

LPI Partnertagung 2014

Online Training Platform Linux Learn Map

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About me

- Christoph Lindenmüller
- Wissenschaftlicher Mitarbeiter
 - Teaching: Linux Essentials for 2nd semester
 - Research: Privacy Protection in Smart Metering
- Hochschule der Medien Stuttgart
 - Studienbereich Medieninformatik
 - Bachelor Medieninformatik
 - Bachelor Mobile Medien
 - Master Computer Science & Media

Course „Linux Grundlagen“

- 12 sessions of 90 minutes
 - 30min Lecture & Slides
 - 60min Linux Learn Map web application
- Classroom support with 2 tutors
- Wiki for FAQ and command list

Challenges

- University course „Linux Grundlagen“
 - grew from 40 to 80 students
- How to make them start hacking?
- How to give feedback & grades?
- How to spend lecturers time best?

Linux Learn Map

- Interactive E-Learning Tool
- Exercises with automated checking
- LAMP Web application
- Students work on a Linux virtual machine
- Developed with student Stephan Soller 2013

Linux Learn Map - Mozilla Firefox

Linux Learn Map

https://learnmap.mi.hdm-stuttgart.de

Linux Learn Map

Earth, Wednesday 8. October 2014

Hello Tutor Christoph Lindenmüller,

welcome to the free & open Linux world! Your Linux virtual machine is

Host name linuxvm130.mi.hdm-stuttgart.de
User name root
Password

On Linux and Mac-OSX just open a "Terminal" and type:


```
ssh root@linuxvm130.mi.hdm-stuttgart.de
```

On MS Windows install the Terminal [Putty](#), it works like [explained here](#).

Network connection to your Linux VM will work straight away from a PC in the HdM MI pool room. If you use your own devices or connect from home you need to setup a [OpenVPN](#) tunnel. That moves you virtually into the local HdM network and gives you access to lab servers like the Linux Learn Map VMs.

Course Media

- [Slides](#)
- [FAQ](#)
- [Your Quests](#)
- [Preview Quests](#)



The tests are performed for user 'root' on server 'linuxvm130.mi.hdm-stuttgart.de'

[Start page](#)



5 Change Password

Punkte Task: 10-intro/a1-login

Login to your linuxvmXXX.mi.hdm-stuttgart.de with SSH. Change the password.

Hint

See slideset 2b-ssh-access.
The command for changing the password of the current user

```
# passwd
```

check
exercise

```
Trying SSH login to linuxvm130.mi.hdm-stuttgart.de with default  
password justdoit...  
OK. Login with default password impossible (code 255)
```

1 Using commands with options

Punkte Task: 10-intro/a2-command-options

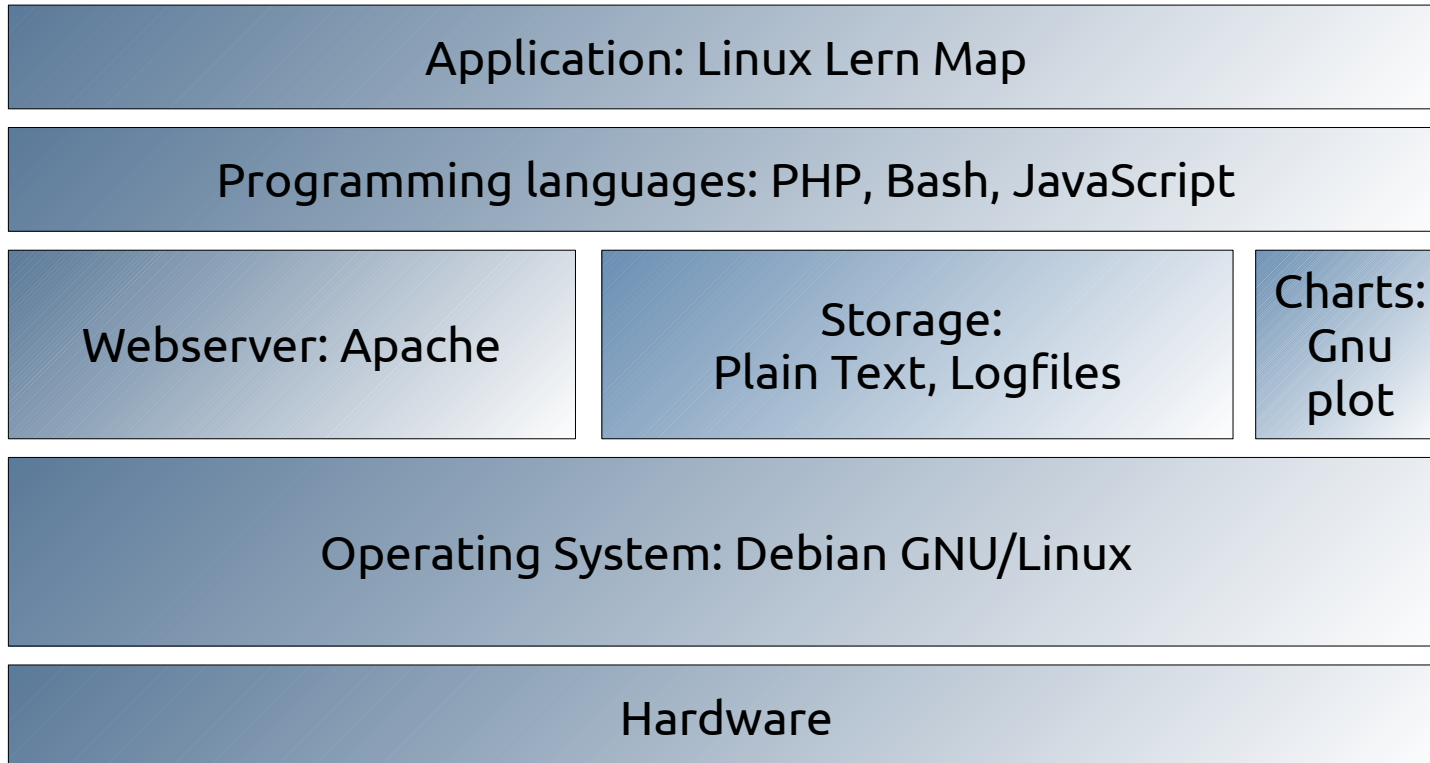
Try out different options and arguments for the "ls" command (lists directory content).

options:

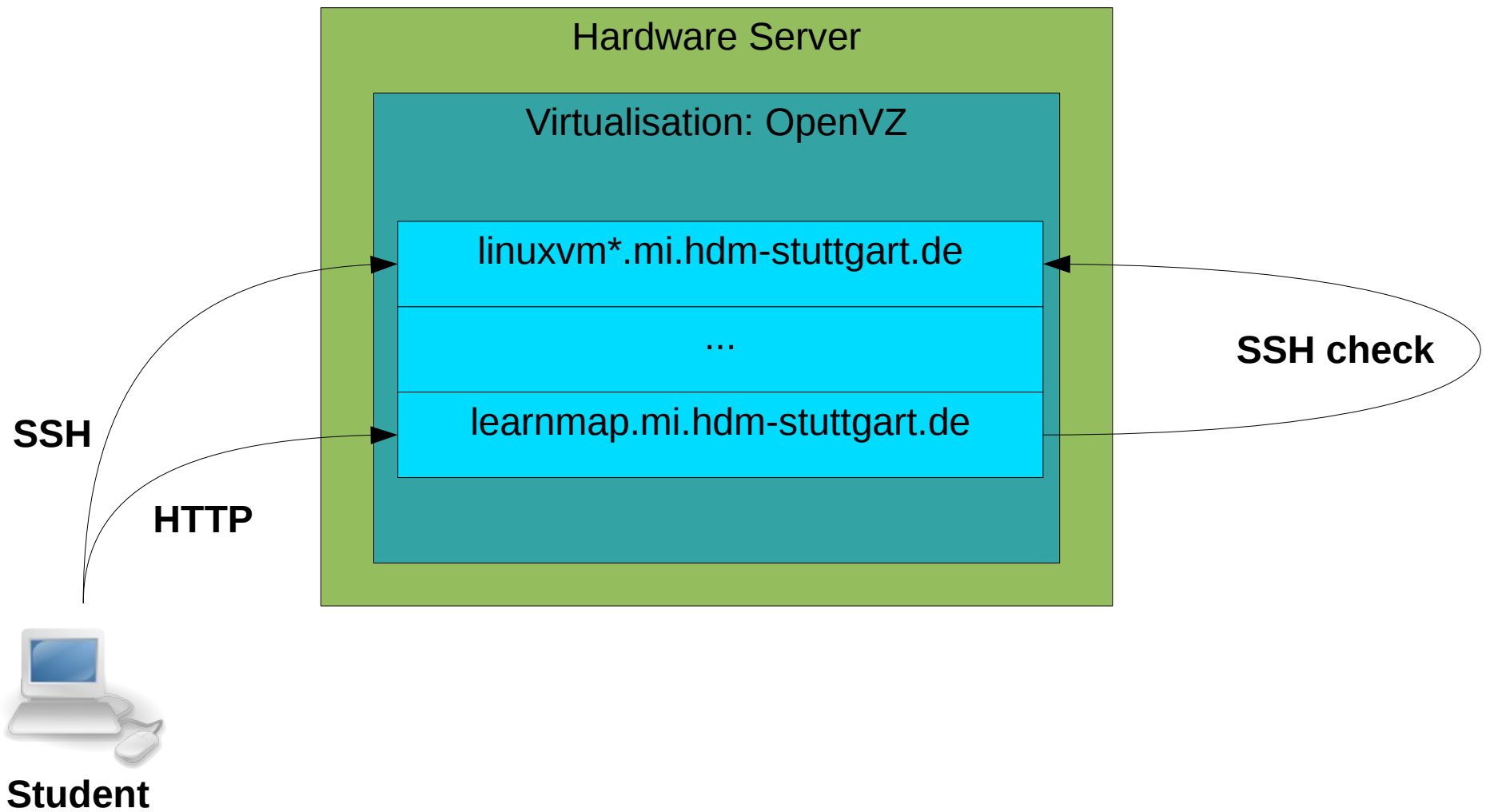
Quests available

- (1) Help, Output redirection and Pipes
- (2) Access Rights
- (3) FHS and PATH
- (4) Shell Scripting
- (5) Backup Script
- (6) Webserver Setup
- (7) Securing your server
- (8) Software package management

Technology



Access



Quests := task.txt

Title: Create a directory structure

Points: 10

Parsed by task.php

Position: 50, 200

Create the following directories and files on your linuxvm.

~~~

/

root/

test2/

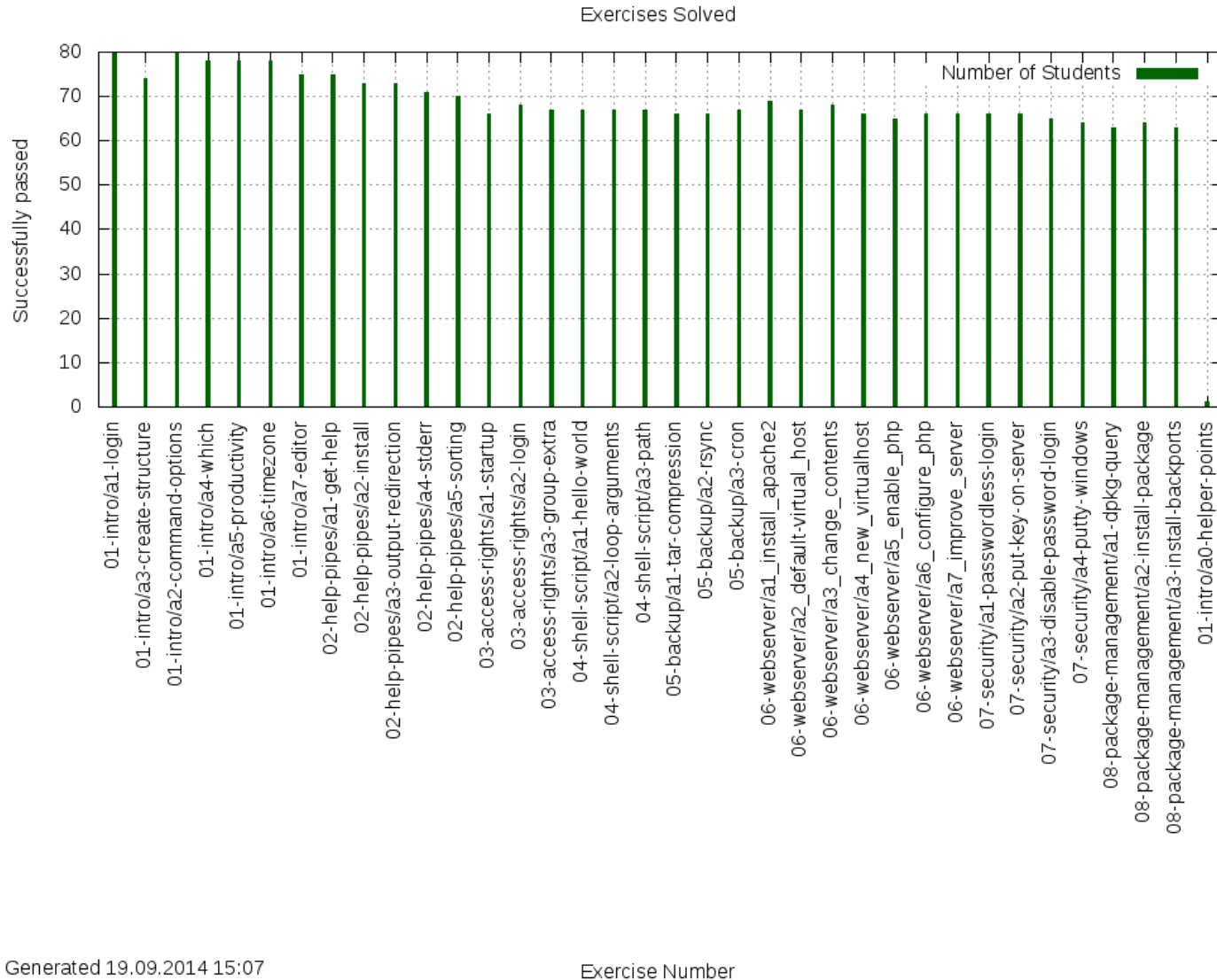
~~~

Markdown syntax

check script

```
#!/bin/bash
PATH1=/root/test2/
if [ -d $PATH1 ]; then
    echo "OK: $PATH1<br>"
    exit 0
else
    echo "FAIL: $PATH1 missing or not a directory.<br>"
    exit 1
fi
```

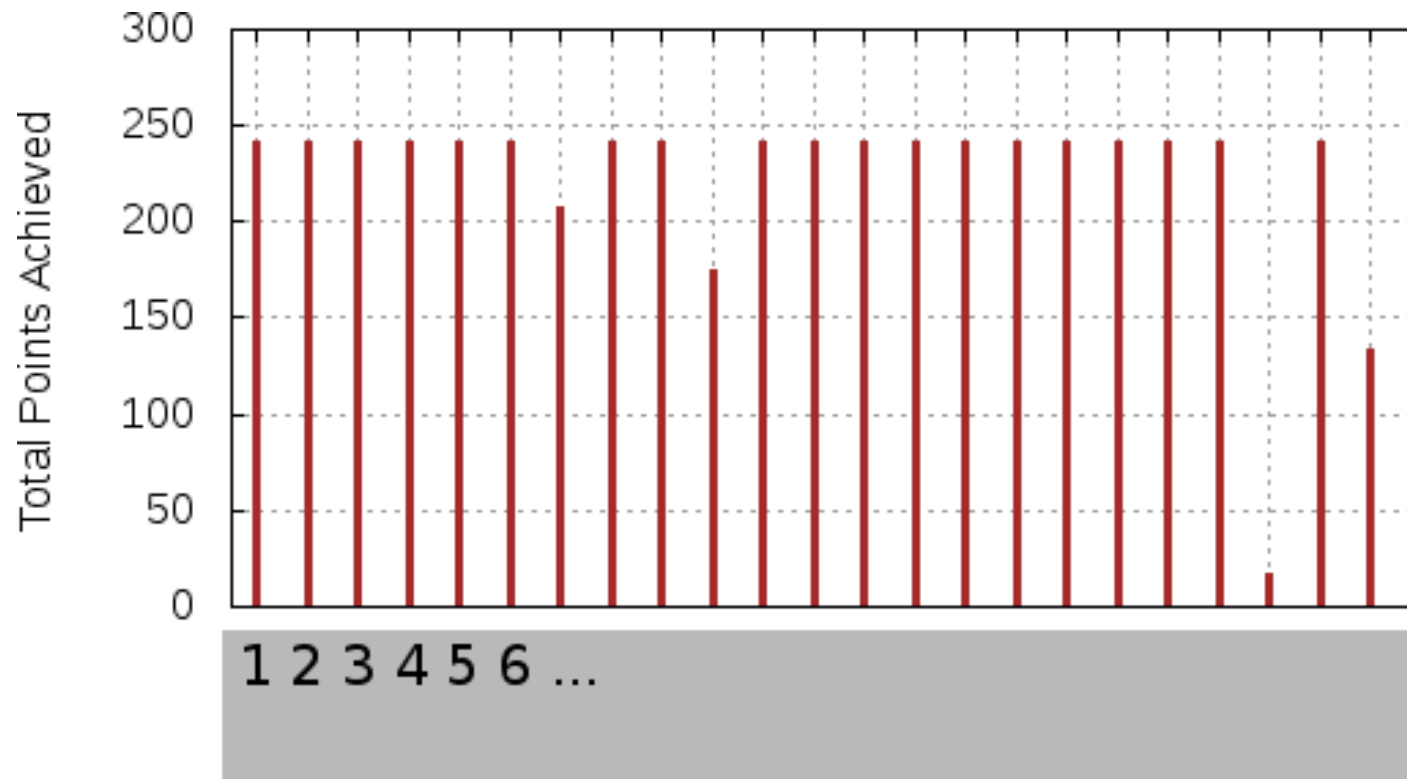
Stats: Students done/Exercises



Generated 19.09.2014 15:07

Exercise Number

Stats: Points achieved/Students



Generated 19.09.2014 15:40

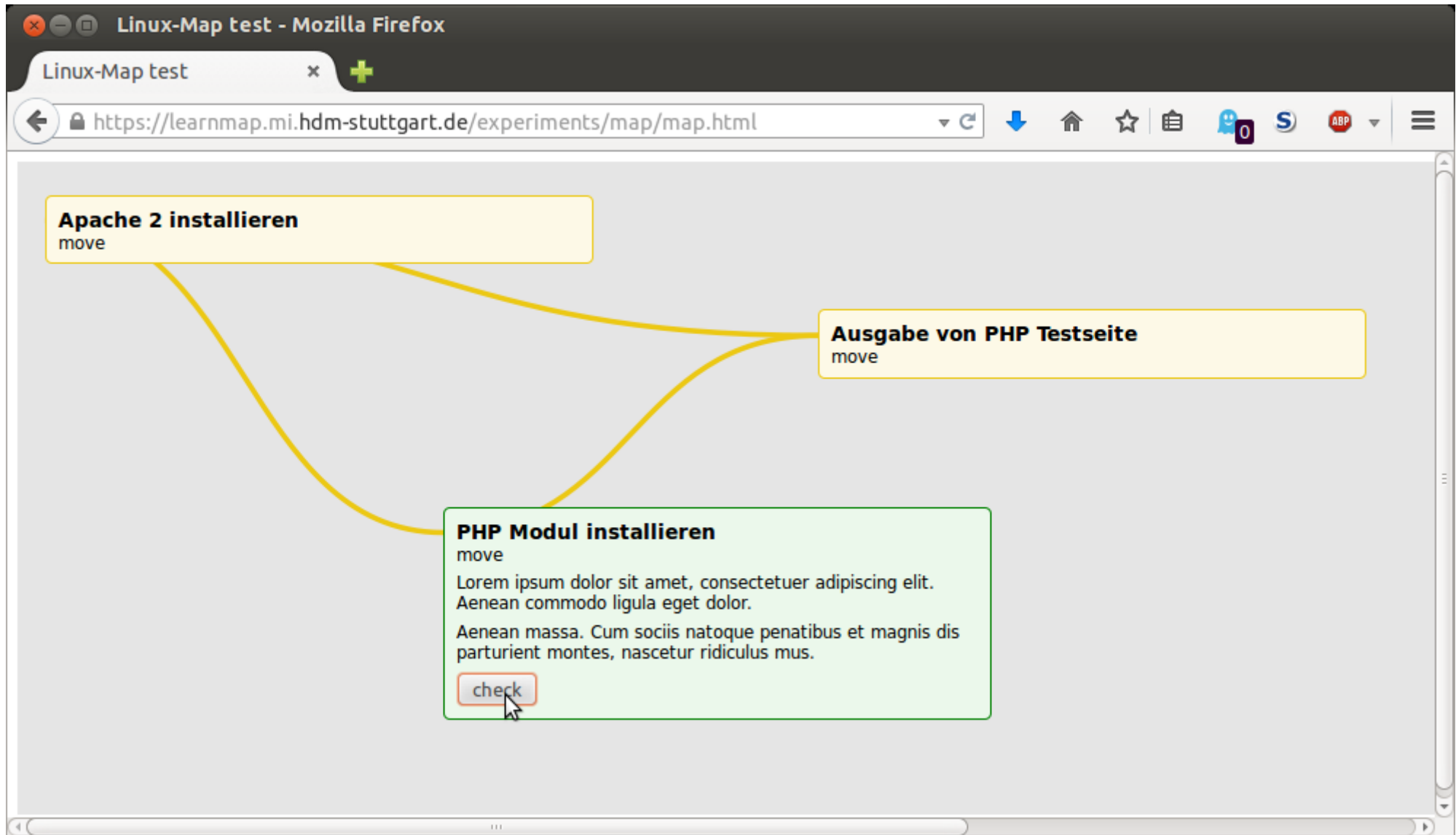
Improve lecture

- How to motivate hacking & reading?
 - Integrate with ILIAS online assessments
 - More complex Quests
- How is lectureres time spent best?
 - Personal support
 - Special groups for students „behind“
 - Hands on demos
 - Screencasts for standard topics

Feature Ideas

- Limit working time for each Quest to 2 weeks
- Anonymous support request → Dashboard
- Video of the stats over time
- Programming courses (Python, C, Java etc.)
- Public Quest repository
- Graphical learn map

Prototype: Graphical Learn Map



Discussion: Community project

- Who would like to use the Linux Learn Map?
- Who would contribute quests & test scripts?
- Platform for contributed quests & test scripts
- Reward students for contributions

[Your feedback: web@lindenmueller.de](mailto:web@lindenmueller.de)