



OST

Eastern Switzerland
University of Applied Sciences

Distributed Systems & Blockchain (DS1)

Admin

Thomas Bocek

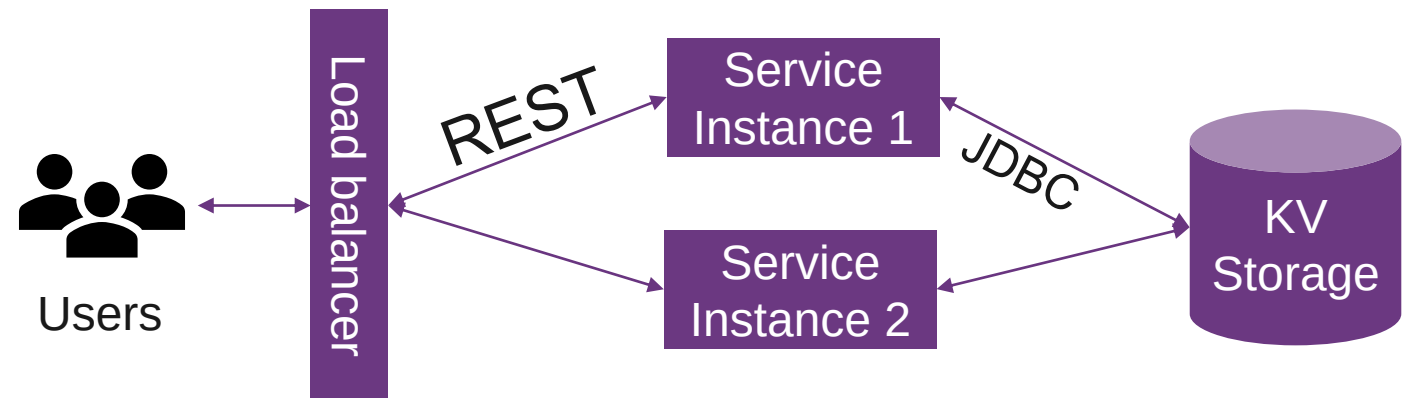
1 March 2021

DS1: Plan 2021

Nr	Date	Vorlesung*	Dozent	Suggested Milestone
01	23.02.2021	Admin / Introduction	01	Group forming, idea for services
02	02.03.2021	Protocols, Basics	02	Group forming, idea for services
03	09.03.2021	Application Protocols	03	Information flow, setup dev environment
04	16.03.2021	Distributed Applications: load balancing	04	Load balancer working
05	23.03.2021	Distributed Applications: CORS, gRPC, git	05	
06	30.03.2021	Authorization (basic auth, digest auth, session-based, JWT), queues	06	Storage backend ready
07	-	Easter Vacations	07	
08	13.04.2021	Containers and VMs	08	Frontend ready
09	20.04.2021	Docker, Docker Compose, Connecting everything	09	
10	27.04.2021	Real-world examples	10	Connecting everything, dockerization
11	04.05.2021	Blockchain, Bitcoin, Ethereum I	11	
12	11.05.2021	Blockchain, Bitcoin, Ethereum II	12	Testing, testing, testing
13	18.05.2021	Challenge Task Presentations I	13	
14	25.05.2021	Challenge Task Presentations II	14	
15	01.06.2021	Challenge Task Award Winner Announcement, Q&A	15	

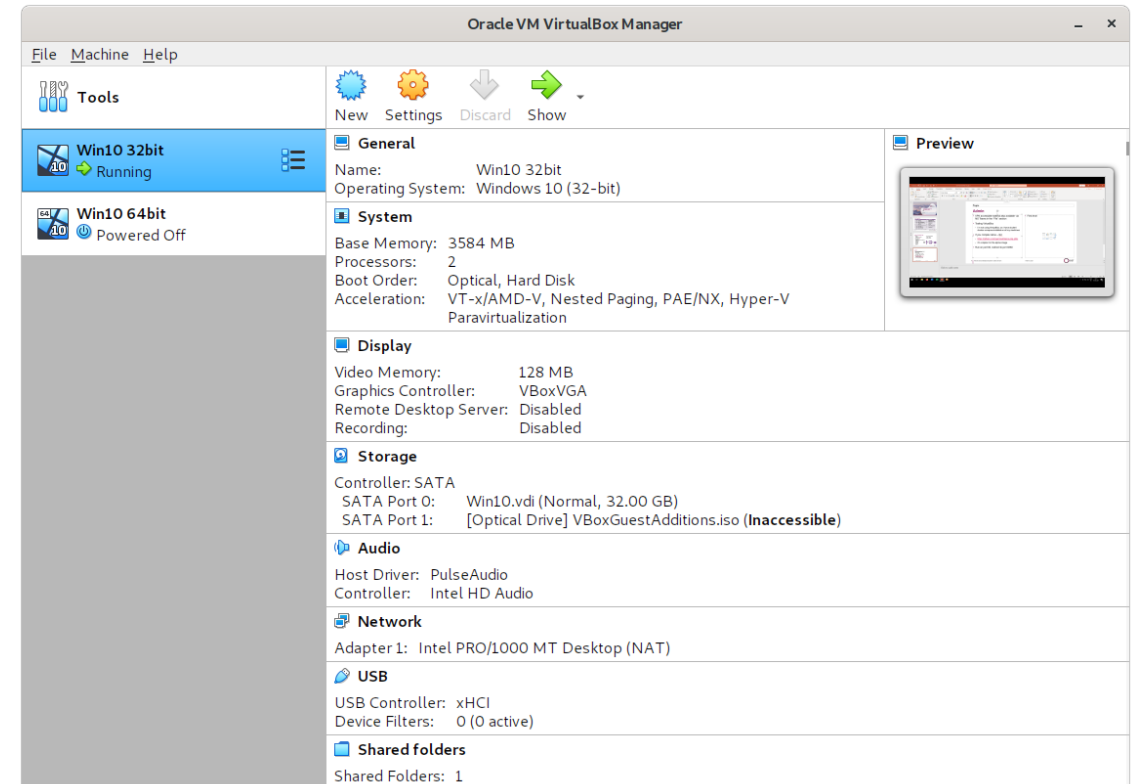
Admin / Challenge Task

- Group forming
 - In progress
 - Tuesday afternoon, final assignment
- Check if your group is [here](#)
- Ideas for Challenge Task:
 - Manage and display the value of your cryptocurrencies
 - Shopping list
 - Manage your grades
 - Personal blog
 - URL-shortener
 - Expense tracker
 - Time tracking
 - Online Quiz
- Unprecise/open requirements
 - Happens in practice 😊
- Possible architecture:



Admin

- VPN accessible material also available via MS Teams in the “File” section
- Testing VirtualBox
 - I’m not using VirtualBox, as I have docker / docker-compose installed on all my machines
- Vbox image is gigantic, 140MB, includes docker/docker-compose
- If you compile native – libc
 - <https://github.com/sgerrand/alpine-pkg-glibc>
 - Or compile it in the alpine image
- Run on port 80, redirect to port 8888



Admin

- Install VirtualBox, click on "File → Import Appliance" → Start
- Alpine user: root, pw: ost12345
 - `ssh -p 2222 root@localhost`
 - `ssh-copy-id -p 2222 root@localhost`
 - `scp -P 2222 vss root@localhost:/root`
 - Update package list: `apk update`
 - List packages: `apk list`
 - More options: `/etc/apk/repositories`
 - Search: `apk search openjdk`
 - Install: `apk add openjdk11-jre-headless (+ ~65MB)`
 - Packages: <https://pkgs.alpinelinux.org/packages>

- Alpine Linux

- "Alpine Linux is built around musl libc and busybox. This makes it smaller and more resource efficient than traditional GNU/Linux distributions. A container requires no more than 8 MB and a minimal installation to disk requires around 130 MB of storage..."
- Often used for virtualization / containers (there is a 32bit version, arm, ppc, etc)

