

3

Let's Get Started

Install ESM-Tools and verify

Troubleshooting

Installed programs, command-line options

Brief overview of the folders and files

3 Let's Get Started: Installation



<https://esm-tools.readthedocs.io>

- 1 cd to your `${HOME}` directory
- 2 In your `.bash_profile`, `.bashrc`, `.profile`

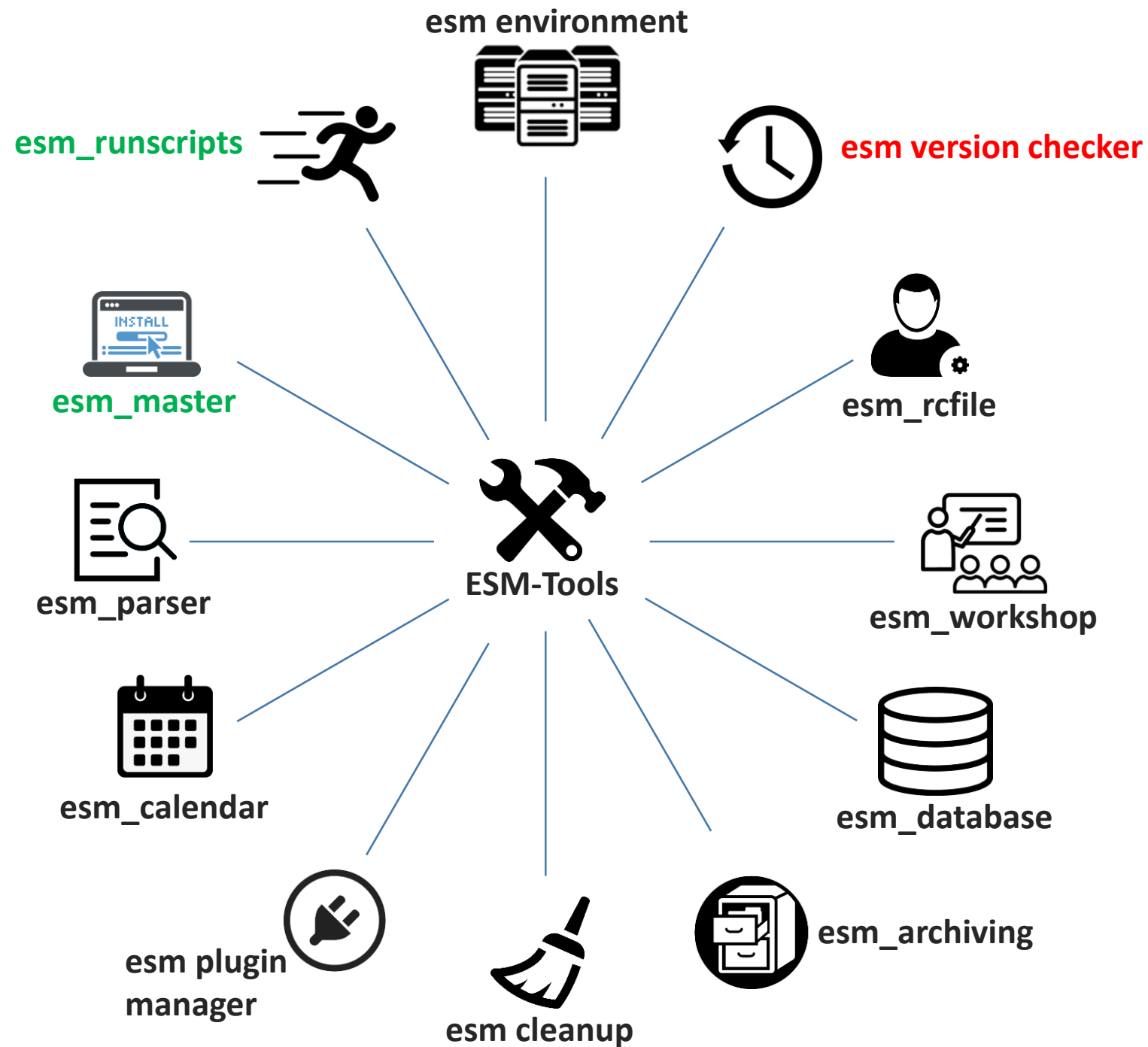
```
export PATH=${PATH} ~/.local/bin
export LC_ALL=en_US.UTF-8
export LANG=en_US.UTF-8
```

```
module load git
module unload netcdf_c
module load python3/2021.01-gcc-9.1.0
```

- 3 `mkdir Software` *# or Programs*
`cd Software/`
- 4 `git clone https://github.com/esm-tools/esm_tools.git`
- 5 `cd esm_tools`
`./install.sh`

This will install ESM-Tools and all of the dependencies
- 6 `esm_tools --version`

Verify the installation



ESM-Tools Ecosystem

- ▶ Coupled & Modular architecture
- ▶ Main executables: esm_master
 - ▶ esm_master
 - ▶ esm_runscripts
- ▶ Significant change from R5 → R6
 - ▶ Some of the tools will be obsolete
- ▶ Well tested. Test coverage is increasing

3 esm_master: overview



- ▶ ESM-Master **downloads, builds** (configure, compile, link), **cleans, recompiles** models and setups.
- ▶ You can think of ESM-Master as a *package manager*. **Note:** ESM-Tools has no right on any models or licences.
- ▶ Build information is stored in `<model>.yaml (setup.yaml)` files. Eg. `fesom.yaml`, `awicm.yaml`
- ▶ Ideally the models are **version controlled** and hosted in a **remote repository** but tarballs are also supported.

▶ `esm_master <operation>-<software>-<version>`

`esm_master --help (or -h) # get help`

▶ `esm_master # shows all available targets (models, setups)`

▶ `install` and `recomp` are meta-commands.

`install = get (+ conf) + (comp)`

`recomp = clean (+ conf) + comp`

▶ `esm_master fesom # shows all available targets that include 'fesom'`

3 esm_runscripts: overview



```
esm_runscripts --help
```

```
esm_runscripts your_runscript.yaml -e name_of_your_experiment -v --open-run -c
```

Common Options:

- | | |
|----------------------|---|
| -e | specifies the experiment name (test is the default name) |
| -v, --verbose | verbose mode on. Useful for getting more information |
| --open-run | run without a virtual environment. Or use <code>use_venv: false</code> in your runscript |
| -c, --check | dryrun or check mode. Prepares everything but does not submit the job. It is recommended to make a check run before submitting your job |

3 Quick Overview of YAML configs



https://github.com/esm-tools/esm_tools

	mandresm Bump version: 6.5.0 → 6.5.1	✖ fc1e2ed 4 days ago	🕒 2,620 commits
📁 .github	Merge remote-tracking branch 'origin/release' into feat/awiesm_final	17 days ago	
📁 configs	Merge branch 'feat/awiesm_final' of https://github.com/esm-tools/esm_tools	4 days ago	
📁 couplings	added echam pism coupling	9 months ago	
📁 dataprocessings	changed order of execution to include chunks, without breaking some...	12 months ago	
📁 docs	small fix to the update_bins PR and documentation	4 months ago	
📁 esm_tools/motd	adding notes about the upgrade from @seb-wahl	4 months ago	
📁 motd	changes on the motd for the monorepo rework	7 months ago	
📁 namelists	namelists from https://gitlab.awi.de/paleodyn/Models/namelists stored...	last month	
📁 runscripts	fix(runscripts): provides default runscripts for various awiesm scena...	4 days ago	
📁 src	Bump version: 6.5.0 → 6.5.1	4 days ago	
📁 tests	Merge pull request #502 from esm-tools/monorepo_ci_test	4 months ago	
📁 utils	Bump pip from 19.2.3 to 21.1 in /utils	4 months ago	



- configs/machines/<machine>.yaml
- components/<model>/<model>.yaml
- setups/<setup>/<setup>.yaml



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