

Scaling training to infinity... and beyond!

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8th July 2026, useR! 2026



Photo by Nikola Čedíková from Pexels.

Scenario

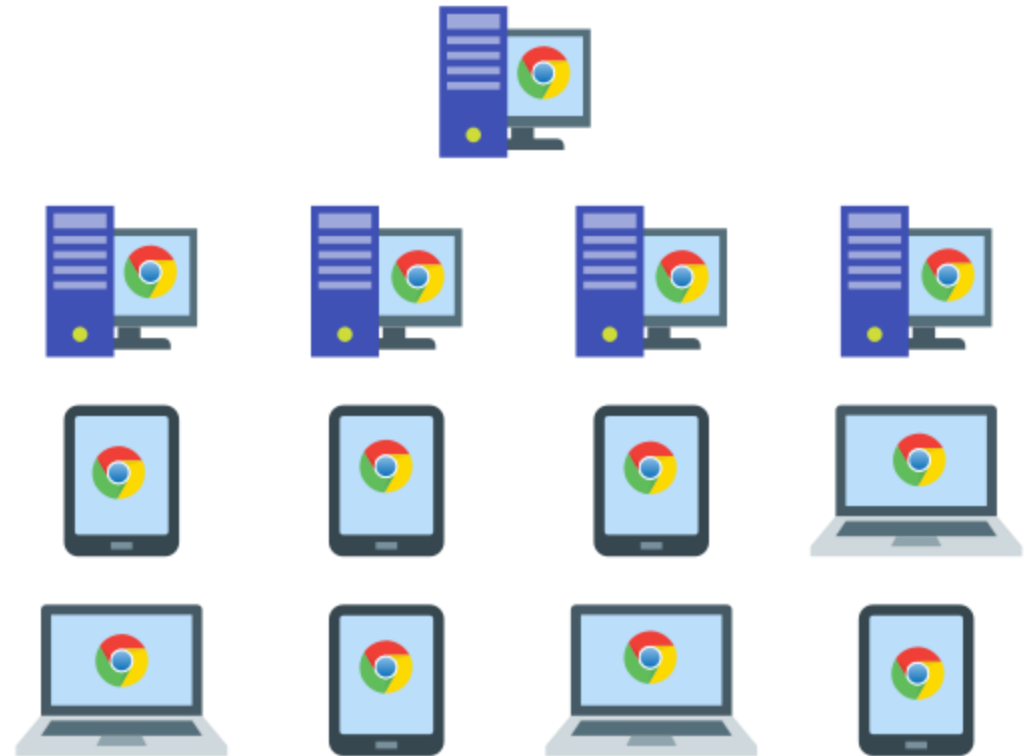
Teaching an introduction to R course can be challenge given the diversity of environments that students are familiar to use.

For example, installation on Windows and macOS might end with different versions.



Cloud

Use of the cloud solves the challenges related with installation in a heterogenous environment because all learners access the same central server using the web browser.



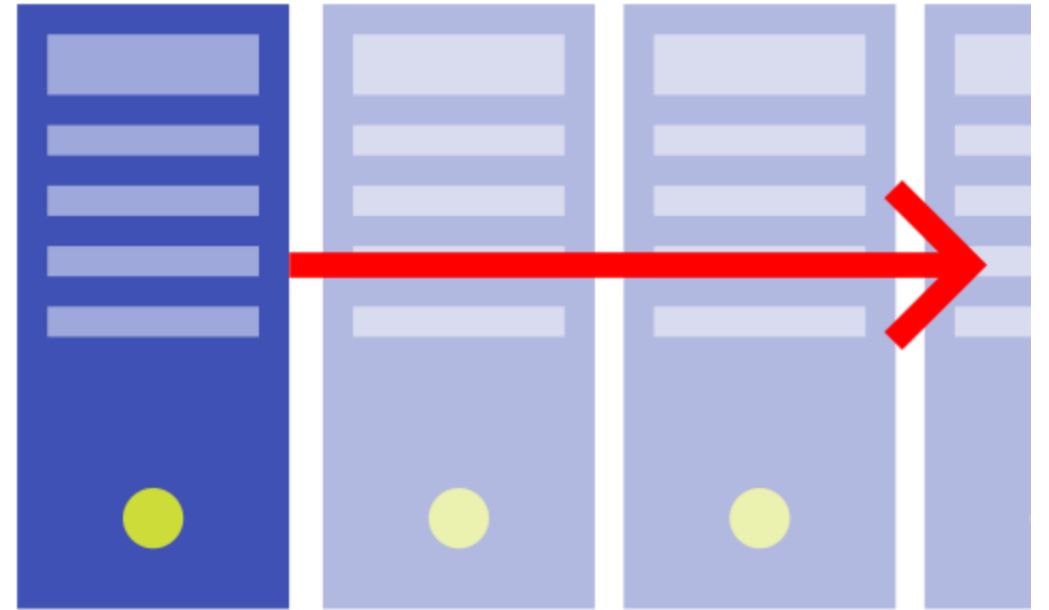
Vertical scaling

When using the cloud and vertical scaling, i.e. increasing the CPU cores and RAM, we quickly reach a limit of how big our class can be.



Horizontal scaling

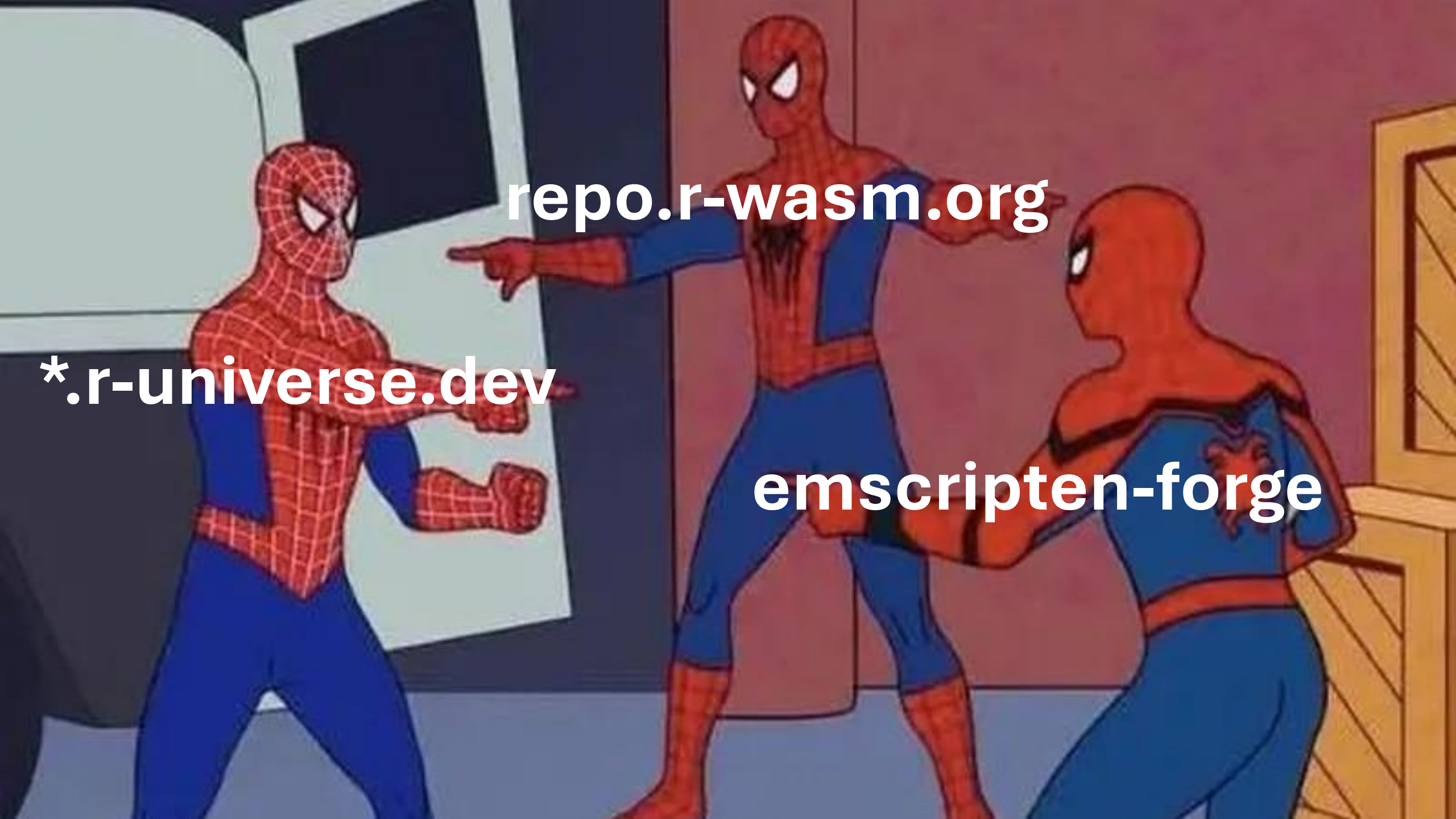
When using the cloud and horizontal scaling, i.e. using more than one server, we end in a very complex infrastructure that requires changes in the architecture of our teaching tools.



Device Edge Node with WebAssembly

WebAssembly (Wasm) allow instructors to provide a link to learners where the environment will be loaded from but all the computation happens locally on the learner's machine.





repo.r-wasm.org

*.r-universe.dev

emscripten-forge

Let's talk!

Example



Resources

- WebR: <https://docs.r-wasm.org>
- JupyterLite: <https://jupyterlite.readthedocs.io>