



# IT Infrastructure

Remote Login, LDAP Account, Cluster, ...

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# Admins

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Nils



Christopher

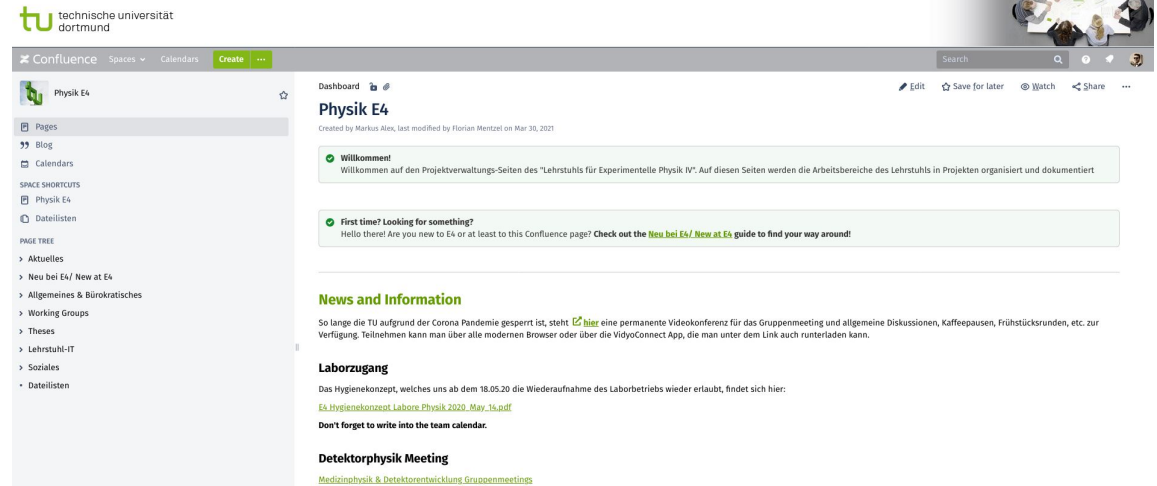


Lucas

# Confluence

E4 confluence: Documentation, Information, Meeting Material, ...

- Onboarding:  
→ “Neu bei E4/New at E4”
- Computing Tutorial
- Various other tutorials



The screenshot shows the Confluence interface for the 'Physik E4' space. The top navigation bar includes the TU Dortmund logo, 'Confluence' title, and options for 'Spaces', 'Calendars', and 'Create'. The left sidebar contains a navigation menu with categories like 'Pages', 'Blog', 'Calendars', 'SPACE SHORTCUTS', and 'PAGE TREE'. The main content area features a 'Dashboard' for 'Physik E4', created by Markus Alex. It includes two welcome messages: 'Willkommen' and 'First time? Looking for something?'. Below these are sections for 'News and Information' and 'Laborzugang' (Labor Access), which mentions a hygiene concept and a PDF document. The 'Detektorphysik Meeting' section is also visible at the bottom.



# LDAP Accounts

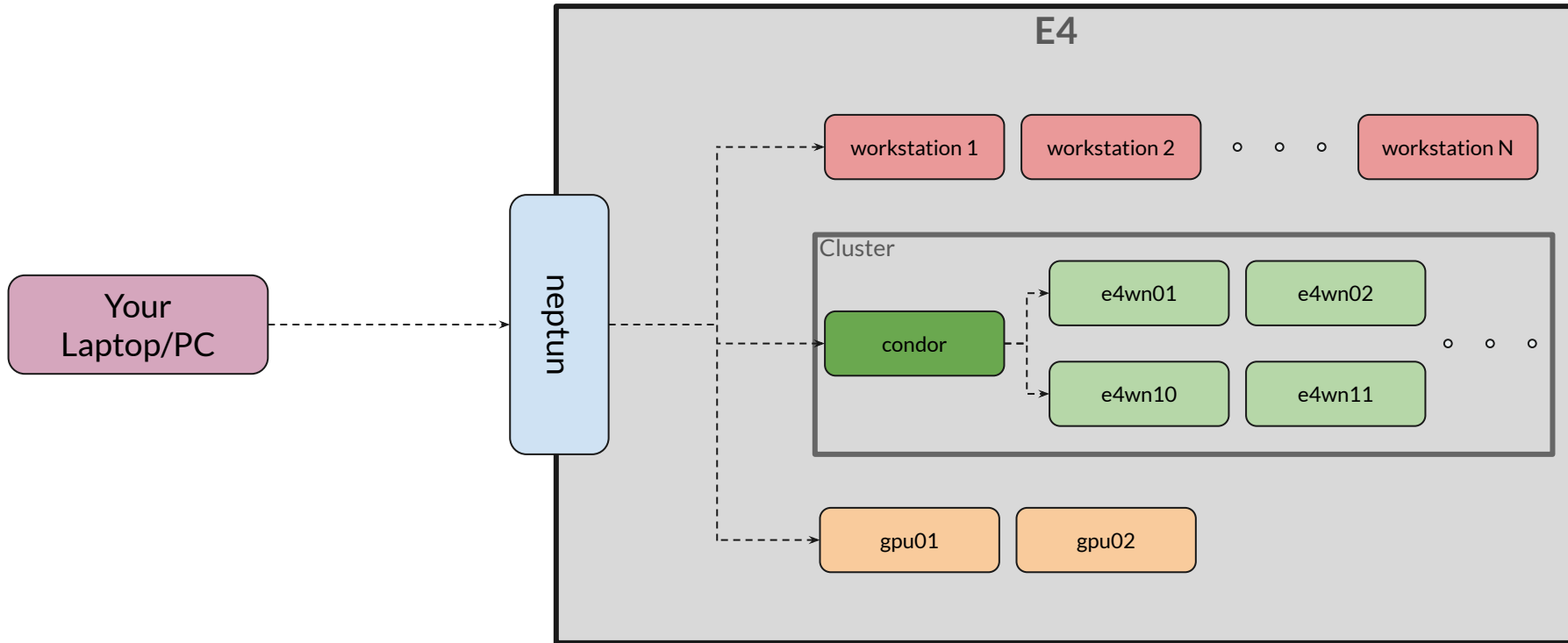
- account to use our infrastructure (Mattermost, Workstations, Gitlab, ...)
- we will create one for you, after you send us the necessary file (→ [confluence](#))

user\_e4\_mmustermann.txt

```
sn: Mustermann
givenName: Max
primary_group: e4
mail: max.mustermann@tu-dortmund.de
sshPublicKey: ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQCAQC1hMP+1h3uZWU1J7y/AP2THw1NvwFbT601rqppqHuNUZqBv1/+txTHOpMfnyEFwf7YMG6
```



# Overview Infrastructure





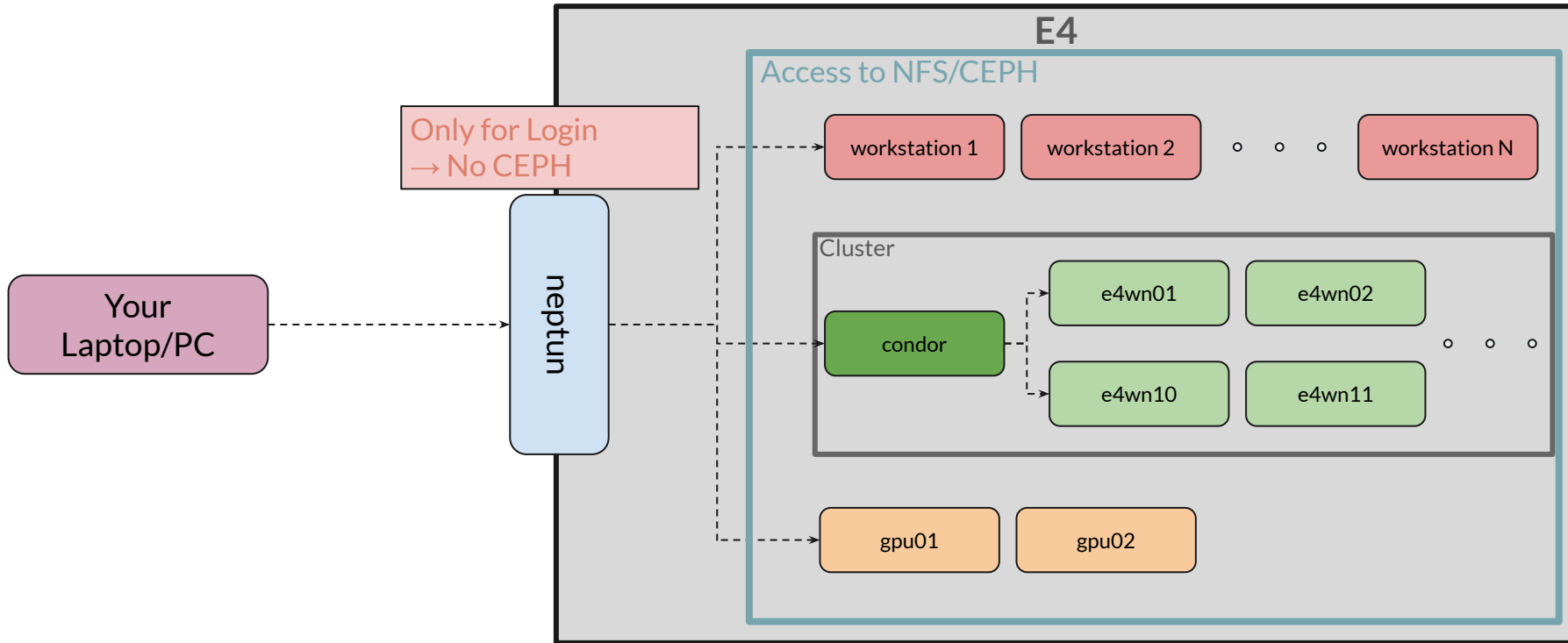
# Filesystems

All of your files are stored on a server and managed by 2 filesystems. These are then “mounted” on all of our machines → you can access your files on each machine and any changes are synchronized by the server

- NFS: `/net/e4-nfs-home.e4.physik.tu-dortmund.de/home/yourusername`  
Each of you has a one NFS home associated with your LDAP account, Limited Space but faster
- CEPH: `/ceph/groups/e4/users/yourusername`  
You can request a folder in the CEPH, (More or less) unlimited space but slower

**Idea:** Develop and store your scripts in NFS, store larger data files in the CEPH

# Overview Infrastructure





# Software

- CVMFS:  
software stack from CERN (lcg releases)
- Conda Enviroments:  
Created and maintained by us, centrally provided

For details on setup: ask us or your supervisors

## Disclaimer:

At the moment we have 2 similar but not identical operating systems:

- Almalinux9 **New**
- Centos7 **Old**

Relevant when you source software



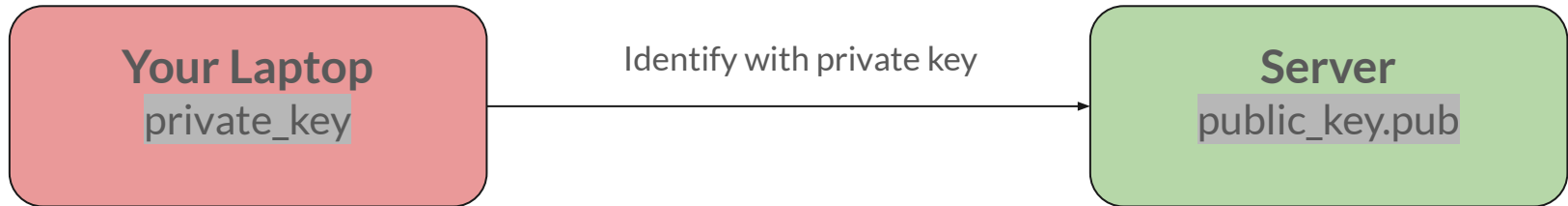


# Remote Login: SSH

## Concept of SSH:

Pairs of private and public key

You will create a pair and send us the public key and we will put it on our server associated with you account. Then you can always use your private key to log into your account



# Remote Login: SSH

- Generate ssh key pair: [Tutorial](#)

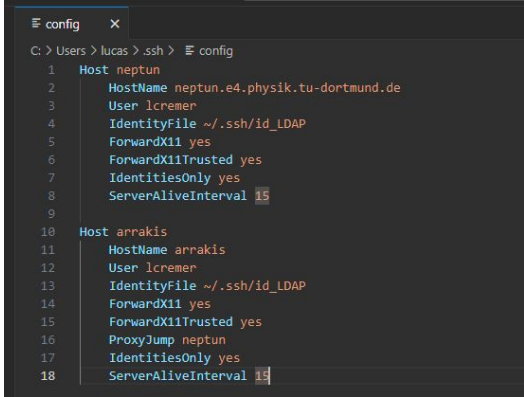
```
ssh-keygen -t ed25519 -C "Max Mustermann LDAP key"
```

- keys are just plain text files → you can just copy them to new machines if you need to

- Create a config

- Now login with

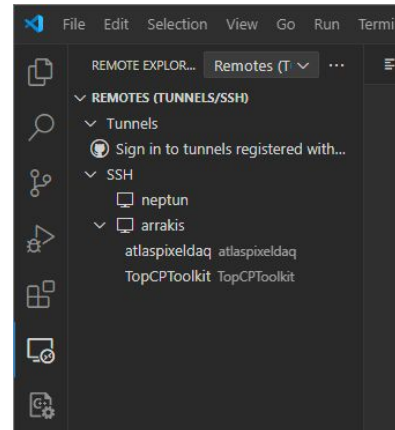
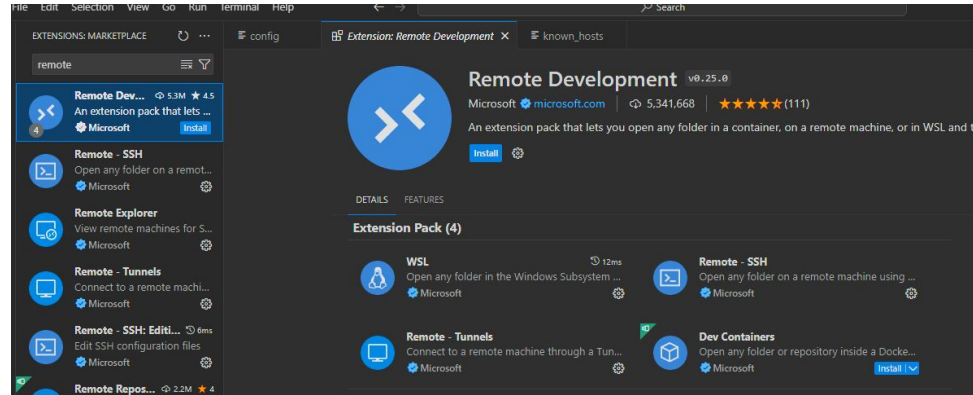
```
ssh neptun/your_ws_name
```



```
config x
C:\Users\lucas> ssh > config
1 Host neptun
2   HostName neptun.e4.physik.tu-dortmund.de
3   User lcremer
4   IdentityFile ~/.ssh/id_LDAP
5   ForwardX11 yes
6   ForwardX11Trusted yes
7   IdentitiesOnly yes
8   ServerAliveInterval 15
9
10 Host arrakis
11   HostName arrakis
12   User lcremer
13   IdentityFile ~/.ssh/id_LDAP
14   ForwardX11 yes
15   ForwardX11Trusted yes
16   ProxyJump neptun
17   IdentitiesOnly yes
18   ServerAliveInterval 15
```

# Remote Login: VSCode

1. Download [VSCode](#)
2. Install Remote Extension
3. Open Remote Session on your workstation
4. Done!





# Services

- [Gitlab](#):  
important to back up your data (you should always do) and to manage group projects
- [Mattermost](#) (use: “Sign in with Gitlab”):  
communication, groups to ask questions
- [Jupyterhub](#):  
web-based interface to our infrastructure

(should not be necessary if you use VSCode)



# Thesis Exit Strategy

- talk to your supervisor what should happen to your data
- back-up your code (ideally already done with git)
- please notify us that we can delete your NFS/CEPH folder
- you can also ask us in case of any questions



## Concluding Remarks

- always feel free to ask if you have any questions
- notify us if some documentation is missing or any machines, etc is not working (Mattermost Channel)
- use resources only if you need them, not just because they are there → there are also other people which might need them
- try to keep your home and CEPH folders cleaned up and prevent unnecessary blocking of storage