Exercises

Preamble

These tasks are individual assignments and will require you to search and modify materials you will find on manual pages and the websites of open source projects.

While the assignments will initially require you to visit the Nodeslab, one of the goals of the materials taught here is to avoid physical maintenance as much as possible.

As we cannot give out magnetic keycards and access bits to each student, the course assistant Mikko Rantanen will maintain the following schedule for visiting the lab:

- 11.-14.3.2014: 12.00 – 16.00 on campus; please call +358 40 548 3002, see room A213 or highlight me on #tkt-wsc
- If you are in a hurry or have some emergency, I can usually get to campus in fifteen minutes from home should I be there.

Please note that it may take a few hours to complete set 1 so far that you can reboot the machine and still be able to connect to it.

The automated PXE install takes about 33 minutes, during which time you can’t do much else but wait for it to finish. There is also only a limited amount of keyboards and monitors for doing the initial configuration before remote access is possible.

Firmware updates take about 1-5 minutes for BIOS and 6-25 minutes for BMC, if you choose to do that. The time it takes varies in an unpredictable manner. Machine bootup time can be cut to about 40 seconds instead of minutes by configuring the BIOS.

When you get stuck

It is warmly recommended but not mandatory to join the IRCNet channel #tkt-wsc, but please remember that we will not monitor the channel 24/7.

You can use screen and #tkt-wsc on the dept’s server melkinpaasi.cs.helsinki.fi.

The assignments are to be completed individually, but you may ask other students for hints on the channel.

Copying complete solutions is explicitly forbidden and will be disciplined very harshly.

Scheduling and Exercise sets

The course runs for the 8 weeks in Period IV, including the exam week (28.4.-2.5.), plus the two intensive teaching period weeks (5.-16.5.), in theory ten weeks in total.

However, as this span of time contains multiple holidays and we will also avoid giving you too much stuff to do during the exam week, the effective amount of time is closer to 8 weeks.

There are seven sets of exercises plus possibly an exam. As the first week requires you to physically set up your target machines, we will allocate a little bit more time for the first set.

Each exercise set is divided into required and optional sub-tasks. The required parts must be submitted before each deadline. Optional parts you can keep working on for extra points.

1. Connectivity, including initial installation and access restrictions, deadline Saturday 22.3. at 23:59
2. Containers, a lightweight virtualization solution, deadline Monday 7.4. at 23:59
3. Interlude 1, some housekeeping and general tricks, deadline Tuesday 15.4. at 23:59
4. Compiling software into packages and maintaining dependencies, deadline Saturday 26.4. at 23:59
5. Configuration through a role- and template-based installation manager, deadline Monday 5.5. at 23:59
6. Checking the availability of services, sending notifications, and taking corrective actions, deadline Monday 12.5. at 23:59
7. Coins, since in WSC setups the real initiative for high availability is the value of the services, deadline Saturday 17.5. at 23:59

Q: I’ve missed my deadline, help!
A: You can return your set late, but a lot of points will be reduced by this. The only limitation is that the sets must be returned in order, i.e., you can’t return set #3 before #2. Just like TCP.

Feedback

General Feedback and links to your solutions.