



OST

Eastern Switzerland
University of Applied Sciences

Distributed Systems (DSy)

Admin

Thomas Bocek

10.03.2024

Nr	Date Rapperswil	Date St.Gallen	Lecture*	Lecturer
01	19.02.2024	21.02.2024	Admin, Introduction / Motivation	Bocek
02	26.02.2024	28.02.2024	Introduction	Bocek
03	04.03.2024	06.03.2024	Load Balancing	Bocek
04	11.03.2024	13.03.2024	Containers and VMs	Bocek
05*	18.03.2024	-	Categorization, Monorepos / Polyrepos, Protocols 1	Bocek
06	25.03.2024	27.03.2024	HTTP/3 practical examples, Protocols 2Authentication, Web Architectures	Bocek
05*	-	03.04.2024	Categorization, Monorepos / Polyrepos, Protocols 1	Bocek
-	-	-	-	-
07	15.04.2024	17.04.2024	Authentication, Web Architectures	Bocek
08	22.04.2024	24.04.2024	Deployment / Mail Infrastructure	Bocek
09*	29.04.2024	-	Blockchain, Bitcoin	Bocek
10	06.05.2024	08.05.2024	Exam preparation, Ethereum Introduction	Bocek
11	13.05.2024	15.05.2024	Smart Contracts	Bocek
09*	-	22.05.2024	Blockchain, Bitcoin	Bocek
12	27.05.2024	29.05.2024	Challenge Task Presentations	you
13	03.06.2024	05.06.2024	Challenge Task Award Winner Announcement, Q&A	Bocek

* topics may change

Challenge Task

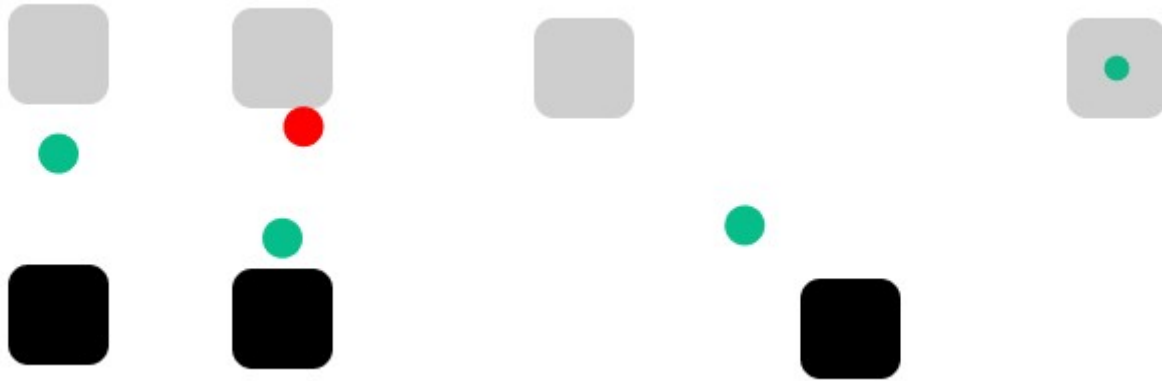
- Admin Slides on MS-Teams
- All students found a group
 - <https://dsl.i.ost.ch/lect/fs24/>
 - Please check if they are in the correct group

Nr	Name 1	Name 2	Name 3	Project
01	Dominik R.	Stefan M.	Nicolas R.	TaskTracker
02	Lukas A.	Silvan K.	Sara O.	
03	Jan M.	Thomas R.	Patrick W.	Matricula*
04	Nils-Robin G.	Mischa B.	Alice G	Puzzle
05	Micha H.	Matthias H.	Tom S.	
06	Philipp F.	Christoph B.	Simon A	
07	Tobias K.	Noah F.		
08	Simon P.	Jonas K.	Isaia B.	
09	Roger M.	Leonardo R.	Tseten E.	wördle
10	Nico F.	Kyra M.	Kevin K.	
11	Claudio D.	Philip S.	?	
12	Sabrina F.	Elena G.		
13	Marco S.	Matteo G.	Philipp H.	Browser Fingerprinting
14	Valentino D.	Andrin K.	Daniel S.	
15	Roman C.	Dejan B.	Mino P.	Mail (MOST)
16	Ali A.	Eric H.	Valerio F.	
17	Martyn F.	Yannick S.	Livio M.	
18	Fabian I.	Noël J.		R/Place
19	David T.	Karim H.	Niklas K.	Clipper (Online clipboard)
20	Patrick S.	Anja F.	Mona P.	
21	Lukas B.	Tim E.		SharedDocs (CRDT)
22	Aziz H.	Fiona P.		

*) Additional requirement: Kubernetes deployment

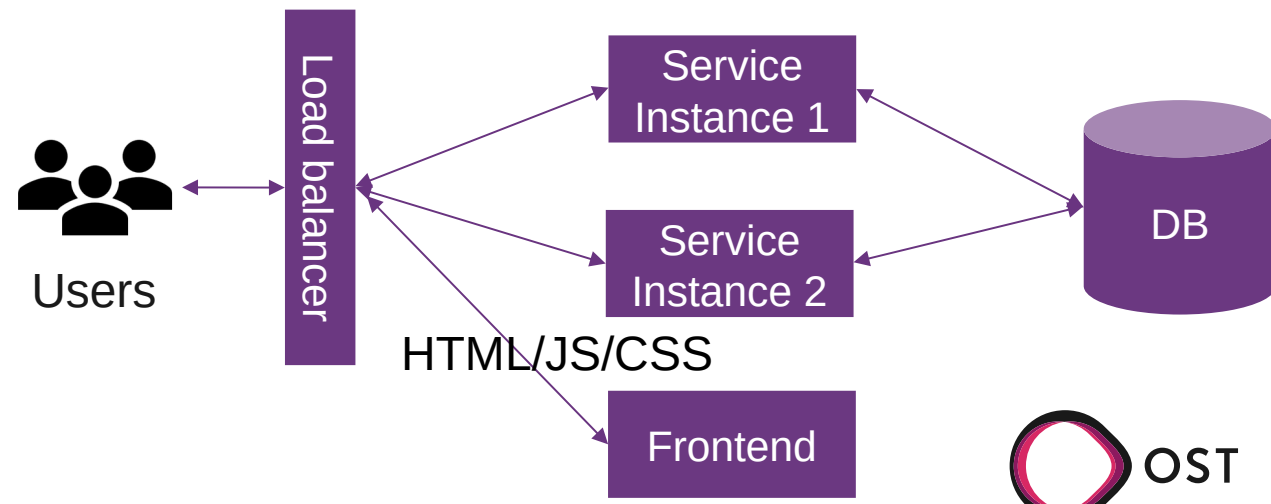
Questions / Discussions

- Visualizing load balancer [[link](#)]



- Why challenge task one one machine?
 - Docker: basis for Kubernetes ([EKS](#), [GKE](#), [MetalLB](#)), Openshift, docker-compose, [AWS Fargate](#), [Cloud Run](#), [Digital Ocean App Platform](#), [Nomad](#)
 - Manual vs automatic setup ([Terraform](#))

- Different cloud providers, different configurations – easy: docker-compose
 - [Kompose](#) → transform to Kubernetes config
 - I'm using using docker-compose for local development
 - docker-compose up (or script to select components)
- [Cloud Operations](#), [Cloud Infrastructure](#)



Questions / Discussions

- Transparent Reverse Proxies / LB
 - Layer 4 [\[link\]](#)
 - Layer 7 [\[link\]](#)
- I'll prefer the easy way, e.g., caddy:

```
https://mysubdomain.mydomain.com {  
    reverse_proxy localhost:8080 {  
        header_up Host {host} # redundant  
        header_up X-Real-IP {remote}  
        header_up X-Forwarded-For {remote} # redundant  
        header_up X-Forwarded-Port {server_port} # redundant  
        header_up X-Forwarded-Proto {scheme}  
    }  
}
```

- Proxy vs. Reverse Proxy (RP)
- OS has proxy, eg. browser accesses Internet via proxy. Every request is sent by proxy RP → splits requests, sends to services

Configure Proxy Access to the Internet

☐ No proxy

☐ Auto-detect proxy settings for this network

☒ Use system proxy settings

☐ Manual proxy configuration

HTTP Proxy Port

☐ Also use this proxy for HTTPS

HTTPS Proxy Port

SOCKS Host Port

☐ SOCKS v4 ☒ SOCKS v5

☐ Automatic proxy configuration URL

