Linux desktops at DESY

Linux Admin Meeting

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Hamburg, 10th December 2019

HELMHOLTZ RESEARCH FOR GRAND CHALLENGES

DESY.

Agenda

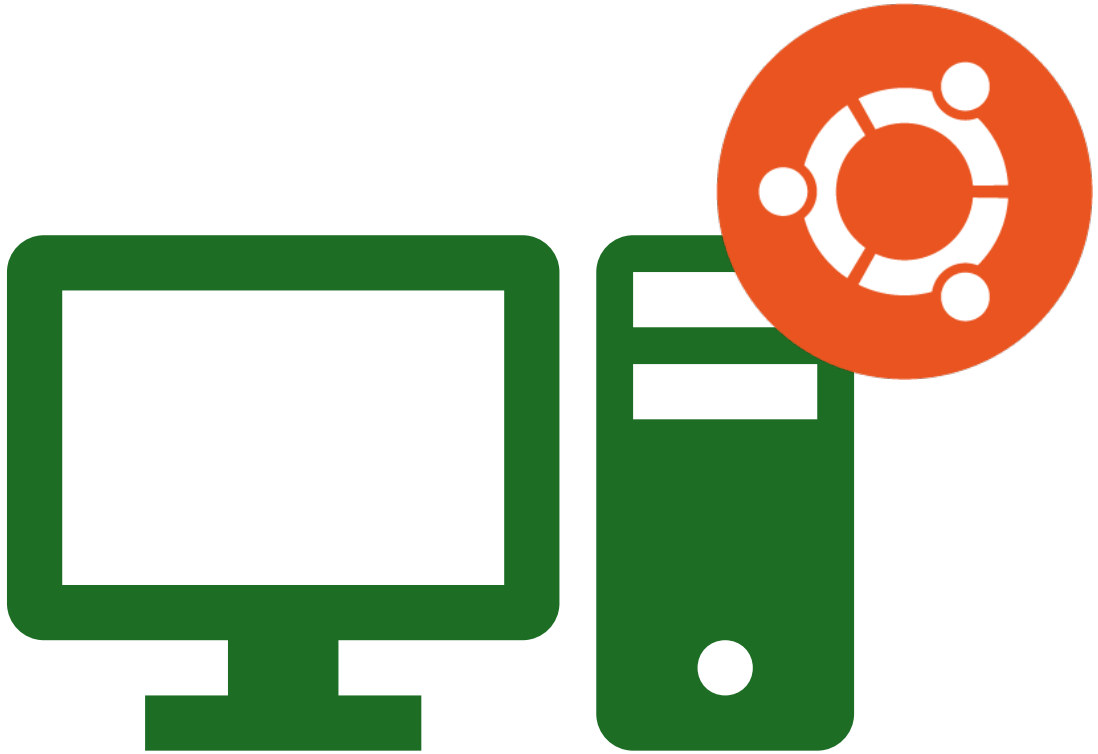
Linux desktops at DESY

01 Desktop concept

02 Developments to meet user requests

02 Accessing remote data

04 Future outlook



Desktop concept

Desktop concept

Idea

Green desktop

- Linux configuration provided by IT with Foreman, Puppet
- Users can install software from preconfigured repositories via “Packages” software store
- No root access for users but for group admins
- Support offered by IT

Yellow desktop

- Initially green desktop puppet installation, then puppet and IT administration is stopped completely
- Only select if the intended use cannot be achieved otherwise
- No support by IT

Desktop concept

No user root access, but group admin root access

- It has proven beneficial to enable group admin access to the root account of the green desktop
- Some tasks can be carried out by the group admin... executed with care, and knowledge!
- If things are screwed up, the group admin has to fix them, not IT :-)
- If you are a group admin and do not have root access, please contact us
- ... but please behave :-)

Desktop concept

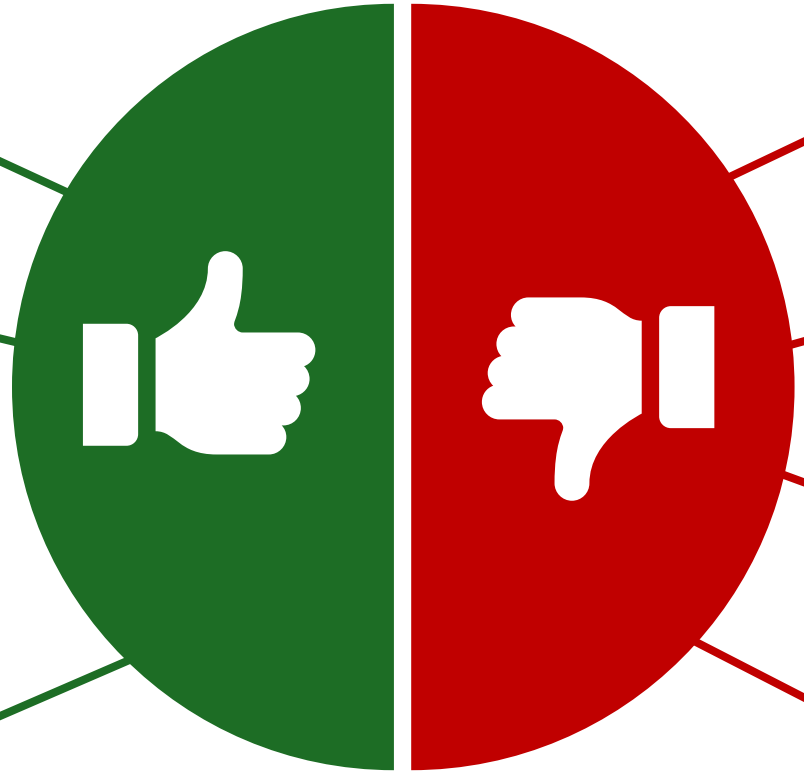
Using root access as a group admin

Exemplary Dos

Install required packages

Change service configs if not managed by Puppet

Debug errors by disabling Puppet temporarily



Exemplary Don’ts

Add users to sudo group

Add large repos (e.g. PPAs)

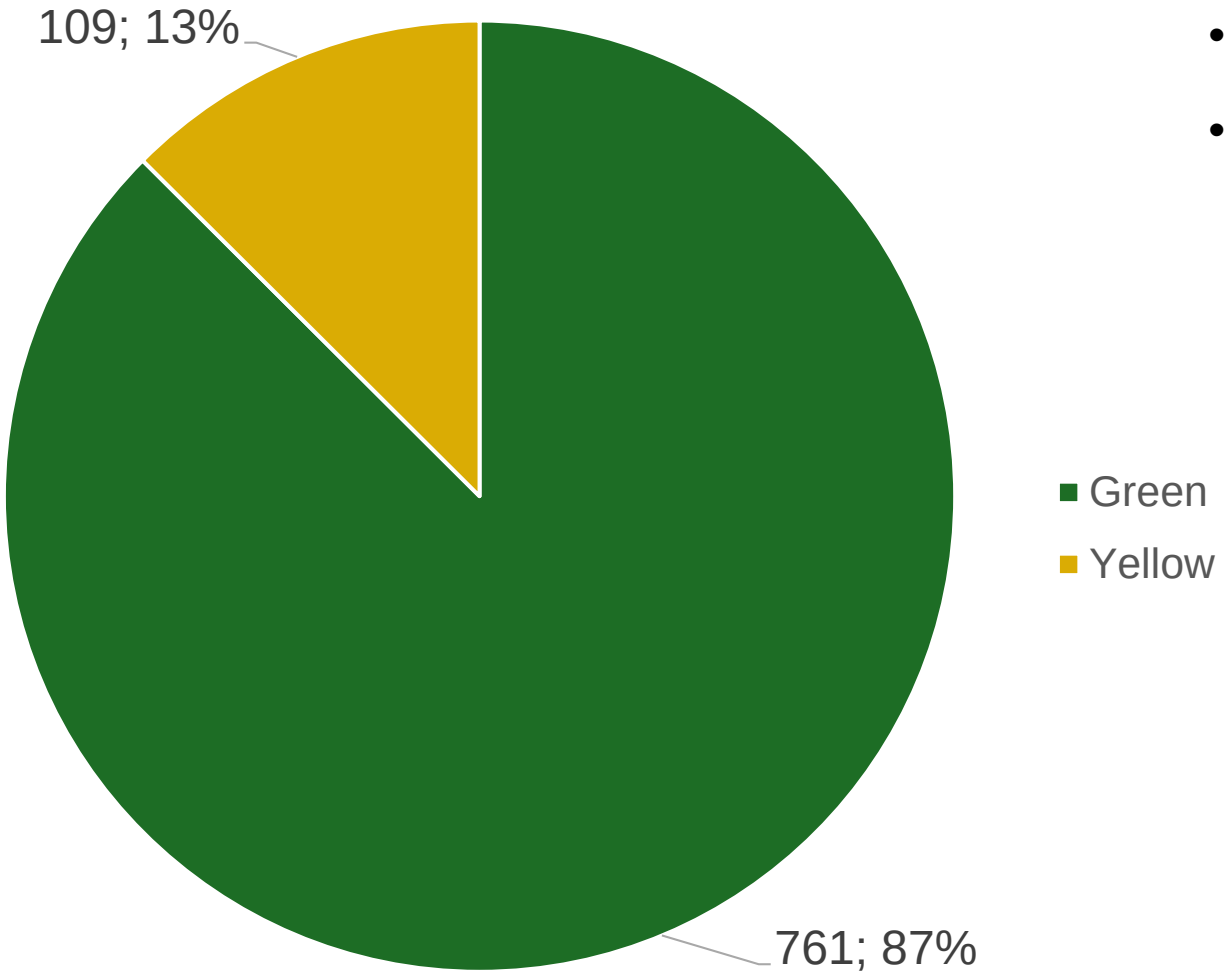
Make files managed by Puppet immutable

Disable the Puppet agent forever

Green desktop concept

Statistics

Distribution of yellow and green desktops



Why use yellow desktops instead of green ones?

- Installing custom software
- Configuring, accessing custom hardware

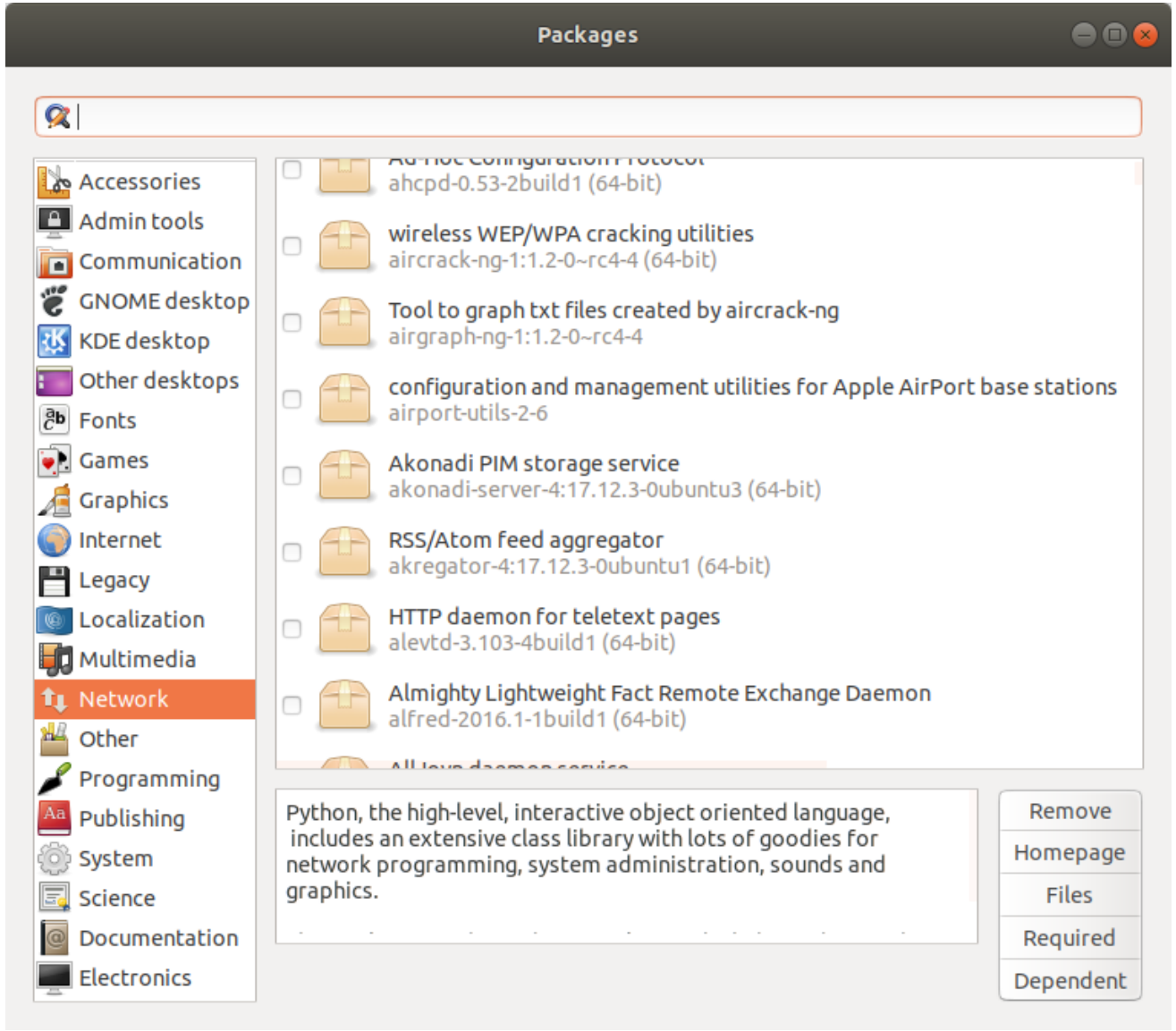
Developments to meet user requests

Developments to meet user requests

Software

How to install software

- Users: Install via “packages” or Docker
- Group admins: Install otherwise unavailable software via `apt-get install` as root (Think about best practices, e.g. not adding PPAs)
- Software is needed by many people?
  Contact unix@desy.de
  → Package will be added to the DESY-repositories if possible

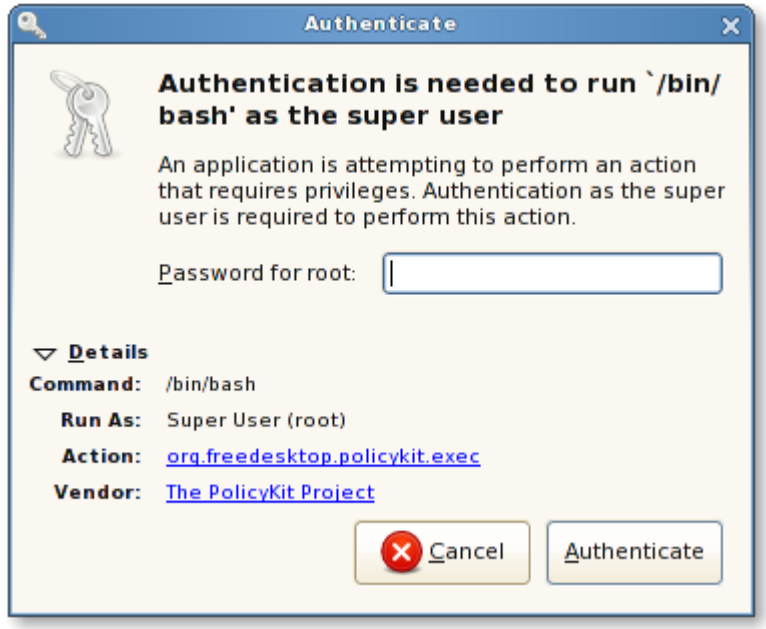


Developments to meet user requests

Permission management

How can users be authorized to perform certain actions?

- By using PolicyKit
- Allows the definition of central policies that enable the use of software




```
/var/lib/polkit-1/localauthority/30-site.d# cat 10-de.desy.gpk.pkla
# Managed by Puppet (desktop)
# Do NOT edit, changes will be overwritten!

[Allow users to run gnome-packagekit]
Identity=unix-group:*
Action=Action=org.freedesktop.packagekit.package-downgrade;org.freedesktop.packagekit.package-eula-accept;
org.freedesktop.packagekit.package-install;…
…
```

Developments to meet user requests

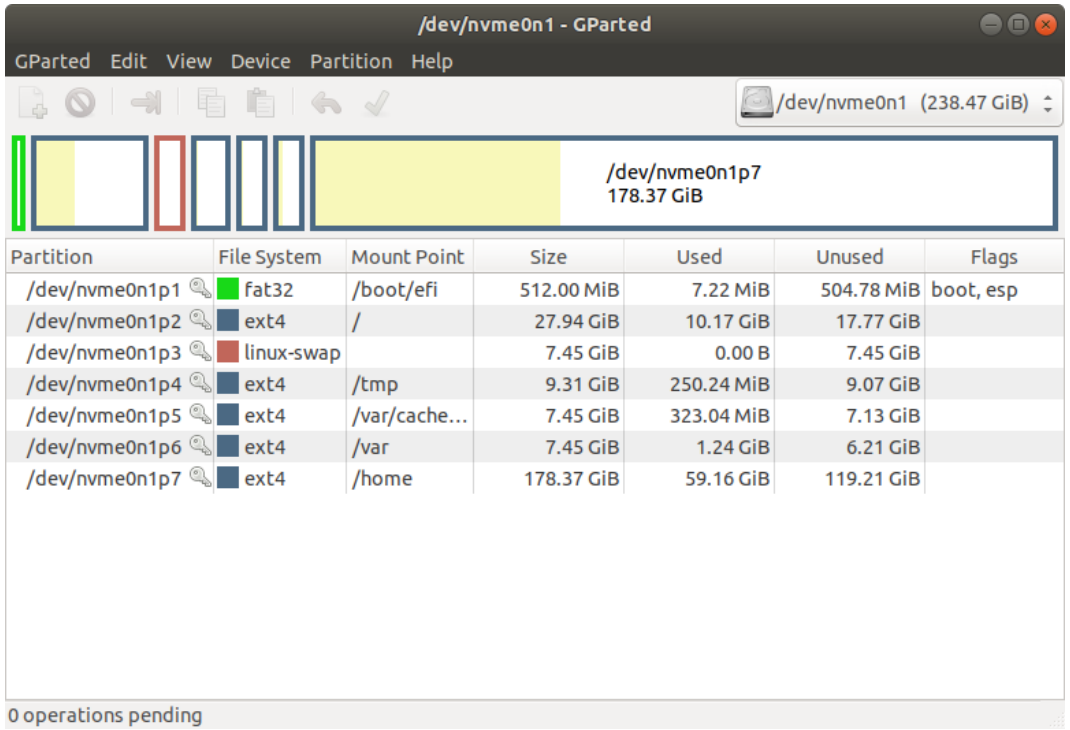
Partitioning

Request: Allow disk management on green desktops

- PolicyKit rule added
- Enabled for specific host groups/hosts as needed via Hiera entry (`desktop::enable_disk_management: true`)

General notes

- /home is local
- Working as root: Take data privacy into account
- CVMFS possible on green desktops

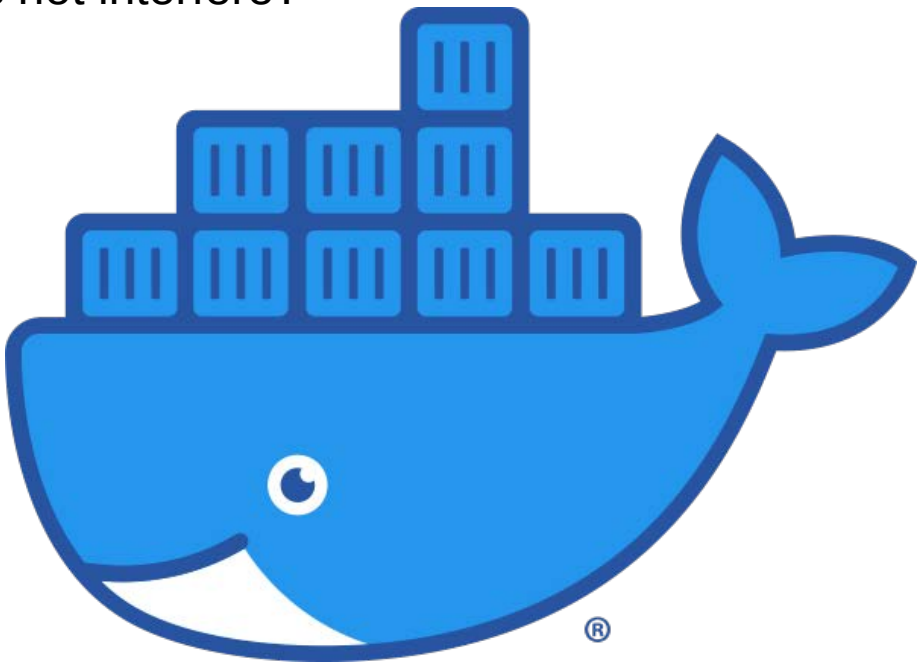


Developments to meet user requests

Docker

When should I use Docker?

- How can I execute container images?
- How to run software that requires root privileges?[1]
- How to configure an environment in which Puppet does not interfere?



What is Docker?

- Free software for isolating applications with OS-level virtualization
- Multiple isolated user space instances (containers)
- More lightweight than virtual machines

DESY-specifics

- Authorization plugin on green desktops
- Blocks options which reduce isolation levels

[1] Sometimes own software can also be installed without root rights. For more information, please visit https://confluence.desy.de/display/linux/Green+Desktop+FAQ

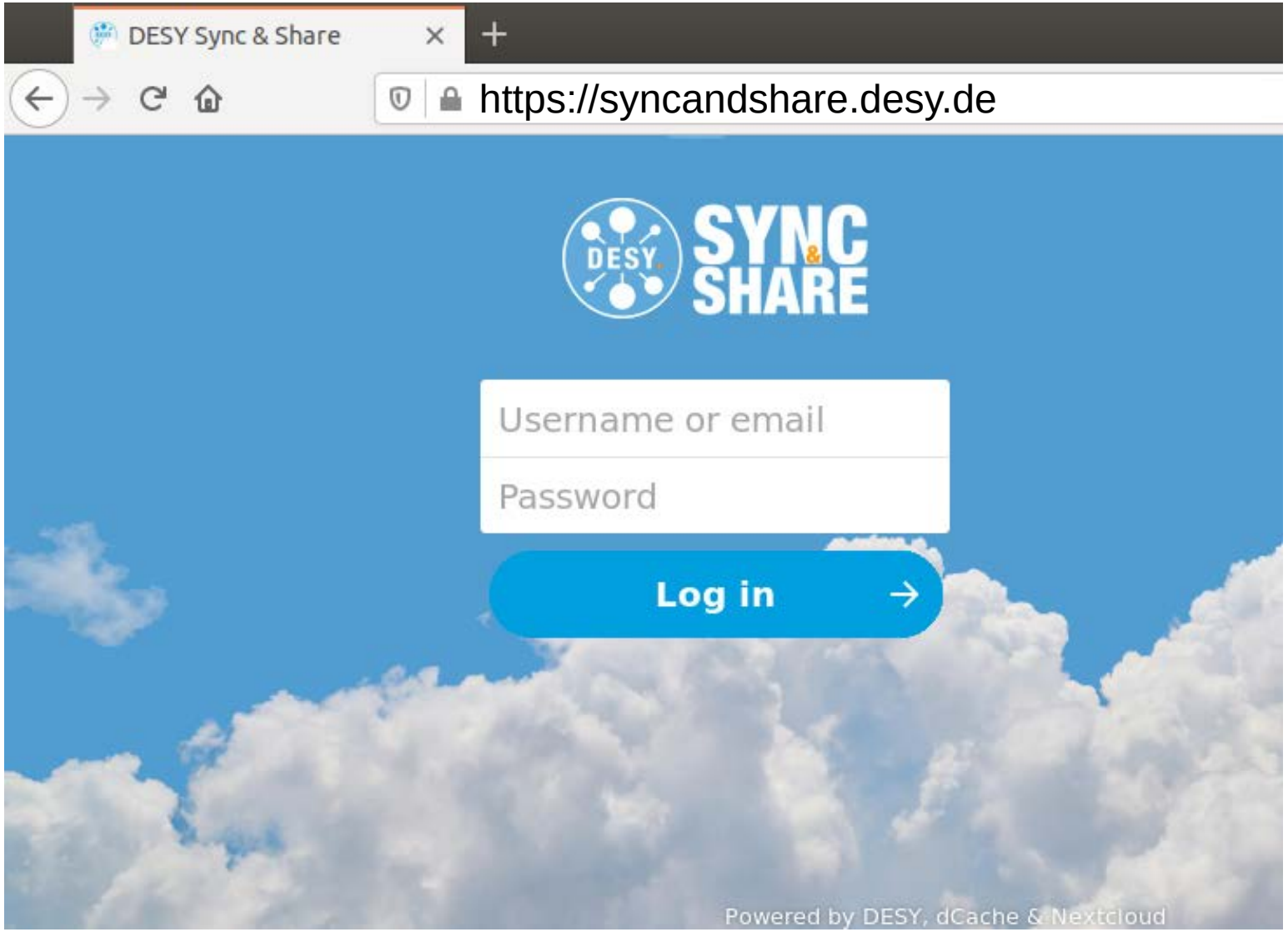
Accessing remote data

Accessing remote data

Sync and Share

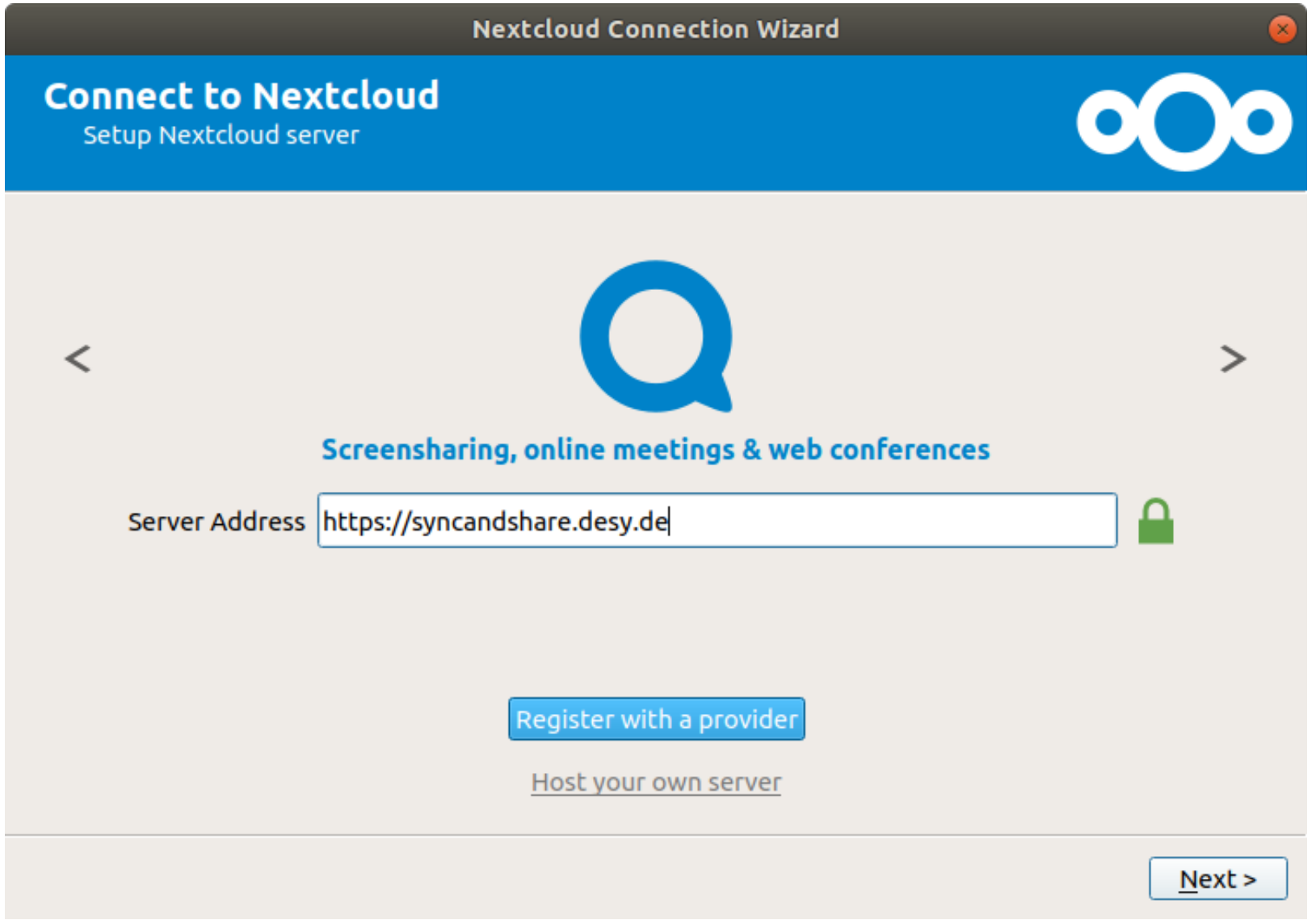
What is Sync and Share?

- Online data storage service
- Access from everywhere
- Web interface, client, WebDAV mount
- Share data via link, mail



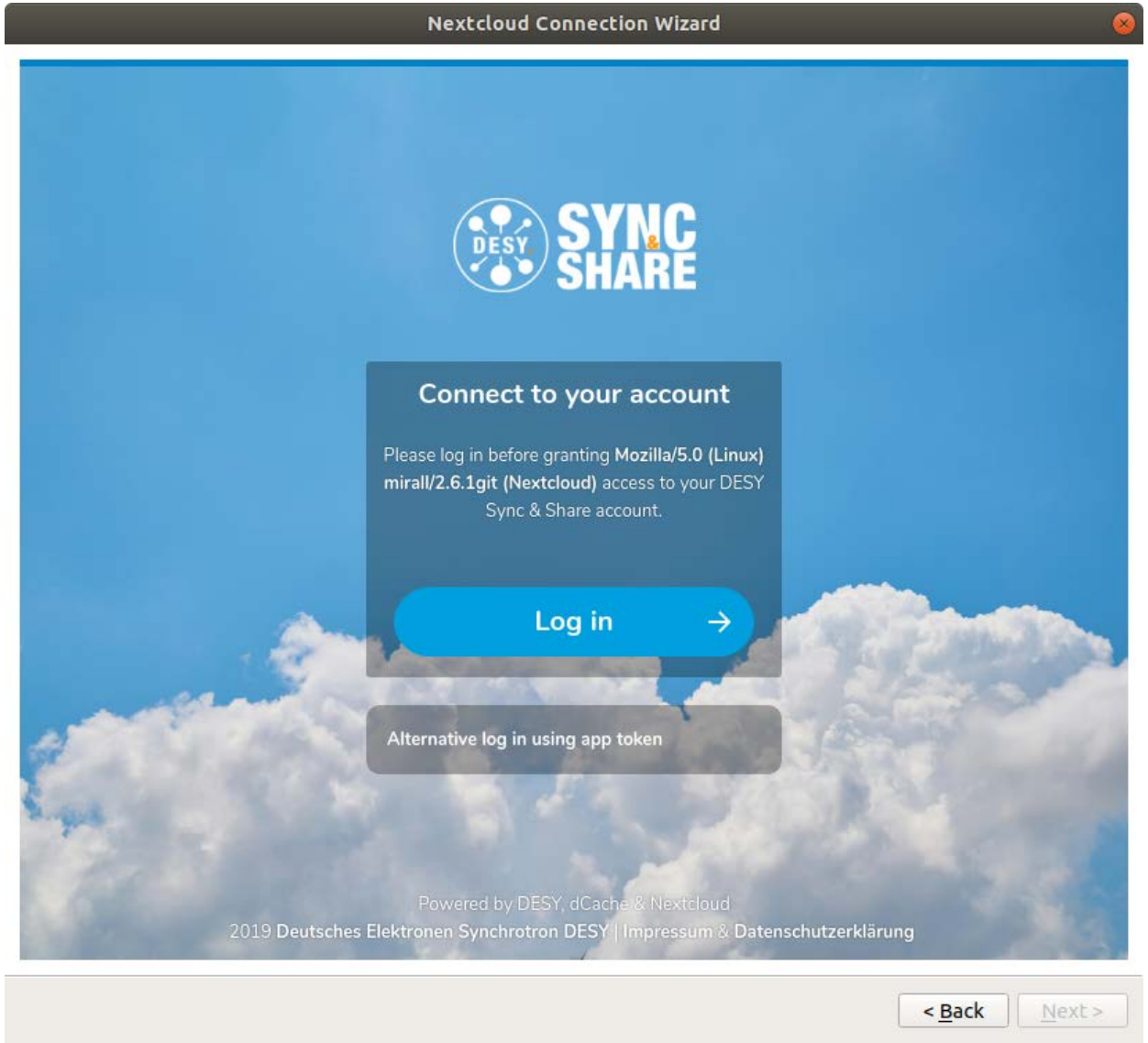
Accessing remote data

Sync and Share – client



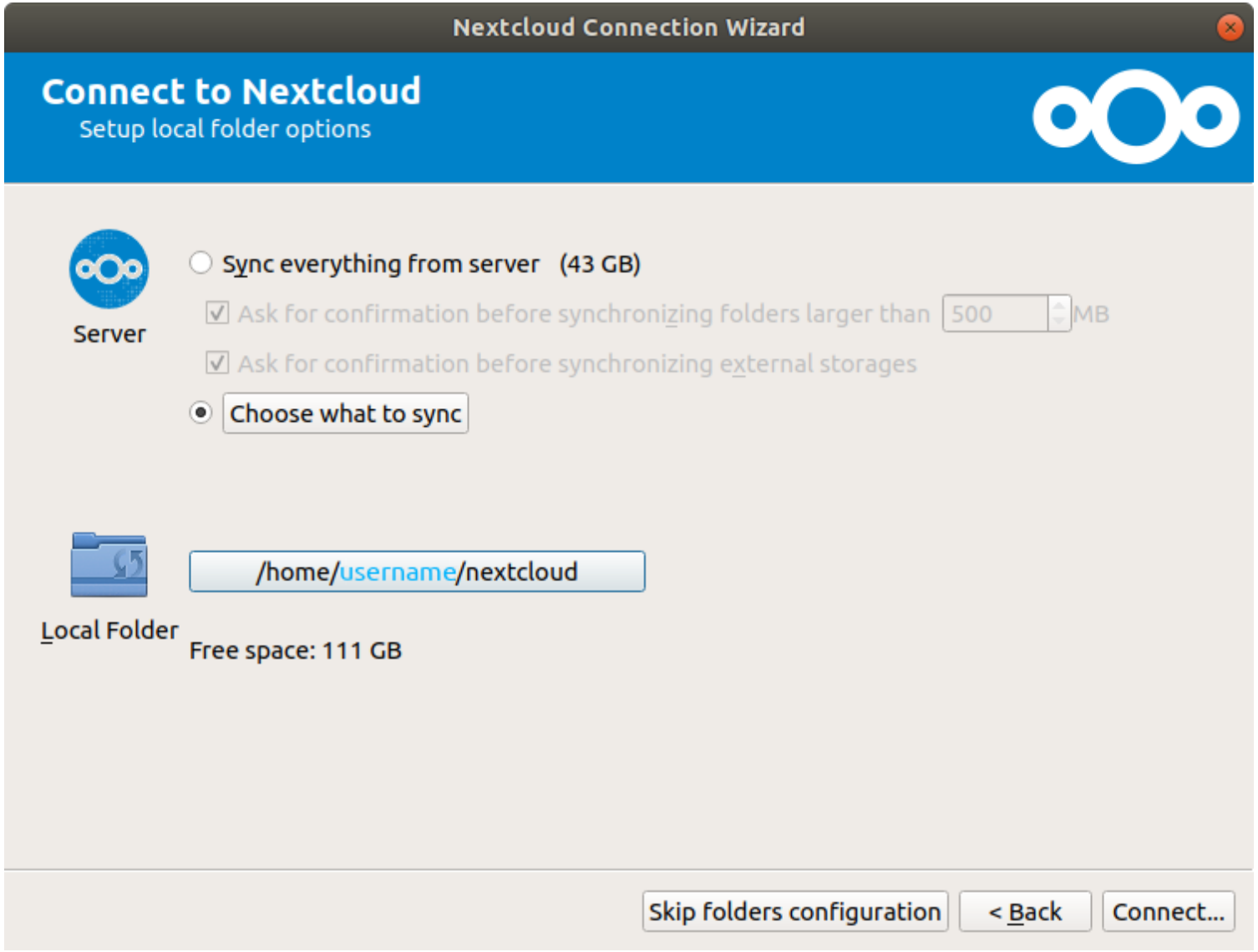
Accessing remote data

Sync and Share – client



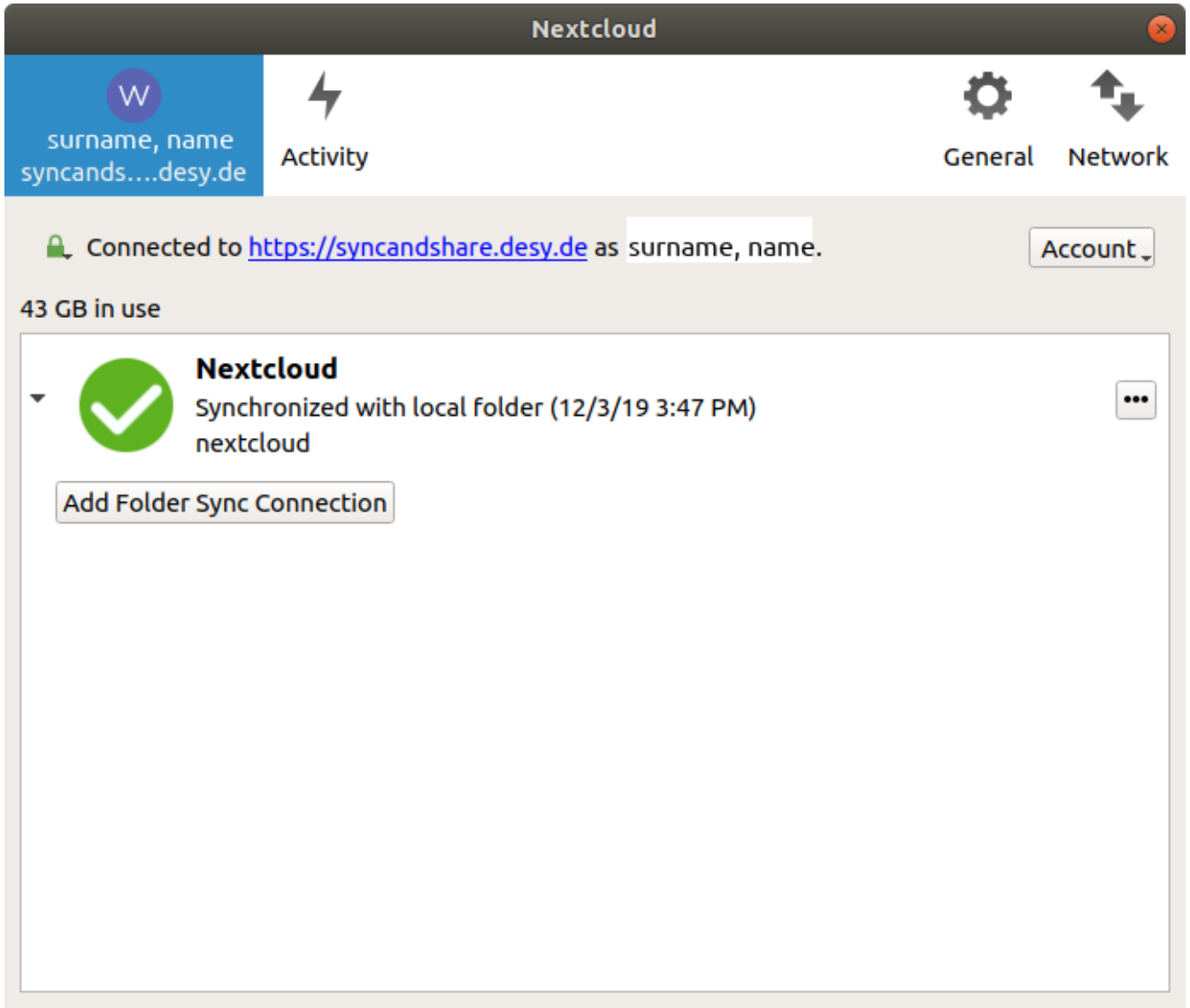
Accessing remote data

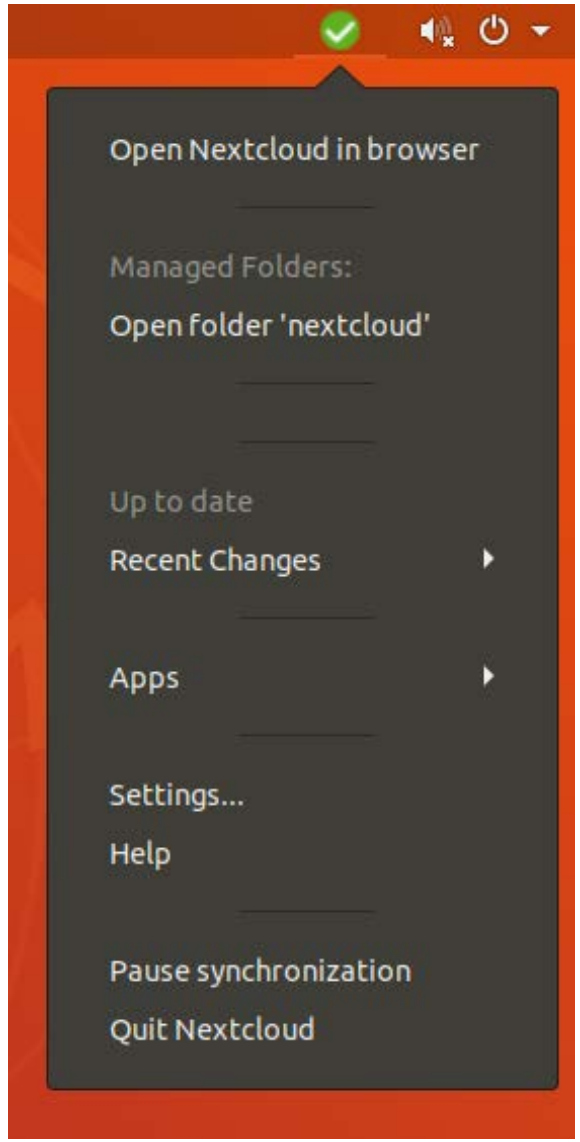
Sync and Share – client



Accessing remote data

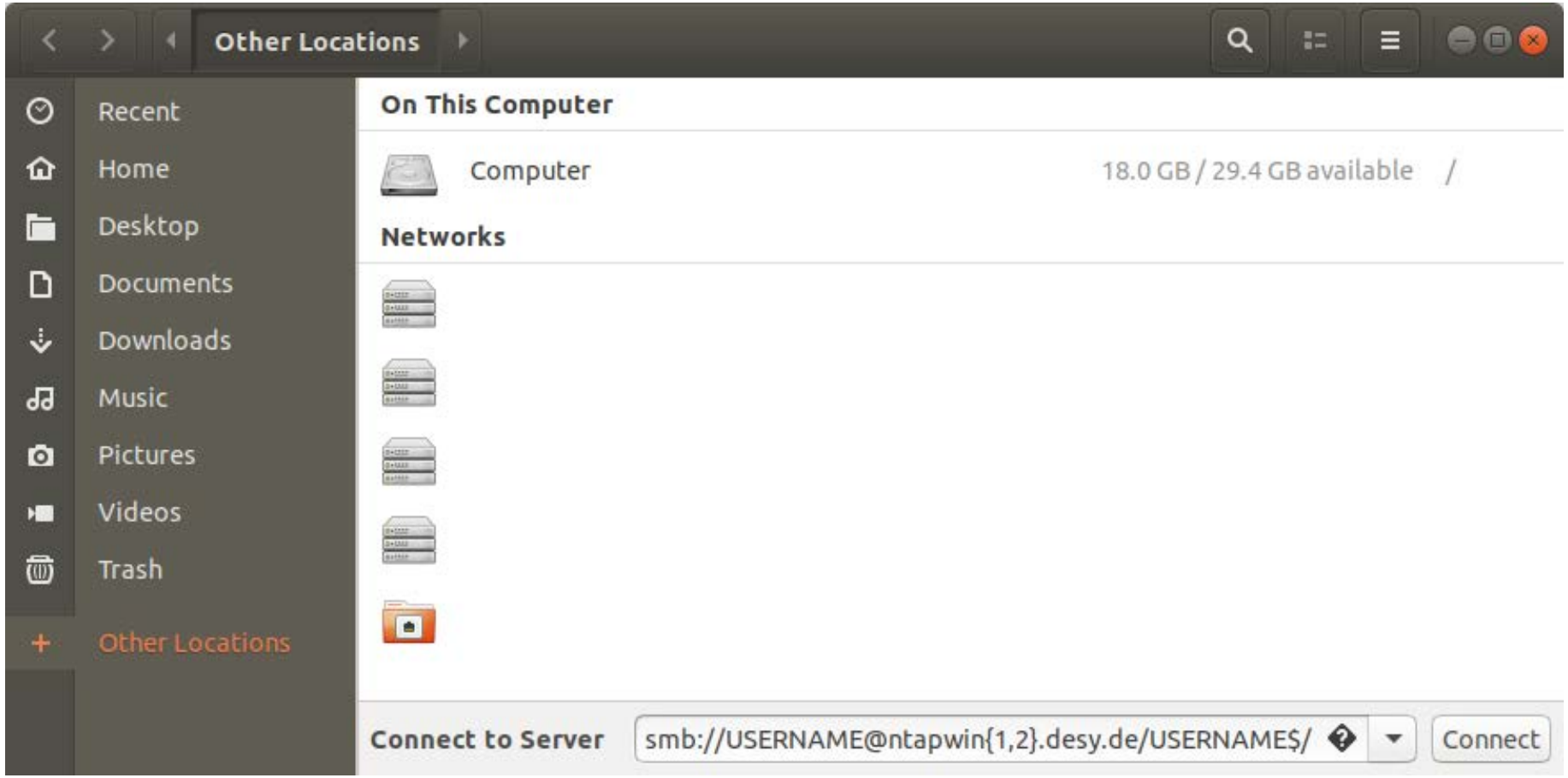
Sync and Share – client





Accessing remote data

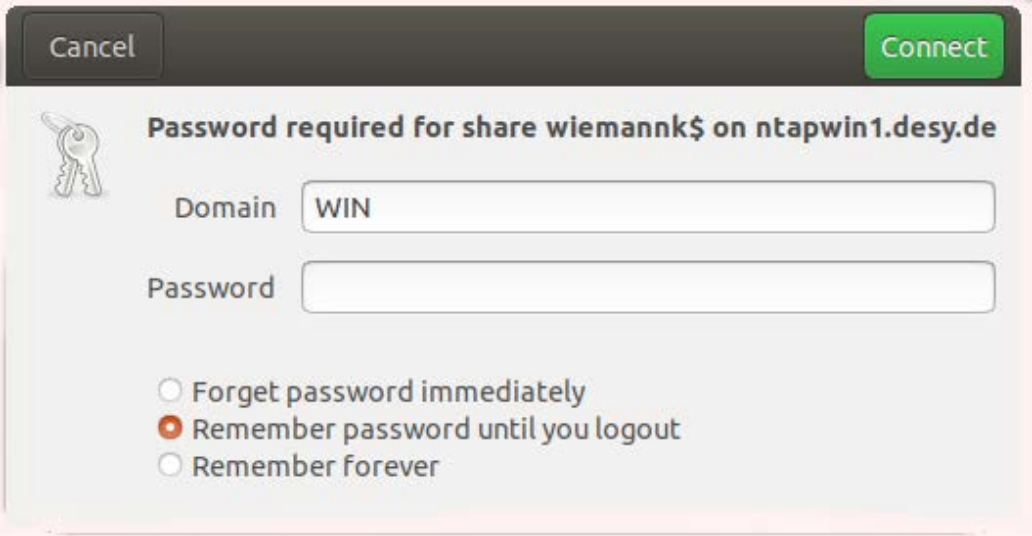
Windows drives

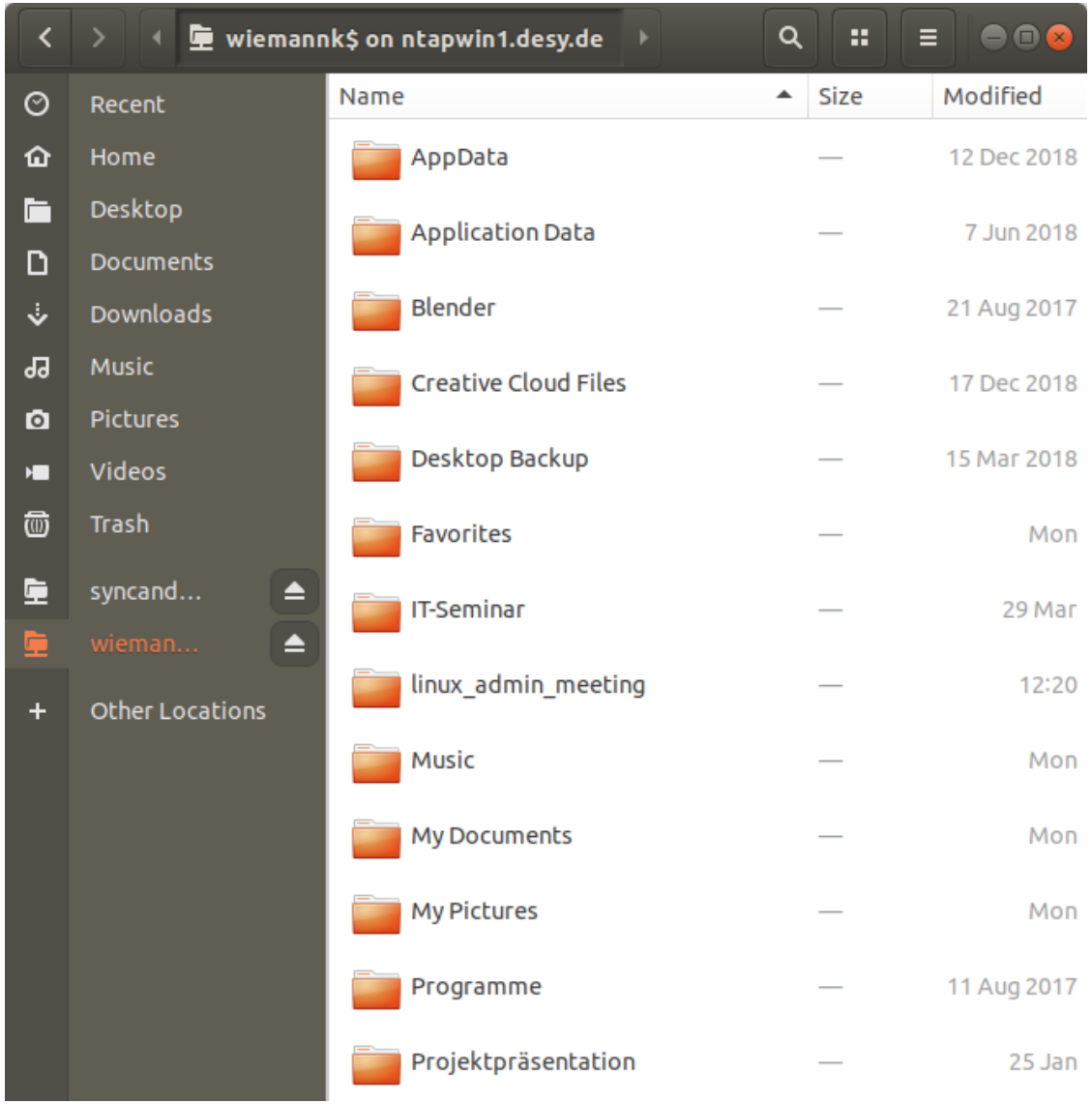



```
~> nautilus smb://USERNAME@ntapwin{1,2}.desy.de/USERNAME\$/
```

Accessing remote data

Windows drives





Accessing remote data

Winterm

What is winterm?

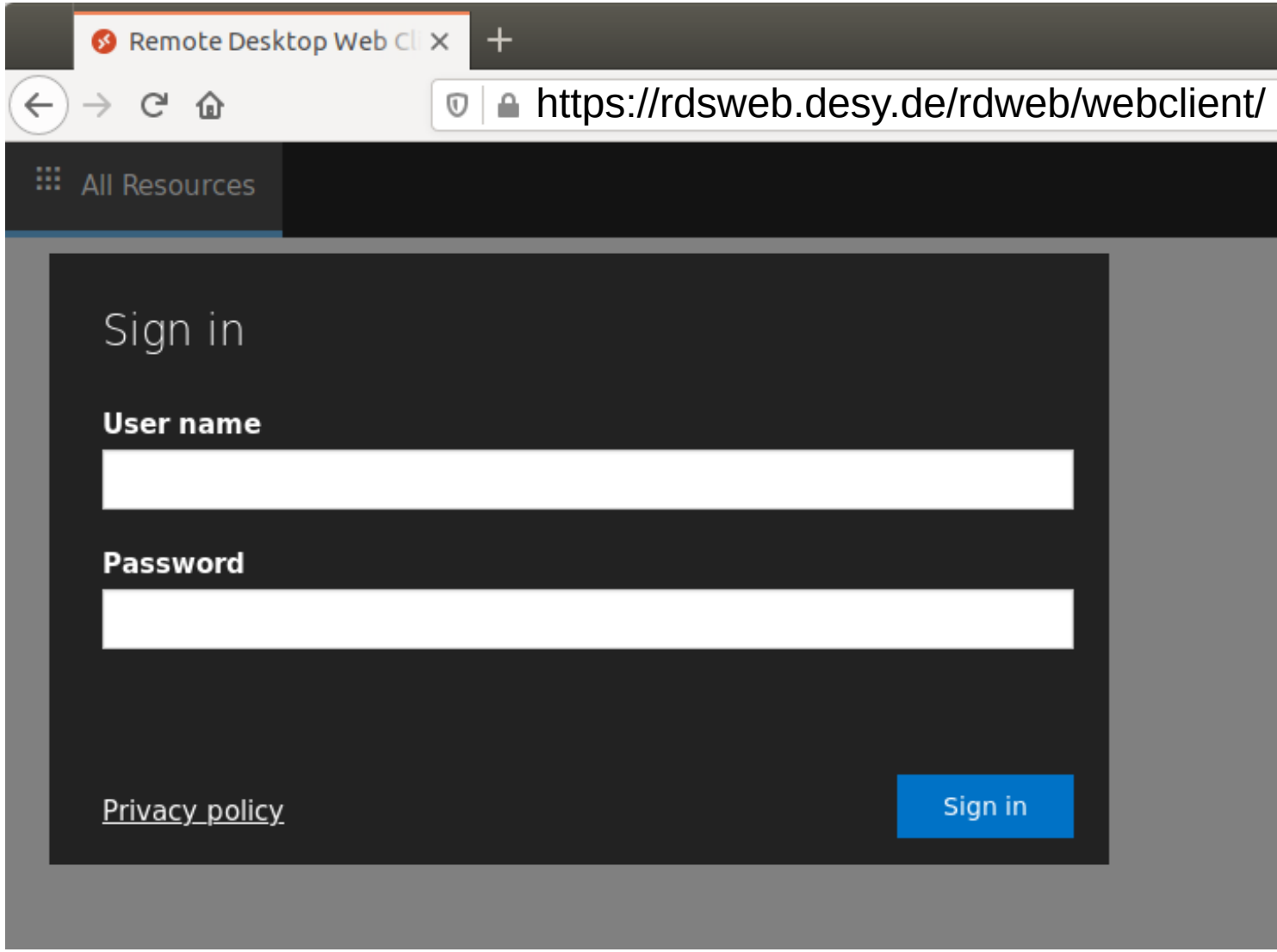
- **Win**dows **term**inal server
- Windows Server 2019
- Microsoft Office 2019, Adobe Acrobat, …

Web access

- Accessible in the DESY-intranet

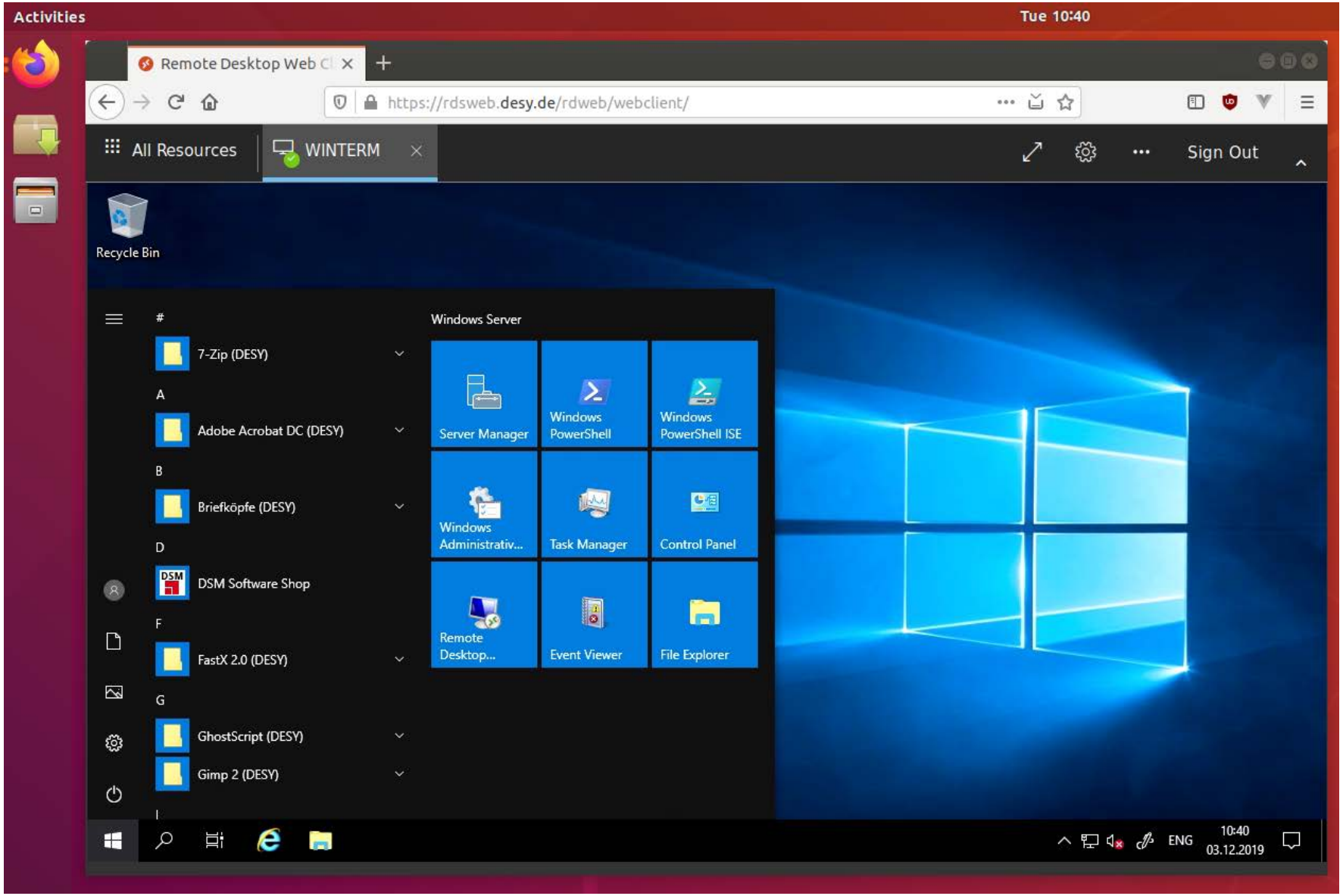
Connecting via Remmina

- Requires development version of xfreerdp



Accessing remote data

Winterm



Future outlook

Future outlook

Ubuntu 20.04 – Focal Fossa

- Release: 23rd April, 2020

Changes

- ZFS as root file system
- No Python 2 – End of Life: 31st December, 2019
- Better GNOME shell performance
- GNOME 3.36
- Linux Kernel 5.5

After introduction

- We will try to offer a “green desktop” on 20.04 as soon as possible
- 20.04 then standard, with 18.04 available on request for some month (probably until 1st October 2020, and following hardware support)

Thank you

Do you have any questions?

Contact

DESY. Deutsches
Elektronen-Synchrotron

www.desy.de

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Sources

Images

- https://www.pexels.com/photo/turned-on-street-lights-at-night-3201189/
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- https://assets.ubuntu.com/v1/9fbc8a44-circle-of-friends-web.zip
- https://worldvectorlogo.com/de/logo/puppet-1
- https://www.docker.com/sites/default/files/d8/2019-07/Moby-logo.png
- https://github.com/theforeman/foreman-graphics/blob/master/logo/foreman_large.png

Sources

Information

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- https://it.desy.de/services/uco/documentation/win_network_drives_smb/index_eng.html
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