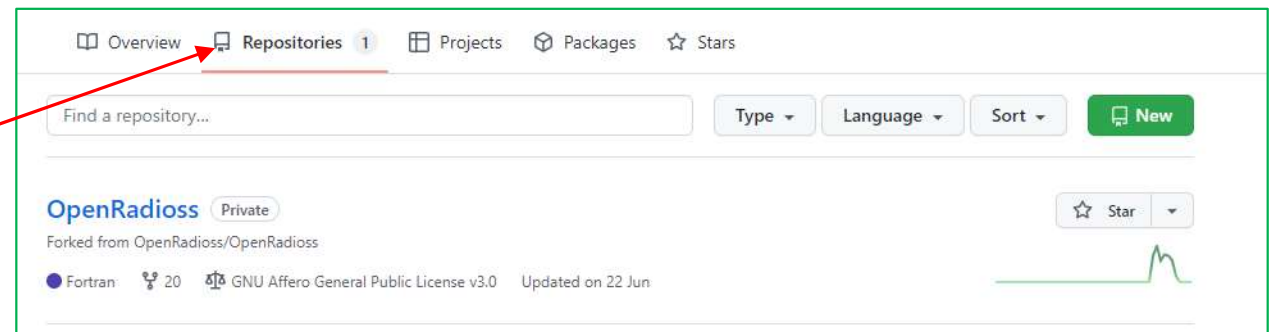
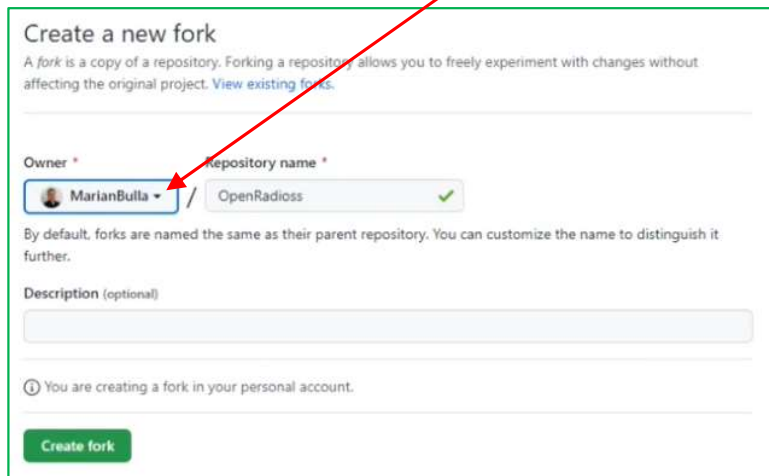
➢ In your Linux window (WSL), ...:

➢ **Fork** the OpenRadioss repository → <https://github.com/OpenRadioss/OpenRadioss/fork>



➢ Change the “Owner \*” to your account, provide a short description, if needed, and click:

**Create fork**



→ A “fork” creates a copy of the official OpenRadioss™ repository (= source code) to your personal GitHub account, for your (and/or your team) personal work.

# OpenRadioss™

→ Steps to access OpenRadioss:

❖ On Windows: Install WSL (Ubuntu)

➤ In your Linux window (WSL), ...:

➤ **Fork** the OpenRadioss repository

➤ Update and install additional Git packages: type “**sudo apt-get**” in the WSL window (for Ubuntu use “**sudo**”):  
(Evtl. an Ubuntu-update is necessary to be done before: `/mnt/d/WS$ sudo apt-get update` )

→ Git LFS is a command line extension and specification for managing large files with Git.

```
/mnt/d/WS$  
/mnt/d/WS$ sudo apt-get install git-lfs
```

→ CMake is used to control the software compilation process using simple platform and compiler independent configuration files.

```
/mnt/d/WS$ sudo apt-get install cmake
```

```
/mnt/d/WS$ sudo apt-get install gfortran
```

```
/mnt/d/WS$ sudo apt-get install g++
```

➤ Compiler test:

```
bulld@DEWL7656:/mnt/d/WS$ gfortran -v  
Using built-in specs.  
COLLECT_GCC=gfortran  
COLLECT_LTO_WRAPPER=/usr/lib/gcc/x86_64-linux-gnu/9/lto-wrapper  
OFFLOAD_TARGET_NAMES=nvptx-none:hsa  
OFFLOAD_TARGET_DEFAULT=1  
Target: x86_64-linux-gnu  
Configured with: ../src/configure -v --with-pkgversion='Ubuntu 9.4.0-1ubuntu1~20.04.1' --with-bugurl=file:///usr/share/doc/gcc-9/README.Bugs --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,gm2 --prefix=/usr --with-gcc-major-version-only --program-suffix=-9 --program-prefix=x86_64-linux-gnu- --enable-shared --enable-linker-build-id --libexecdir=/usr/lib --without-included-gettext --enable-threads=posix --libdir=/usr/lib --enable-nls --enable-clocale=gnu --enable-libstdcxx-debug --enable-libstdcxx-time=yes --with-default-libstdcxx-abi=new --enable-gnu-unique-object --disable-vtable-verify --enable-plugin --enable-default-pie --with-system-zlib --with-target-system-zlib=auto --enable-objc-gc=auto --enable-multiarch --disable-werror --with-arch=32=i686 --with-abi=m64 --with-multilib-list=m32,m64,mx32 --enable-multilib --with-tune=generic --enable-offload-targets=nvptx-none=/build/gcc-9-Av3uEd/gcc-9-9.4.0/debian/tmp-nvptx/usr,hsa --without-cuda-driver --enable-checking=release --build=x86_64-linux-gnu --host=x86_64-linux-gnu --target=x86_64-linux-gnu  
Thread model: posix  
gcc version 9.4.0 (Ubuntu 9.4.0-1ubuntu1~20.04.1)  
bulld@DEWL7656:/mnt/d/WS$
```

# OpenRadioss™

→ Steps to access OpenRadioss:

❖ Clone your fork - preparation

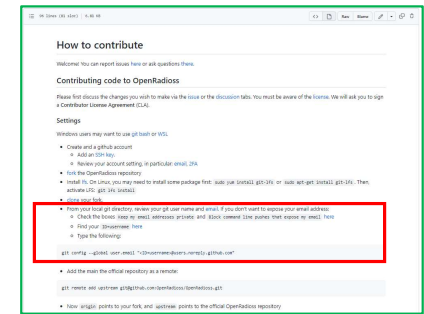
➢ Enter into your Workspace: `~$ cd /mnt/d/WS/`

➢ Enable cloning: `/mnt/d/WS$ git config --global user.email "105412502+MarianBulla@users.noreply.github.com"`

➢ In some cases, if this will not work:

- Go to /etc/ directory and create "wsl.conf" file:
- Add the 2 lines into wsl.conf:
- Close wsl !
- Open powershell.exe
  - Type: `wsl --shutdown`
- Restart wsl

Your github e-mail.  
Will be used, now !



```
-rw-r--r-- 1 root root 4942 Nov 12 2021 wgetrc
-rw-r--r-- 1 root root 33 May 20 15:19 wsl.conf
-rw-r--r-- 1 root root 642 Sep 24 2019 xattr.conf
drwxr-xr-x 4 root root 4096 Mar 24 22:40 xdg/
-rw-r--r-- 1 root root 477 Feb 10 15:11 zsh_command_not_found
bulla@DEWLT656:/etc$
```

```
-rw-r--r-- 1 root root 4942 Nov 12 2021 wgetrc
-rw-r--r-- 1 root root 33 May 20 15:19 wsl.conf
-rw-r--r-- 1 root root 642 Sep 24 2019 xattr.conf
drwxr-xr-x 4 root root 4096 Mar 24 22:40 xdg/
-rw-r--r-- 1 root root 477 Feb 10 15:11 zsh_command_not_found
bulla@DEWLT656:/etc$ vi wsl.conf
bulla@DEWLT656:/etc$ more wsl.conf
[automount]
options = "metadata"
bulla@DEWLT656:/etc$
```

```
Windows PowerShell
Windows PowerShell
Copyright (C) Microsoft Corporation. Alle Rechte vorbehalten.
Lernen Sie das neue plattformübergreifende PowerShell kennen - https://aka.ms/pscore6
PS C:\Windows\System32\WindowsPowerShell\v1.0> wsl --shutdown
```

# OpenRadioss™

Replace with your Git account name!

→ Steps to access OpenRadioss:

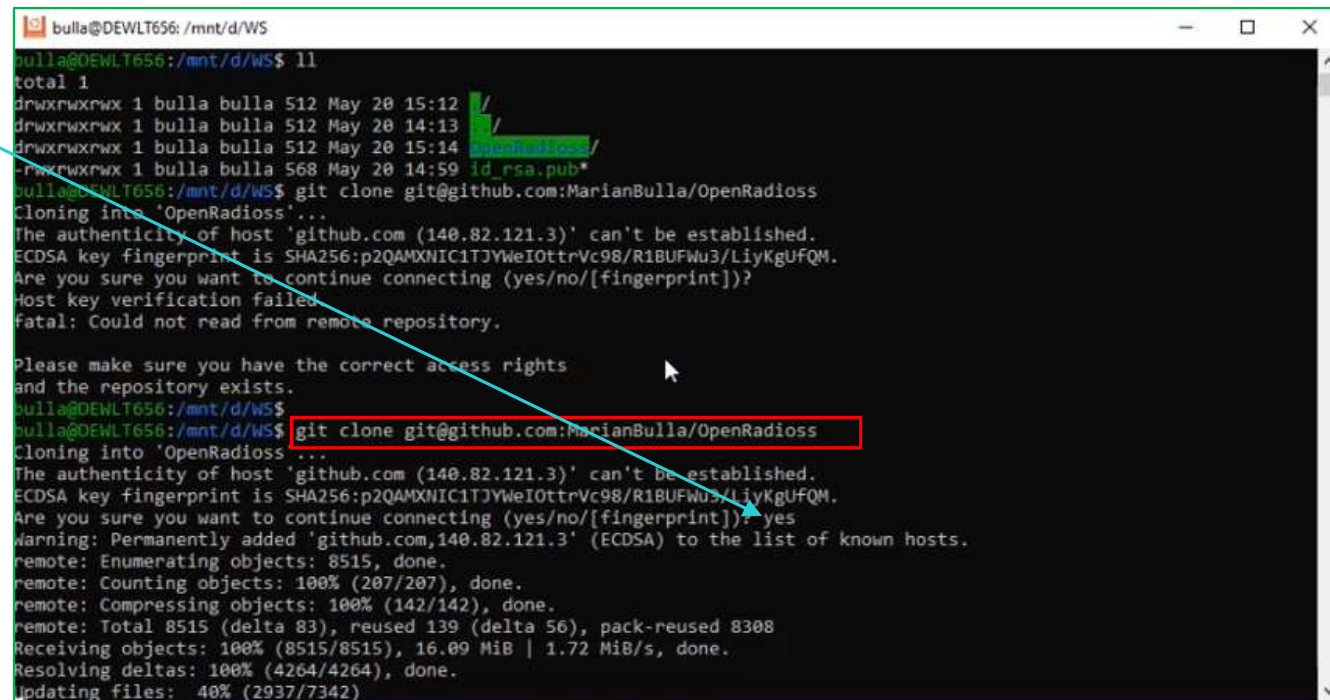
❖ Clone your fork

- **Clone** your fork: “git clone git@github.com:...”
  - Go to your Workspace: (e.g /mnt/d/WS)

Confirm with “yes”

→ “Clone” downloads your git-repository to your local workstation.

```
/mnt/d/WS$ git clone git@github.com:MarianBulla/OpenRadioss
```



```
bullla@DEWLT656: /mnt/d/WS
bullla@DEWLT656:/mnt/d/WS$ ll
total 1
drwxrwxrwx 1 bullla bullla 512 May 20 15:12 /
drwxrwxrwx 1 bullla bullla 512 May 20 14:13 /
drwxrwxrwx 1 bullla bullla 512 May 20 15:14 /mnt/d/WS/
-rwxrwxrwx 1 bullla bullla 568 May 20 14:59 id_rsa.pub*
bullla@DEWLT656:/mnt/d/WS$ git clone git@github.com:MarianBulla/OpenRadioss
Cloning into 'OpenRadioss'...
The authenticity of host 'github.com (140.82.121.3)' can't be established.
ECDSA key fingerprint is SHA256:p2QAMXNIC1TJYWeIOtrVc98/R1BUFWu3/LiyKgUFQM.
Are you sure you want to continue connecting (yes/no/[fingerprint])?
Host key verification failed.
fatal: Could not read from remote repository.

Please make sure you have the correct access rights
and the repository exists.
bullla@DEWLT656:/mnt/d/WS$ git clone git@github.com:MarianBulla/OpenRadioss
Cloning into 'OpenRadioss'...
The authenticity of host 'github.com (140.82.121.3)' can't be established.
ECDSA key fingerprint is SHA256:p2QAMXNIC1TJYWeIOtrVc98/R1BUFWu3/LiyKgUFQM.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
warning: Permanently added 'github.com,140.82.121.3' (ECDSA) to the list of known hosts.
remote: Enumerating objects: 8515, done.
remote: Counting objects: 100% (207/207), done.
remote: Compressing objects: 100% (142/142), done.
remote: Total 8515 (delta 83), reused 139 (delta 56), pack-reused 8308
Receiving objects: 100% (8515/8515), 16.09 MiB | 1.72 MiB/s, done.
Resolving deltas: 100% (4264/4264), done.
Updating files: 40% (2937/7342)
```

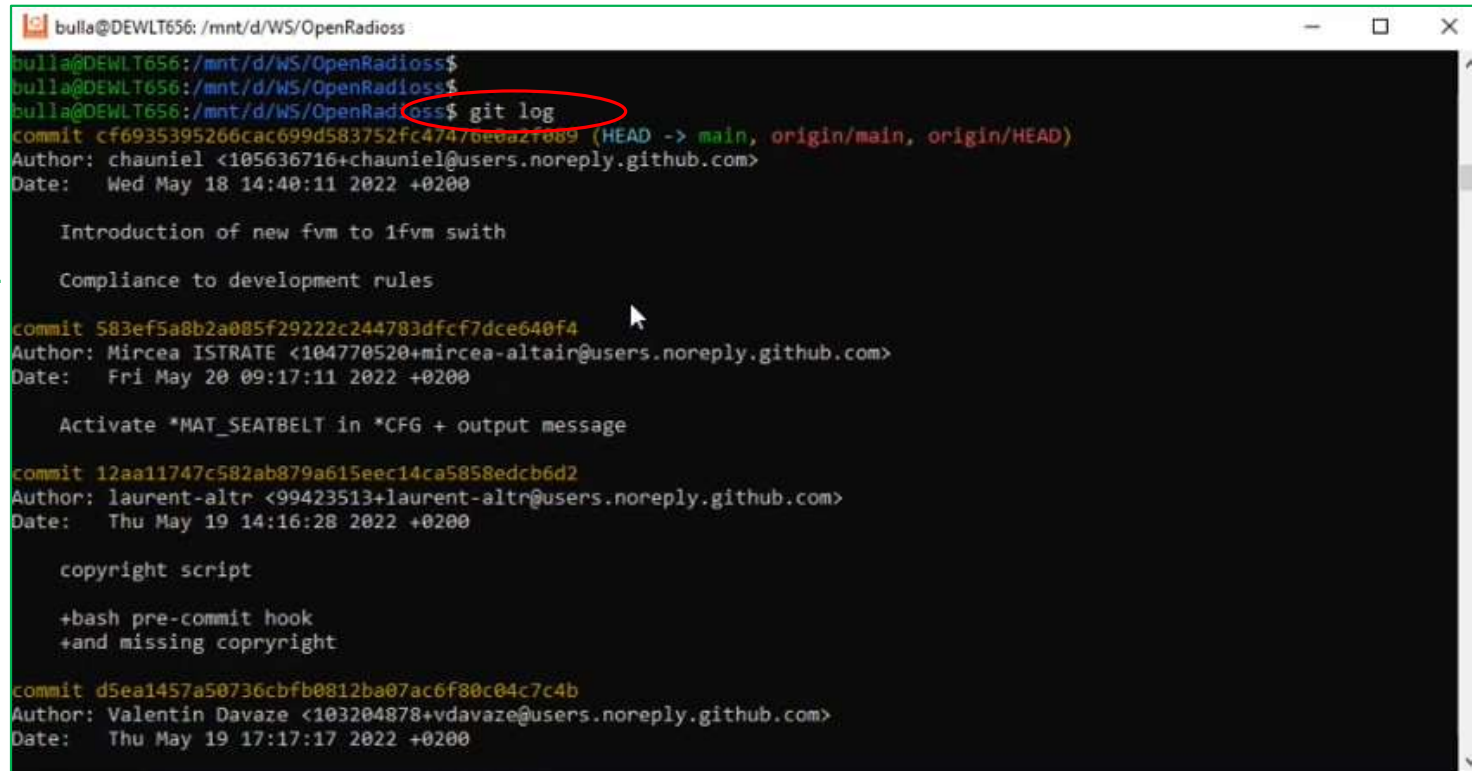
# OpenRadioss™

→ Steps to access OpenRadioss:

❖ Start developing

➤ Test the git history: type “git log”

→ “git log” shows the submitted developments.

A terminal window titled 'bulla@DEWLT656: /mnt/d/WS/OpenRadioss' showing the output of the 'git log' command. The command 'git log' is highlighted with a red circle. The output shows four commits with their respective authors and dates. The commit messages are: 'Introduction of new fvm to 1fvm swith', 'Compliance to development rules', 'Activate \*MAT\_SEATBELT in \*CFG + output message', and 'copyright script'. The terminal also shows the addition of a pre-commit hook and a missing copyright notice.

```
bulla@DEWLT656: /mnt/d/WS/OpenRadioss
bulla@DEWLT656: /mnt/d/WS/OpenRadioss$
bulla@DEWLT656: /mnt/d/WS/OpenRadioss$ git log
commit cf6935395266cac699d583752fc474/0eeazf0b9 (HEAD -> main, origin/main, origin/HEAD)
Author: chauniel <105636716+chauniel@users.noreply.github.com>
Date: Wed May 18 14:40:11 2022 +0200

    Introduction of new fvm to 1fvm swith

    Compliance to development rules

commit 583ef5a8b2a085f29222c244783dfcf7dce640f4
Author: Mircea ISTRATE <104770520+mircea-altair@users.noreply.github.com>
Date: Fri May 20 09:17:11 2022 +0200

    Activate *MAT_SEATBELT in *CFG + output message

commit 12aa11747c582ab879a615eec14ca5858edcb6d2
Author: laurent-altr <99423513+laurent-altr@users.noreply.github.com>
Date: Thu May 19 14:16:28 2022 +0200

    copyright script

    +bash pre-commit hook
    +and missing copyright

commit d5ea1457a50736cbfb0812ba07ac6f80c04c7c4b
Author: Valentin Davaze <103204878+vdavaze@users.noreply.github.com>
Date: Thu May 19 17:17:17 2022 +0200
```

# OpenRadioss™

→ Steps to access OpenRadioss:

❖ Clone your fork

➤ **Prepare** contribution:

- Add the main the official repository as a remote: `git remote add upstream git@github.com:OpenRadioss/OpenRadioss.git`. Now `origin` points to your fork, and `upstream` points to the official OpenRadioss repository
- optional: for git version > 1.7.9 you can set `git config --global pull.rebase true` to force rebasing

```
/mnt/d/WS/OpenRadioss$ git remote add upstream git@github.com:OpenRadioss/OpenRadioss.git
```

```
bullaa@DEWLT656: /mnt/d/WS/OpenRadioss$  
bullaa@DEWLT656: /mnt/d/WS/OpenRadioss$ git config --global pull.rebase true  
bullaa@DEWLT656: /mnt/d/WS/OpenRadioss$ git remote -v  
origin  git@github.com:MarianBulla/OpenRadioss (fetch)  
origin  git@github.com:MarianBulla/OpenRadioss (push)  
upstream  git@github.com:OpenRadioss/OpenRadioss.git (fetch)  
upstream  git@github.com:OpenRadioss/OpenRadioss.git (push)  
bullaa@DEWLT656: /mnt/d/WS/OpenRadioss$  
bullaa@DEWLT656: /mnt/d/WS/OpenRadioss$  
bullaa@DEWLT656: /mnt/d/WS/OpenRadioss$
```

(Replace "MarianBulla" with your name) `$ git config --global user.name "MarianBulla"`



# OpenRadioss™

→ Steps to access OpenRadioss:

❖ Start developing

- Create additional, local branch (if wanted)
- Branch a new development
- Start development
- Submit your development

- “git checkout -b” creates a new local branch.
- “git checkout xxx” switches to a different branch.
- “git add xxx” marks a new file for contribution.
- “git commit -m xxx” commits the added files.
- “git log” reviews the recent commits.

```
bullaa@DEWLT656:/mnt/d/WS/OpenRadioss$
bullaa@DEWLT656:/mnt/d/WS/OpenRadioss$
bullaa@DEWLT656:/mnt/d/WS/OpenRadioss$ git branch
* main
bullaa@DEWLT656:/mnt/d/WS/OpenRadioss$ git checkout -b dev_001
Switched to a new branch 'dev_001'
bullaa@DEWLT656:/mnt/d/WS/OpenRadioss$ git branch
* dev_001
  main
bullaa@DEWLT656:/mnt/d/WS/OpenRadioss$
```

```
bullaa@DEWLT656:/mnt/d/WS/OpenRadioss$ git checkout dev_001
Switched to branch 'dev_001'
bullaa@DEWLT656:/mnt/d/WS/OpenRadioss$ git branch
* dev_001
  main
bullaa@DEWLT656:/mnt/d/WS/OpenRadioss$ git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
bullaa@DEWLT656:/mnt/d/WS/OpenRadioss$ git checkout -b dev_002
Switched to a new branch 'dev_002'
bullaa@DEWLT656:/mnt/d/WS/OpenRadioss$ git branch
  dev_001
* dev_002
  main
bullaa@DEWLT656:/mnt/d/WS/OpenRadioss$
```

```
bullaa@DEWLT656:/mnt/d/WS/OpenRadioss$ vi fake_file
```

```
bullaa@DEWLT656:/mnt/d/WS/OpenRadioss$ git add fake_file
bullaa@DEWLT656:/mnt/d/WS/OpenRadioss$ git status
On branch dev_002
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
    modified:   fake_file
```

```
bullaa@DEWLT656:/mnt/d/WS/OpenRadioss$ git commit -m "Mein erster commit"
```

```
bullaa@DEWLT656:/mnt/d/WS/OpenRadioss$ git commit -m "Mein erster commit"
[dev_002 09810be] Mein erster commit
 1 file changed, 1 insertion(+)
bullaa@DEWLT656:/mnt/d/WS/OpenRadioss$ git log
```

```
➤ Auswählen bullaa@DEWLT656:/mnt/d/WS/OpenRadioss
```

```
commit: 09810be2b799d79f9cd22aa89c98ac694ea88625 (HEAD -> dev_002)
Author: MarianBulla <105412502+MarianBulla@users.noreply.github.com>
Date: Fri May 20 15:37:30 2022 +0200
```

```
Mein erster commit
```

# OpenRadioss™

➔ Steps to access OpenRadioss:

❖ Start developing

- Create additional, local branch (if wanted)
- Branch a new development
- Start development
- Submit your development
- Push & Pull request:

```
bull@DEWLT656:/mnt/d/WS/OpenRadioss$ git branch
  dev_001
* dev_002
  main
bull@DEWLT656:/mnt/d/WS/OpenRadioss$ git push -f origin dev_002
Enumerating objects: 8, done.
Counting objects: 100% (8/8), done.
Delta compression using up to 16 threads
Compressing objects: 100% (6/6), done.
Writing objects: 100% (6/6), 592 bytes | 98.00 KiB/s, done.
Total 6 (delta 3), reused 0 (delta 0)
remote: Resolving deltas: 100% (3/3), completed with 1 local object.
remote:
remote: Create a pull request for 'dev_002' on GitHub by visiting:
remote:   https://github.com/MarianBulla/OpenRadioss/pull/new/dev_002
remote:
To github.com:MarianBulla/OpenRadioss
 * [new branch] dev_002 -> dev_002
bull@DEWLT656:/mnt/d/WS/OpenRadioss$
```

MarianBulla / OpenRadioss Private  
forked from OpenRadioss/OpenRadioss

<> Code Pull requests Actions Projects Wiki Security Insights Settings

dev\_002 had recent pushes less than a minute ago [Compare & pull request](#)

main 1 branch 0 tags [Go to file](#) [Add file](#) [Code](#)

This branch is up to date with OpenRadioss/OpenRadioss:main. [Contribute](#) [Fetch upstream](#)

File	Commit	Time
.github	update pr template	2 days ago
Compiling_tools/script	OpenRadioss	10 days ago
common_source	Introduction of new frm to 1frm swith	5 hours ago
doc	OpenRadioss	10 days ago
engine	Introduction of new frm to 1frm swith	5 hours ago
extlib	Uptdade New Radioss reader library and new D2R library	yesterday
hm_cfg_files	Activate *MAT_SEATBELT in *CFG + output message	6 hours ago
qa-tests	Modif qa tools remove print lines	8 days ago
scripts/copyright	copyright script	6 hours ago
starter	copyright script	6 hours ago
.gitattributes	OpenRadioss	10 days ago
.gitignore	ignore .bak	2 days ago

About  
No description, website, or topics provided.

Releases  
No releases published  
[Create a new release](#)

Packages  
No packages published  
[Publish your first package](#)

Languages

- Fortran 96.1%
- Perl 0.5%
- Fortb 0.5%
- C 1.0%
- HTML 0.5%
- C++ 0.9%
- Other 0.5%

dev\_002

Commits on May 20, 2022

- Mein erster commit  
MarianBulla committed 2 minutes ago  
31d82ad
- Introduction of new frm to 1frm swith  
chauniel authored and sebastienVilleneuve committed 5 hours ago  
cf69353
- Activate \*MAT\_SEATBELT in \*CFG + output message  
mircea-altar authored and sebastienVilleneuve committed 6 hours ago  
583ef5a
- copyright script  
laurent-utr authored and sebastienVilleneuve committed 6 hours ago  
12a8117

Commits on May 19, 2022

# OpenRadioss™

→ Steps to access OpenRadioss:

❖ Start developing

- Create additional, local branch (if wanted)
- Branch a new development
- Start development
- Submit your development
- Push & Pull request:

dev\_002 had recent pushes 1 minute ago [Compare & pull request](#)

Filters  [Labels 9](#) [Milestones 0](#) [New pull request](#)

## Welcome to pull requests!

### Open a pull request

Create a new pull request by comparing changes across two branches. If you need to, you can also compare across forks.

base repository: OpenRadioss/OpenRadioss base: main ← head repository: MarianBulla/OpenRadioss compare: dev\_002

✓ Able to merge. These branches can be automatically merged.

Write Preview **H B I**

Mein zweiter commit

#### Prerequisites

- <!-- Check [x] all boxes -->
- [ ] Only one commit (please squash your commits)
- [ ] No merge commits (use git pull --rebase)
- [ ] The changes satisfy the DOS and DONTS of the README.md file

<|----- Provide a general summary of your changes in the Title above -->

#### Description of the feature or the bug

<!-- Describe the problem, ideally from the user viewpoint -->

#### Description of the changes

<!-- Say how you fixed the problem. Please describe your code changes in detail for reviewer -->

<!-- If there is a design document, link to it here -->

Attach files by dragging & dropping, selecting or pasting them.

Allow edits by maintainers [?](#) [Create pull request](#)

# OpenRadioss™

→ Steps to access OpenRadioss:

❖ Start developing

➤ Local compilation: - starter

```
/mnt/d/WS$  
/mnt/d/WS$ cd OpenRadioss/starter/  
/mnt/d/WS/OpenRadioss/starter$ ./build_script.sh -arch=linux64_gf -nt=4
```



```
[ 99%] Building Fortran object CMakeFiles/starter_linux64_gf.dir/source/output/qaprint/st_qaprint_ebcs.F.o  
[ 99%] Building Fortran object CMakeFiles/starter_linux64_gf.dir/source/restart/ddsplitt/c_iebcs.F.o  
[ 99%] Building Fortran object CMakeFiles/starter_linux64_gf.dir/source/restart/ddsplitt/ddsplitt.F.o  
[ 99%] Building Fortran object CMakeFiles/starter_linux64_gf.dir/source/starter/lectur.F.o  
[ 99%] Building Fortran object CMakeFiles/starter_linux64_gf.dir/source/starter/starter0.F.o  
[100%] Linking Fortran executable starter_linux64_gf  
[100%] Built target starter_linux64_gf  
  
-- Copy starter_linux64_gf in ../exec  
bulla@DEWLT656:/mnt/d/WS/OpenRadioss/starter$
```

➤ Local compilation: -engine

```
bulla@DEWLT656:/mnt/d/WS/OpenRadioss/starter$ cd ..  
bulla@DEWLT656:/mnt/d/WS/OpenRadioss$  
bulla@DEWLT656:/mnt/d/WS/OpenRadioss$  
bulla@DEWLT656:/mnt/d/WS/OpenRadioss$  
bulla@DEWLT656:/mnt/d/WS/OpenRadioss$ cd engine/  
bulla@DEWLT656:/mnt/d/WS/OpenRadioss/engine$ ./build_script.sh -arch=linux64_gf -nt=4
```



```
[ 99%] Building Fortran object CMakeFiles/engine_linux64_gf.dir/source/mpi/output/spmd_collect_multi+vm.F.o  
[ 99%] Building Fortran object CMakeFiles/engine_linux64_gf.dir/source/mpi/output/spmd_collect_nlocal.F.o  
[ 99%] Building Fortran object CMakeFiles/engine_linux64_gf.dir/source/output/outfile/check_nan_acc.F.o  
[100%] Linking Fortran executable engine_linux64_gf  
[100%] Built target engine_linux64_gf  
  
-- Copy engine_linux64_gf in ../exec  
bulla@DEWLT656:/mnt/d/WS/OpenRadioss/engine$
```

# OpenRadioss™

## → Before Running OpenRadioss:

### ❖ Set Environment Variables

- Refer to the 'INSTALL.md' file in the GitHub repository
- Extract here for essential environment variables
- **NB. Note difference between variables for self compiled vs downloaded Binary**

### Environment variable

```
export OPENRADIOSS_PATH=[OpenRadioss Root directory]
export RAD_CFG_PATH=$OPENRADIOSS_PATH/hm_cfg_files
export OMP_STACKSIZE=400m
```

If you built OpenRadioss from the source

```
export LD_LIBRARY_PATH=$OPENRADIOSS_PATH/extlib/hm_reader/linux64/:$OPENRADIOSS_PATH/extlib/h3d/lib/linux64/:$LD_LIBRARY_PATH
```

If you downloaded the binaries from [here](#)

```
export LD_LIBRARY_PATH=$OPENRADIOSS_PATH/lib/:$LD_LIBRARY_PATH
```

### Running OpenRadioss without MPI (OpenMP only)

- Define number of OpenMP threads

```
export OMP_NUM_THREADS=N
```

- Run OpenRadioss Starter and Engine from the directory that contains the binaries

```
./starter_linux64_gf -i [Starter input file] -np 1
./engine_linux64_gf -i [Engine input file]
```

### Running OpenRadioss with MPI+OpenMP

- Set up environment variables, assuming that OpenMPI is installed in `/opt/openmpi`

```
export LD_LIBRARY_PATH=/opt/openmpi/lib:$LD_LIBRARY_PATH
export PATH=/opt/openmpi/bin:$PATH
```

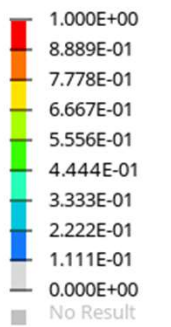
- Run OpenRadioss with P MPI process and N threads per domain from the directory that contains the binaries

```
export OMP_NUM_THREADS=N
./starter_linux64_gf -i [Starter input file] -np P
mpiexec -n P ./engine_linux64_gf_ompi -i [Engine input file]
```

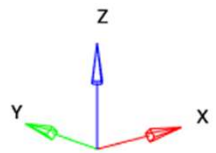
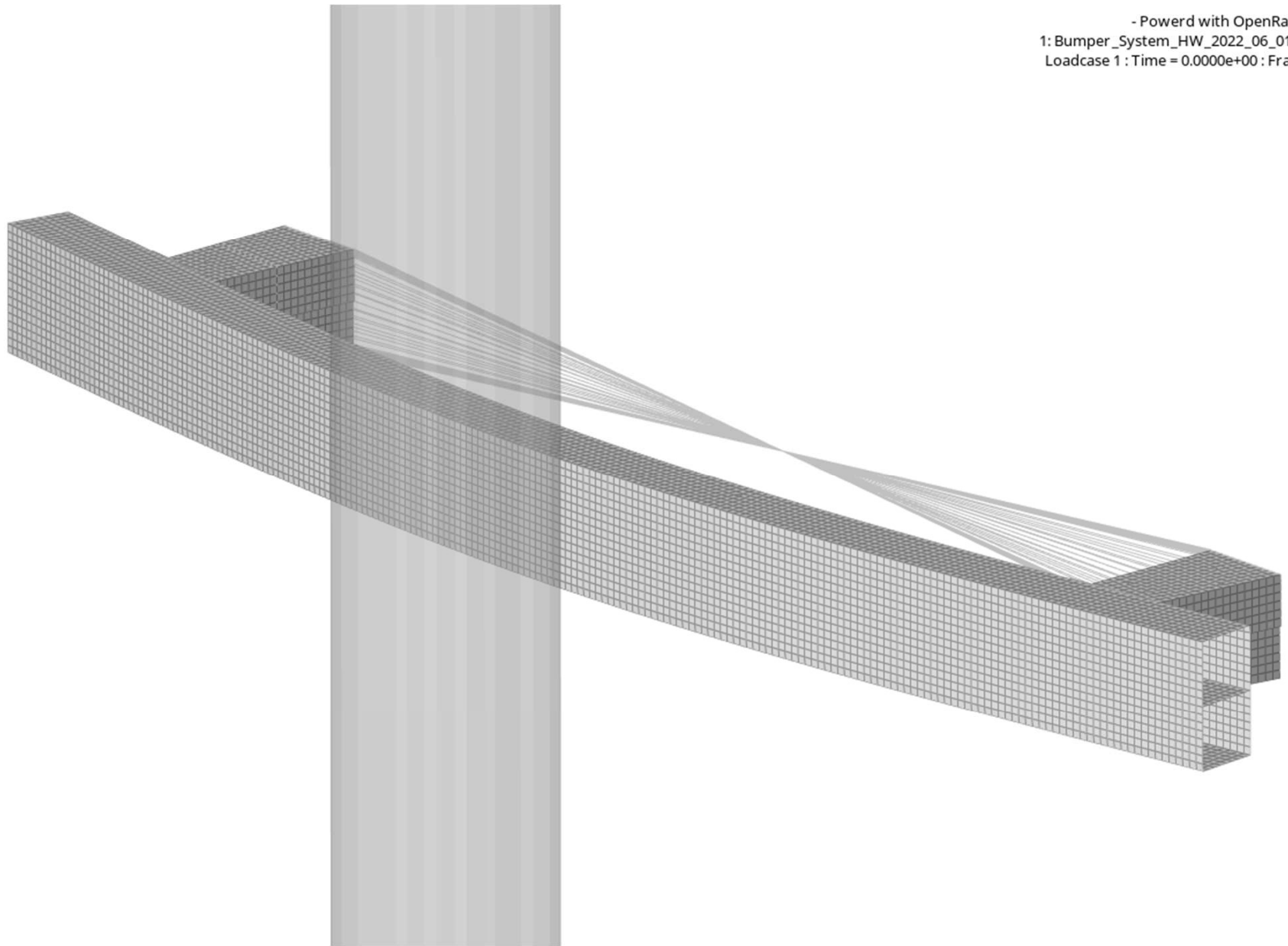


- Powerd with OpenRadioss  
1: Bumper\_System\_HW\_2022\_06\_01\_...  
Loadcase 1 : Time = 0.0000e+00 : Frame 1

Contour Plot  
DAMAGE,(Layer 3)(Scalar value, Mid)



Max = 1.000E+00  
SHELL 1657  
Min = 0.000E+00  
SH3N 1850



# OpenRadioss™

➔ Start a local run of a model using the fresh compiled OpenRadioss™ :

❖ Example #2: local execution/test – using the LS-Dyna model format

```

zug_test3_RS.k
$ $ HM_OUTPUT_DECK created 09:18:53 05-24-2022 by HyperMesh Version 2021.0.0.33
$ $ Ls-dyna Input Deck Generated by HyperMesh Version : 2021.0.0.33
$ $ Generated using HyperMesh-LS-dyna 971_R9.3 Template Version : 2021.0.0.33
*KEYWORD_ID 650000000
zug_test3_RS
$-----1-----2-----3-----4-----5-----6-----7-----8
$ (1) TITLE CARD.
$-----1-----2-----3-----4-----5-----6-----7-----8
*TITLE
zug_test3_RS
*CONTROL_TERMINATION
$ $ ENDTIM ENDCYC DTMIN ENDENG ENDMAS NOSOL
$ $ 40.0
*CONTROL_TIMESTEP
$ $ DTINIT ISSFAC ISDO TSLIMIT DT2MS LCTM ERODE MSIST
$ $ 0.0 0.9
$ $ DT2MSF DT2MSLC IMSCL RMSCL
$ $ 0.0 0
*CONTROL_SHELL
$ $ WRPANG ESORT IRNXX ISTUPD THEORY BWC MITER PROJ
$ $ 40.0 0 -1 1 2
$ $ ROTASCL INTGRD LAMSHT CSTYP6 THSHEL
$ $ 1.0 0 0 1
*CONTROL_HOURLASS
$ $ IHQ OH
$ $ 1 0.1
*CONTROL_PARALLEL
$ $ NCFU NUMRHS ACCU FARA
$ $ 1 0 2
*CONTROL_OUTPUT
$ $ NPOFT NEECHO NREFUP IACCOF OPIFS IPNINT IKEDIT IFLUSH
$ $ 0 0 0 0 0 0 100 5000
$ $ IPRTF IERODE TETLOSS MSGMAX IFCURV GMDT IPIDBLT EOCS
$ $ 0
*CONTROL_ENERGY
$ $ HGEN RWEN SLNTEN RYLEN
$ $ 2 2 2
*CONTROL_ACCURACY
$ $ OSU INN PIDOSU IACC
$ $ 0 2 0
$ $ DT BINARY LCUR IOOPT OPTION1 OPTION2 OPTION3 OPTION4
$ $ 0.01 2
*DATABASE_ELOUT
$ $ DT BINARY LCUR IOOPT OPTION1 OPTION2 OPTION3 OPTION4
$ $ 0.01 2
*DATABASE_GLSTAT
$ $ DT BINARY LCUR IOOPT
$ $ 0.01 2
*DATABASE_NODOUT
$ $ DT BINARY LCUR IOOPT DTHF BINHF
$ $ 0.01 2
*DATABASE_RBDOUT
$ $ DT BINARY LCUR IOOPT
$ $ 0.01 2

```

```

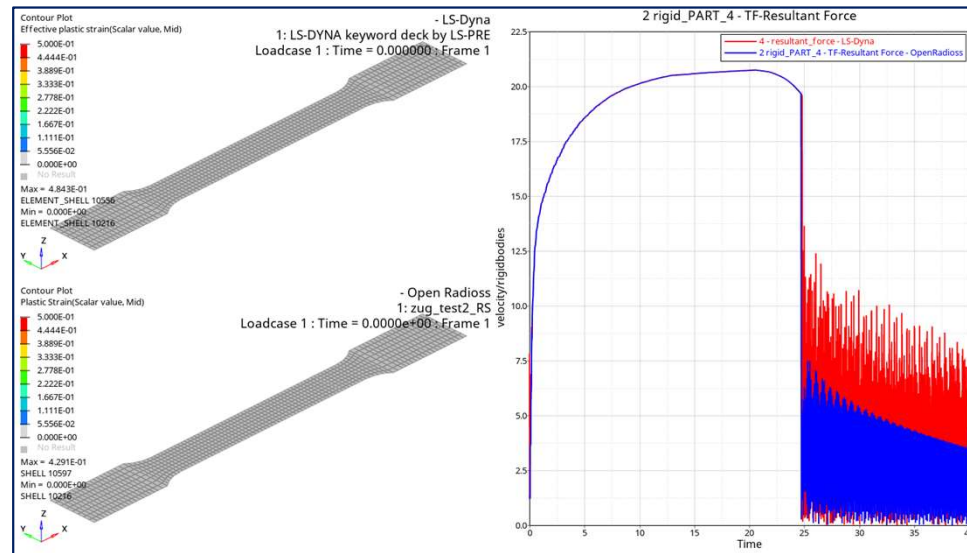
bulla@DEWLT656:/mnt/d/WS/comparison/Dyna_wo_failure/DYNA2Rad$ ./starter_linux64_gf -i zug_test3_RS.k
*****
**
** OpenRadioss Starter
**
** Non-linear Finite Element Analysis Software
**
**
** Linux 64 bits, GNU compiler
**
**
**
**
*****
** OpenRadioss Software
** COPYRIGHT (C) 1986- Altair Engineering, Inc.
** Licensed under GNU Affero General Public License.
** See license file.
**
*****
.. READING LS-DYNA INPUT FORMAT MODEL
..
.. UNITS SYSTEM
.. CONTROL VARIABLES
.. STARTER RUNNING ON 1 THREAD

```

```

-rwxr-xr-x 1 bulla bulla 26474992 May 20 16:21 engine_linux64_gf*
-rwxr-xr-x 1 bulla bulla 16520104 May 20 16:06 starter_linux64_gf*
-rwxrwxrwx 1 bulla bulla 160121 May 24 10:15 zug_test3_RS.k*
-rw-r--r-- 1 bulla bulla 62028 Jul 26 15:49 zug_test3_RS_0000.out
-rw-r--r-- 1 bulla bulla 1217098 Jul 26 15:49 zug_test3_RS_0000_0001.rst
-rw-r--r-- 1 bulla bulla 481 Jul 26 15:49 zug_test3_RS_0001.rad
bulla@DEWLT656:/mnt/d/WS/comparison/Dyna_wo_failure/DYNA2Rad$ ./engine_linux64_gf -i zug_test3_RS_0001.rad

```





# OpenRadioss™

➤ For more details, please review the GitHub OpenRadioss pages: <https://github.com/OpenRadioss/OpenRadioss>

github.com/OpenRadioss/OpenRadioss

- scripts/copyright License and copyright update 2 months ago
- starter Law88 for Shell - Hyperelastic 2 hours ago
- .gitattributes OpenRadioss 3 months ago
- .gitignore ignore .bak 2 months ago
- CODE\_OF\_CONDUCT.md Update README.md, add LICENSE.md, and CODE\_OF\_CONDUCT.md 2 months ago
- CONTRIBUTING.md [skip ci] contribution guide + PR template 26 days ago
- COPYRIGHT.md License and copyright update 2 months ago
- HOWTO.md Update HOWTO.md 7 days ago
- INSTALL.md Update documentation 13 days ago
- LICENSE.md License and copyright update 2 months ago
- README.md Add community manager to README.md 4 days ago
- fake\_file Test CI 3 months ago

5 releases

Packages  
No packages published  
Publish your first package

Contributors 18

7 contributors

Languages

- Python 96.0%
- C 1.0%
- Perl 0.5%
- HTML 0.5%
- Forti 0.5%
- Other 0.4%

README.md

### What is OpenRadioss?

If you have any questions about OpenRadioss please feel free to contact [webmaster@openradioss.org](mailto:webmaster@openradioss.org).

### How to Use OpenRadioss

- [How to Build OpenRadioss](#)
- [How to Run OpenRadioss](#)

### Community and Ways to Participate

- [How to contribute](#)
- [Code of conduct](#)

Community Manager  
Marian Bulla  
[communitymanager@openradioss.com](mailto:communitymanager@openradioss.com)

### Ressources

- [reference guide](#)
- [user guide](#)
- [theory manual](#)
- [Letter](#)

PR Merge CI MAIN [issues](#)

96 lines (81 sloc) | 6.81 KB

## How to contribute

Welcome! You can report issues [here](#) or ask questions [there](#).

### Contributing code to OpenRadioss

Please first discuss the changes you wish to make via the [issue](#) or the [discussion](#) tabs. You must be aware of the license. We will ask you to sign a [Contributor License Agreement \(CLA\)](#).

### Settings

Windows users may want to use [git bash](#) or [WSL](#).

- Create a github account
  - Add an [SSH key](#).
  - Review your account setting, in particular: [email](#), [2FA](#)
- [fork](#) the OpenRadioss repository
- install [lfs](#). On Linux, you may need to install some package first: `sudo yum install git-lfs` or `sudo apt-get install git-lfs`. Then, activate LFS: `git lfs install`
- [clone](#) your fork.
- From your local git directory, review your git user name and email. If you don't want to expose your email address:
  - Check the boxes [keep my email addresses private](#) and [block command line pushes that expose my email here](#)
  - Find your [ID+username](#) [here](#)
  - Type the following:

```
git config --global user.email "<ID+username>@users.noreply.github.com"
```

- Add the main the official repository as a remote:

```
git remote add upstream git@github.com:OpenRadioss/OpenRadioss.git
```

- Now `origin` points to your fork, and `upstream` points to the official OpenRadioss repository