Resources for remote & collaborative work

M1 Mosig

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Basic tools for remote connexions -- SSH

- **SSH**
  - Useful for many purposes, such as:
    - Getting a shell access on a remote machine
    - Executing commands on a remote machine
    - Moving files to and from a remote machine (sftp, scp, sshfs (transparent access on Linux))
    - Making distributed applications work despite firewalls, proxy servers, etc.
  - Already installed on your machine (Win10, Linux or Mac OS) (but must be configured for smooth usage)
  - Some links/docs:
    - https://www.digitalocean.com/community/tutorials/ssh-essentials-working-with-ssh-servers-clients-and-keys
    - https://support.suso.com/supki/SSH_Tutorial_for_Linux

  - **Server accessible from the outside** : im2ag-mandelbrot.univ-grenoble-alpes.fr

Basic tools for remote connexions -- VPN

- **UGA VPN (Virtual Private Network) - Cisco Anyconnect**
  - Required for accessing some of the University services (from wifi-campus and from home)
  - See instructions:
    - http://nomadisme.grenet.fr (wifi-campus, vpn eduroam,)
    - https://vpn.grenet.fr (for Win10 and MacOS; Linux, use the openconnect client of your distribution)

Dealing with coding projects

- Gitlab instance provided by UGA (GRICAD)
    - https://gricad-gitlab.univ-grenoble-alpes.fr/
    - Warning : Limited number of projects outside *groups*

- Gitlab instance provided by Ensimag
    - https://gitlab.ensimag.fr

- Fallback solutions (outside of UGA)
    - Gitlab.com
    - Github.com

- Warning:
    - In any case, avoid leaving/granting public/open access to your graded projects (code and documents) for M1 Mosig
    - Otherwise, **you may be held jointly responsible in case of plagiarism**

Pedagogical platforms

- **Moodle (IM2AG)**
  - https://im2ag-moodle.univ-grenoble-alpes.fr/
  - **Will be used (at least as entry point) for all the M1 Mosig courses (and more generally, all the courses at UFR IM2AG)**

  - Most courses will also use Moodle to host a forum
  - M1 Mosig "News and discussions" page
    - https://im2ag-moodle.univ-grenoble-alpes.fr/course/view.php?id=482
    - Forum for news and Q&A
    - **Will soon be used as primary means for interactions (news and questions/answers) with the class**
      - **Enroll as soon as you get your account !!**

Microsoft Office 365

- UGA has a global licence (for students and staff)

- **Gives you access to a number of services, including:**
  - Online version of Microsft desktop suite (word, excel, powerpoint ...)
  - Teams (Video/audio conferencing, chat ...)
  - OneDrive (Cloud storage like Dropbox) (to be confirmed)

- **How to connect:**
  - Should work (at least) with the following web browers: Chrome/Chromium, MS Edge, Firefox
  - Go to https://www.office.com
  - And use the following login: `your_uga_login@`**`azure`**`.univ-grenoble-alpes.fr`

Sharing large files

- Renater FileSender

  - https://filesender.renater.fr/

  - Using your UGA account
  - Via web interface
  - Up to 100 GB
  - Retention up to 30 days
  - Files can be encrypted (client-side) if necessary

Chat service -- Mattermost

- UFR IM2AG has its own Mattermost instance

  – https://im2ag-tchat.univ-grenoble-alpes.fr/m1-24-25

  – Open-source online chat (same basic principles as Discord)

    - More convenient than Moodle for discussions

  – A group « M1 » has been created

    - The invitation link to join it : click here to join

  – Once registered, join the channel : **M1-Mosig-General**

    - Can be used for general questions/discussions about M1 Mosig organisation

    - If we do not answer, notify us with *@name*

  – Other channels might be created later for some courses

Collaborative edition of documents

- For Office documents (and related formats):
    - Office 365 (edition requires internet access)
    - Another cloud service (storage + online edition) hosted locally at UGA <u>might</u> become available later in the academic year

- For text-based documents (LaTeX, raw text, html, markdown, rst, org-mode ...):
    - Via a Git repository hosted on GRICAD Gitlab
    - Allows offline edition and transient or low bandwidth internet

- Outside of UGA (fallback solutions):
    - Google Drive/Documents
    - Other Git-based platforms (gitlab.com, github, ...)
    - For LaTeX (requires internet access):
        - Overleaf (https://www.overleaf.com)
        - Papeeria (https://papeeria.com)

Wiki of the UFR IM2AG IT department

- https://im2ag-wiki.univ-grenoble-alpes.fr/doku.php

- Documentation and tutorials

- Technical details

- Help desk

- Links to other tools and services

- Unfortunately, mostly in French for the moment (but the staff, teachers and your classmates are here to help)

Todo list

- Finish your inscription as early as possible

- Once you have an account
  - **[Important]** Join the M1 Mosig News page
    - https://im2ag-moodle.univ-grenoble-alpes.fr/course/view.php?id=482
  - Join the mattermost M1 group
    - click here to join
    - And register to the channel « M1-Mosig-General »

Additional Slides

About wired connection

- Do not underestimate the benefits of wired networking (at IM2AG and at home)

- If you do not have a built-in Ethernet port on your laptop, consider investing in an Ethernet dongle

- Reminder: IM2AG lab rooms are equiped with (red) Ethernet cables for personal laptops

Basic tools for remote connexions (additional info)

- **Tmux**
  - Terminal multiplexer, providing the following features:
    - Accessing multiple terminal sessions simultaneously in a single window
    - Detaching processes from their controlling terminals, allowing remote sessions to remain active (despite even brutal disconnections)

  - Easy to install via your Linux package manager

  - Some links:
    - https://tmuxguide.readthedocs.io/en/latest/index.html
    - https://www.hamvocke.com/blog/a-quick-and-easy-guide-to-tmux/

Visio/audio-conferencing solutions

- **Within UGA** (authentication via you UGA account):
  - **BBB ("Big Blue Button")**
    - https://meet.univ-grenoble-alpes.fr/
    - Web-based (also work in mobile browser)
    - Moodle integration
    - Supports recording
  - **Zoom**
    - https://univ-grenoble-alpes-fr.zoom.us/
    - Web-based or standalone application (+ mobile app)
    - Moodle integration
    - Supports recording
  - **Microsoft Teams** (via Office 365)
    - Web-based or standalone application (+ mobile app)

- **Outside UGA** (fallback solutions):
  - **Jitsi**
    - Web-based (or mobile app)
    - No account needed
    - choose the room name (in advance is ok, several times is ok too)
    - https://meet.jit.si
  - Whereby.com (warning: 4 persons max)
  - Skype
  - Discord
  - ...

Almost all of the above solutions should in principle:
- work for small-scale meetings(2-3 persons) as well as large-scale meetings (30-50 persons)
- support screen sharing

Tools for interactive work sessions on code (for labs / code / debug ...)

All the tools listed below are cross-platform (Linux, Mac, Windows)

- tmate
  - Terminal sharing (work with all text-only capable editor: vim, emacs, nano, joe ...)
  - Via SSH or web-browser
  - In read-write or read-only mode
  - Based on tmux
  - https://tmate.io
  - Easy to set up

- Atom editor - "Teletype" package
  - Requires Github account
  - https://teletype.atom.io

- VSCode editor - "Live Share" extension
  - Requires Github or Microsoft account
  - https://visualstudio.microsoft.com/fr/services/live-share/
  - https://marketplace.visualstudio.com/items?itemName=MS-vsliveshare.vsliveshare