

Typically, each participating instructor will publish a single archive (i.e., a tar file) at a publically accessible URL specific to the instructor or institution. The URL is distributed to students and entered into their Labtainers instance using the `imodule` command ²³. For example, if the instructor publishes at `https://myschool/mystuff/labtainers/imodule.tar`, the students would each issue this command to Labtainers:

```
imodule myschool/mystuff/labtainers/imodule.tar
```

The student labs will be updated to include those IModules. Student labs will be updated whenever the student runs either `update-labtainer.sh` or `imodule -u`.

IModule support tools rely on instructor contributions existing in local git repositories. The tools do not reference remote repositories. IModule repositories have no relationship to the main Labtainers repository, and should be managed within Labtainer distributions rather than within local repo copies of the main Labtainer repository. ²⁴

10.3 Testing IModules

Use a separate VM to test your IModules, i.e., not the VM used to develop the lab. A separate Labtainer VM is suggested. Use this independent VM to mimic what a student will see and do. If you'd prefer to test an IModule prior to publishing the `imodule.tar` file, place the file on the test system and use the `file://` URL syntax, e.g.,

```
imodule file://home/student/imodules/imodule.tar
```

Use of SimLab, as described in [A](#) is encouraged to ensure the lab behaves as intended.

10.4 Custom lab manuals

The easiest way to provide your students with a custom version of a lab manual that they can reference from Labtainers is described below. This does not require that you use the Labtainer VM or git. The example assumes you are customizing the `telnet-lab` manual.

- Create your version of the manual in the pdf format (if the manual source is docx, export it as pdf).
- Put that manual in a file with the original name, in a directory whose name is the lab, e.g.,

```
telnet-lab/telnet-lab.pdf
```

- Create a tar file of the manual including the lab name in the path.
- Publish that tar file onto a web server, i.e., something that responds to `http get` commands.
- Instruct your students to provide that URL to the `imodule` command.

If you wish to publish multiple custom lab manuals, put them all in the same tar file.

²³The full URL is published because many web hosting systems, e.g., `box.com` make it impossible to construct URLs from relative paths

²⁴In general, instructors and lab designers are encourage to work from Labtainer distributions rather than repos pulled from the Labtainers repo at GitHub to avoid git repository conflicts.