Berner Fachhochschule
Haute école spécialisée bernoise
Bern University of Applied Sciences

LFE-Demandmanagement Workshop G

Thursday, 5th November 2019 17:00

Bewegungslabor, Stadbachstrasse Bern

Team Linux Services, IT-Services

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BFH.science Introduction

Overview

Traditional IT

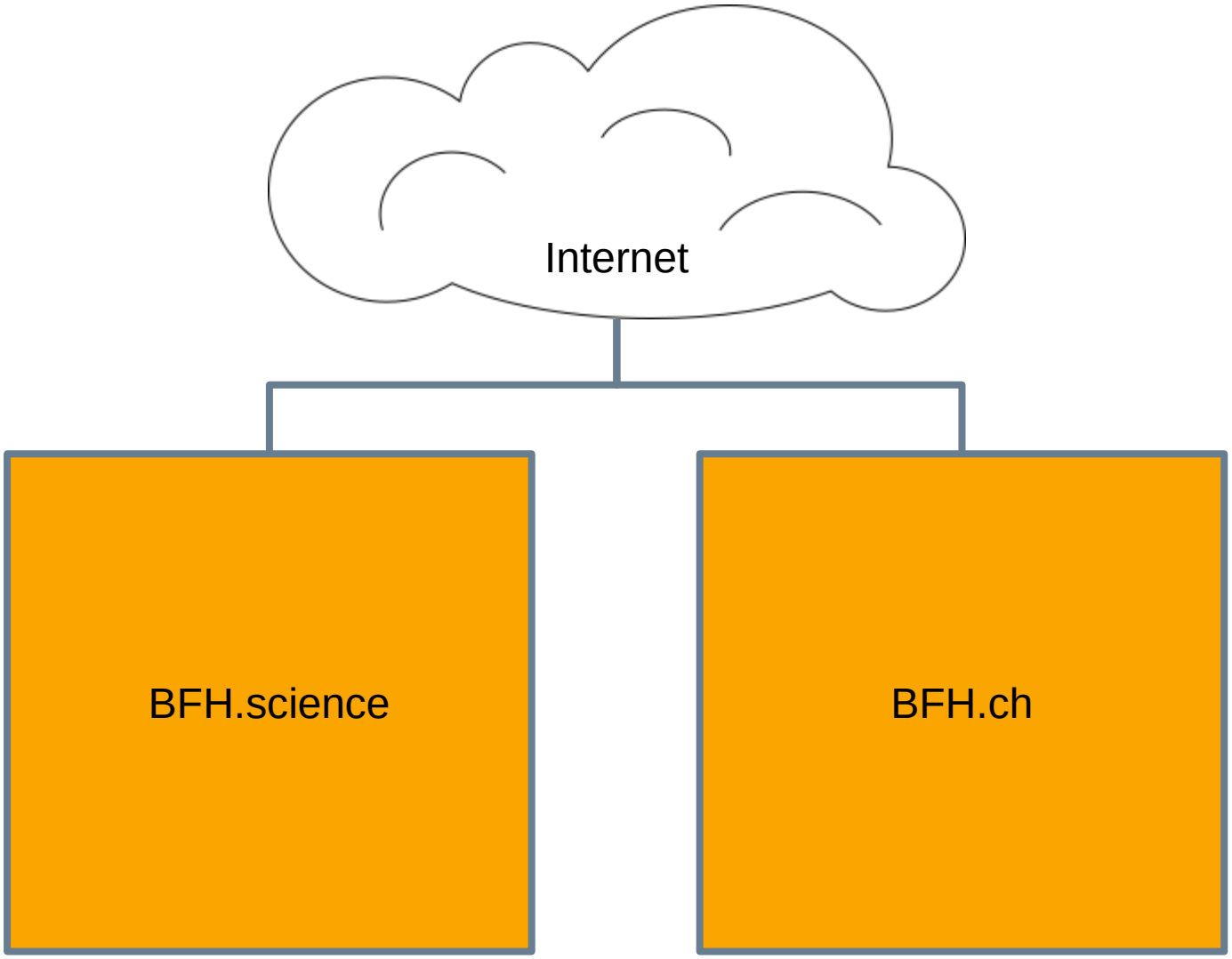
- Managed clients („you cannot install any software on your computer“)
- Netwok behind firewall (access from outside the organisation via VPN)
- *Taylored towards the needs of office workers*

LFE (Lehre, Forschung, Entwicklung)

- Install software („quickly try a new program“)
- Accessible from outside (example: send sensor data to a server)
- Store large amounts of data, number crunching
- *Needs flexibility*

Separation

- Traditional IT: bfh.ch
- Science DMZ: bfh.science


Internet
BFH.science
BFH.ch

Science DMZ: bfh.science

- Different hardware servers
- Different Infrastructure:
  - Different network (no connection between bfh.science and bfh.ch)
  - Different storage (\\bfh.ch\data\LFE*)
  - Built on Linux (flexibility and scailability)

  => maximum flexibility for you
- Full stack automatisation

  => fast response to your demands

- Initially a lot of work for us.
  - Hardware (servers, cables,...)
  - Software (design, configuration, automatisation,...)

(3.86PB of HDDs)


10TB
EXOS


SUPERMICR
SUPERMICR
SUPERMICR

Imagine photos of software configuration here

Timeline

2019

- January: Start
- Network („Internet access“)
- Basic services („What is needed to install Linux servers“)
- Storage („Ceph cluster“)
- Linux („Platform for R“)
- Number cruncher („R“)
- Nextcloud („Fileshare“, like SWITCHdrive or Dropbox)

2020

- Cloud / Virtualisation („Click your own server“)
- … *Tbd*

See: https://timeline.bfh.science/ for more details

Nextcloud Introduction

Overview

Filesharing

- General, ways to go
- Alternatives

Nextcloud

- Demo
- Prospect

Filesharing – General

?

Filesharing – Ways-to-go

- attachement too big
- considered as spam
- asynchronous handling

→ inconsistency

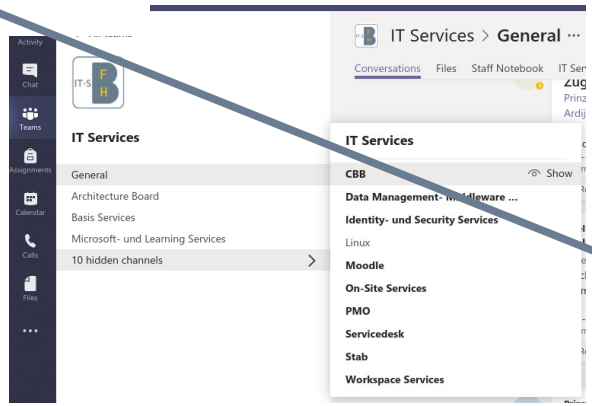
Laufwerk P:

Das Laufwerk P: dient zur Ablage der elektronischen Dateien, die bei der täglichen Arbeit anfallen.

Ziel
Die Mitarbeiterinnen und Mitarbeiter der HAFL sollen die Dateien auf der Ablage P: finden und darauf zugreifen können.

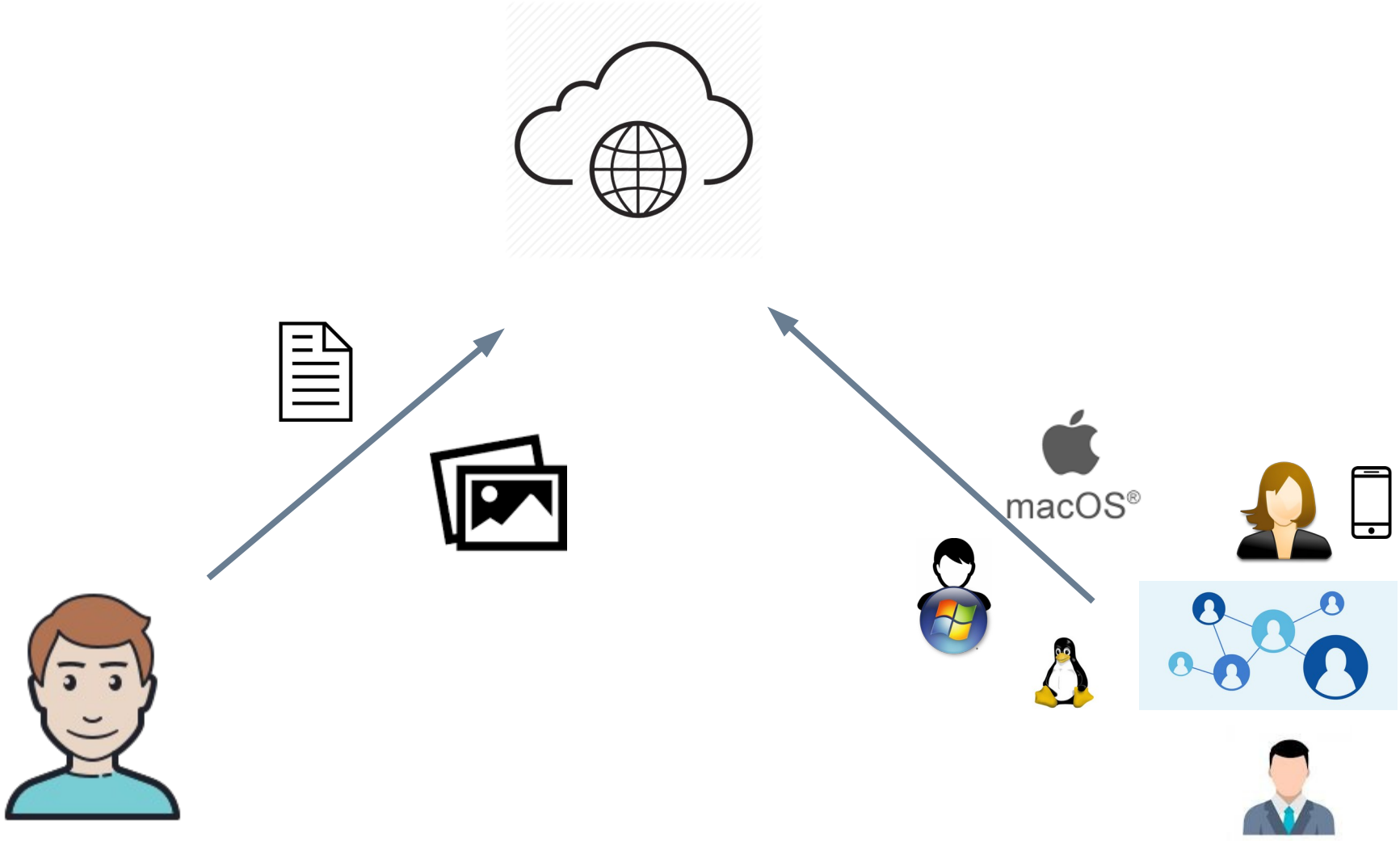
```
sudo mount -t cifs //bfh.ch/data /mnt user=
```

```
sudo mount -t nfs 147.87.244.61:/Users/d/mnt
```

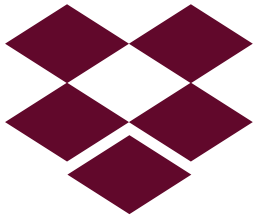


Who is who ?

Filesharing – Ways-to-go



Cloud solutions



opentext™ HIGHTAIL

STORGRID

OneDrive

Seafile

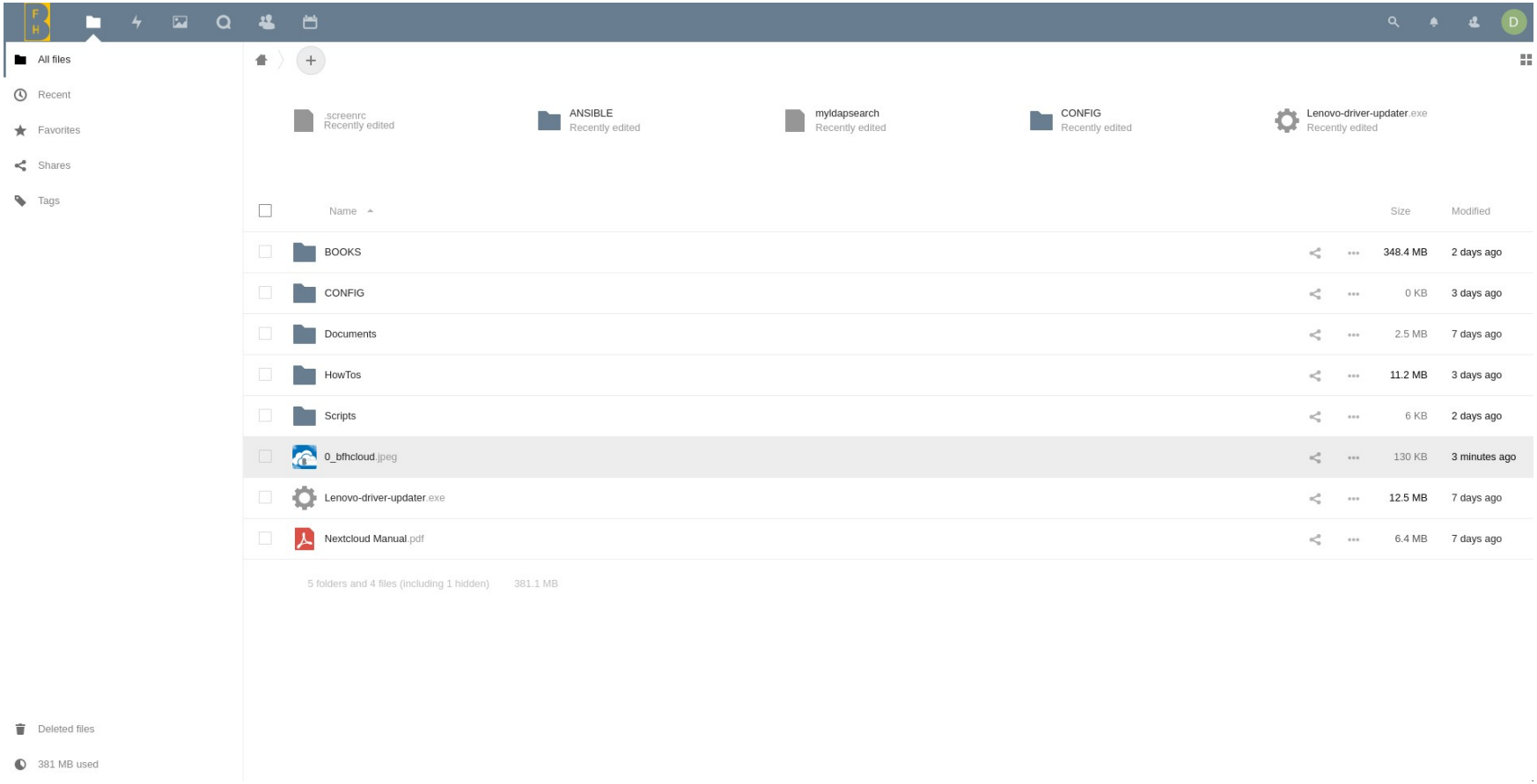
ownCloud

WeTransfer

Nextcloud

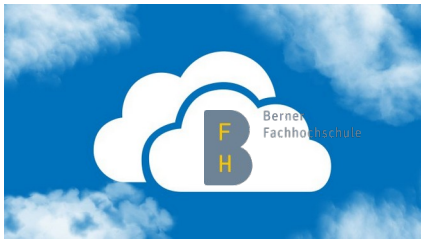
Nextcloud - Demo

- Demo internal setup



Prospect

- Test setup refinement
- Rollout in production



OpenStack Introduction

OpenStack

- Virtualisation
- Private cloud
- Self service

Now

- „Only“ containers and only Debian

Virtualisation

- Like VirtualBox and VMware
- OpenStack allows to run any Linux distributon and Windows the Science DMZ

However, in a frist step we will only support Debian!

Private Cloud

- „Having the benefits of a cloud in-house“
- Manage OpenStack resources as users or groups
- Cheap and uncomplicated (no billing involved)
- Fast because everything is close together (Network: High bandwidth and low latency)

Self Service

- „Easier and faster for you, better for us“
- The process is:
  - Login to dashboard with BFH credentials
  - Select what you want (name, public/private, resources, operating system)
  - Click „create“, a few seconds later the „virtual computer“ is ready for you
- For this to work, behind the scenes some tasks have to be done
- For containers you have to wait for us to create them, with OpenStack you can do it on your own.

Project time

Available ressources

For the period 1. April – 31. July 2020

- Team Linux (bad9, dxk1, kud3, nas3, shs1) only.
- For each person: estimated days per week available for projects (=new things we do for you).
- Subtract holidays and infrastructure maintenance.
- There is a **total of 20 weeks worktime** available for projects of BFH for this period.

  (we count everything in weeks)
- We will distribute the 20 weeks according to size and users among the BFH departments.
- You priorize what we will do in this time for you

Zielperiode: 1. April 2020 bis 31. Juli 2020 = 17 Wochen

Person	Job	Project work (day/week)	Project time (days)	Project time (weeks)
bad9	100.00%	1	17	3
dxk1	90.00%	3	51	10
kud3	100.00%	3	51	10
nas3	60.00%	2	34	6
shs1	80.00%	3	51	10
Brutto	**430.00%**			**39 Weeks**

Tasks	Work	
Holiday proportionately	1.5w/Person/Quarter	- 8 Weeks
Debian infrastructure	1d/w	- 3 Weeks
Base infrascructure	2d/m	- 2 Weeks
other work		- 6 Weeks
Netto		**20 Weeks**

Thank You for Your Attention.

❤ Source Code is freely available

git clone https://git.bfh.science/users/bad9/slides