**RStudio Server (LRZ Service)**

- What is RStudio Server?
- Getting Started
  - Access
  - Linux Cluster Integration
  - R Package Management
- Support
- History of Notable Changes to the Service
  - 2020-01-29 Maintenance and Upgrade

**What is RStudio Server?**

RStudio Server provides a web-based integrated development environment (IDE) for R (as well as Python and other programming languages). It can be accessed using a browser on basically any device with internet access. It offers a convenient interface for developing and running R (and other) scripts on LRZ systems. In addition to an R console and editor, it provides, amongst other features, a file browser for analyzing results and plots or transferring files between the LRZ Linux Cluster and your local device.

**Getting Started**

In order to use the RStudio Server at LRZ please visit [www.rstudio.lrz.de](http://www.rstudio.lrz.de)

When asked to authenticate, please use your LRZ Linux Cluster account to log in.

**Access**

RStudio Server at LRZ is a service associated with the LRZ Linux Cluster. If you already have an account for the Linux Cluster, you can use the corresponding user name and password to access the RStudio Server. Otherwise, you will have to request access to the Linux Cluster first (see Access and Login to the Linux Cluster).

**Linux Cluster Integration**

RStudio Server provides a file browser which can (in the default setup) be found as 'Files' tab in the bottom right pane of the web interface. It can be used to access the data in your Data Science Storage (DSS)-backed Linux Cluster home directory ($HOME).

Any other DSS based storage containers - including the new DSS-based Linux Cluster project containers - can also be accessed using RStudio Server. To do so, the data curator of the DSS container has to create an appropriate NFS export. For RStudio Server, the IP addresses 10.195.15.231, 10.195.15.232 and 10.195.15.233 have to be specified as export targets. The general procedure is described [here](https://blog.rstudio.com/2019/04/30/rstudio-1-2-release/) and [here](https://blog.rstudio.com/2019/04/30/rstudio-1-2-release/) - please note that this is currently requiring use of the DSS command line client (see section 1.2).

You can also use the built-in Terminal to submit jobs to the Linux Cluster's batch queues via the Slurm Workload Manager (see Job Processing on the Linux-Cluster).

**R Package Management**

You can install your own R packages in the usual way using the `install.packages()`-function or the 'Packages' tab in the bottom right pane of the web interface. RStudio will ask you whether to install these packages into a personal library which it will, per default, create in your Linux Cluster home directory ($HOME). Beware that this is a different package library than on the Linux Cluster login and compute nodes. Make sure to install needed packages in both environments if you plan to submit jobs to the Linux Cluster compute nodes.

**Support**

If you need help with R or RStudio or if you face problems connecting to the RStudio Server at LRZ, please contact the LRZ Servicedesk.

**History of Notable Changes to the Service**

**2020-01-29 Maintenance and Upgrade**

On January 29th, 2020 this service underwent maintenance work. During this maintenance, the virtual infrastructure of the RStudio Server was moved to a new back-end. The following changes need to be taken into account by users of the service:

- Available system resources were upgraded considerably. Please adhere to the new usage limit of 20 CPU cores in total per individual user at any given time. These can be utilized in a single or multiple R sessions. You may run a maximum of 5 concurrent R sessions.
- The operating system of the RStudio Server nodes was updated to Debian 10. This requires you to re-install your individually added R packages. Please [contact us](https://www.rstudio.com) if you encounter problems (e.g. missing system dependencies) when adding your custom packages.
- RStudio Server was updated to version 1.2 (for an overview see [https://blog.rstudio.com/2019/04/30/rstudio-1-2-release/](https://blog.rstudio.com/2019/04/30/rstudio-1-2-release/)), however not all features will be available initially but may be added at a later time.
- The default version of R was updated to 3.5.3 and should work with most user packages (while older and newer versions are available for you to select if needed).
Read-only access to the legacy NAS-based file-systems is not possible anymore. Home directories based on Data Science Storage (DSS) continue to be accessible automatically. In order to access additional DSS project containers, please see the relevant information documented above. Submission of jobs to the Linux Cluster compute nodes will continue to work as expected.