Linux desktops at DESY

Linux Admin Meeting

Kai Wiemann Hamburg, 10th December 2019

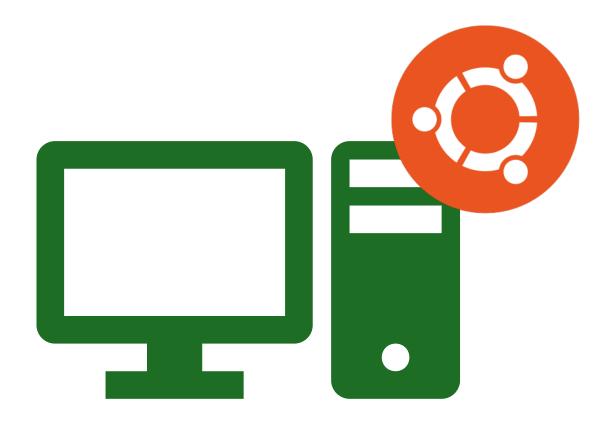




Agenda

Linux desktops at DESY

- 01 Desktop concept
- **02** Developments to meet user requests
- 02 Accessing remote data
- 04 Future outlook



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

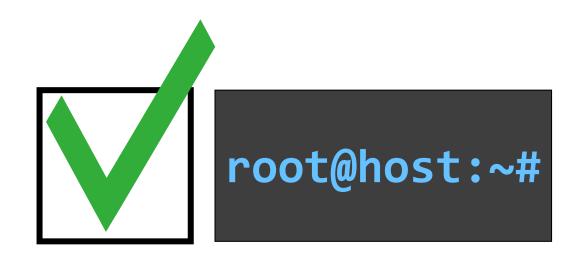
Yellow desktop

- 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

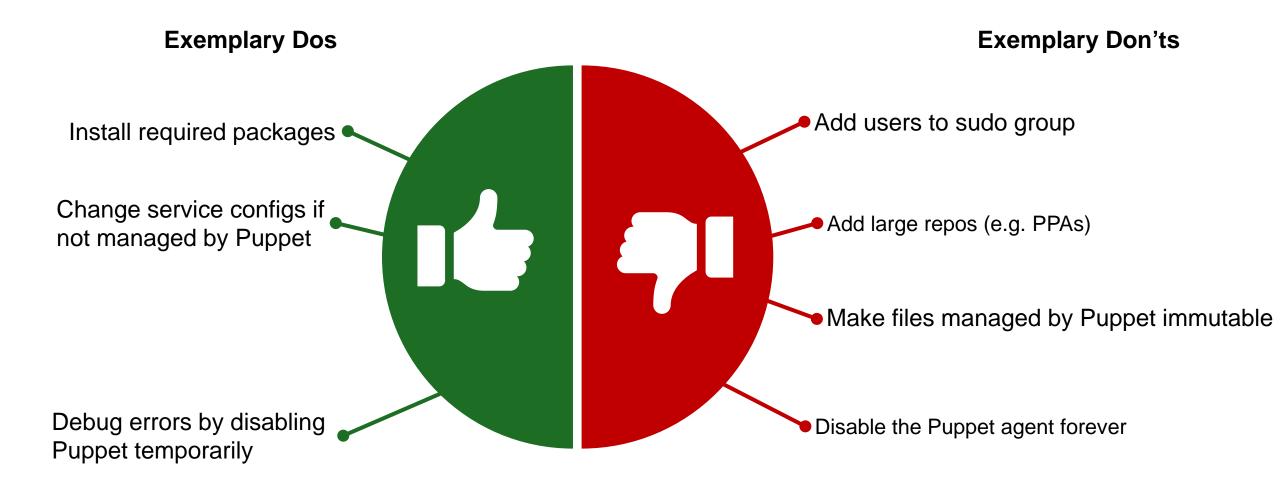


No user root access, but group admin root access

- 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 :-)

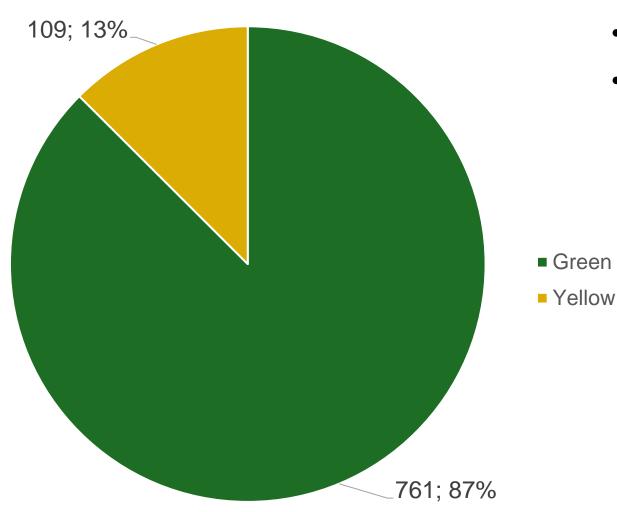


Using root access as a group admin



Green desktop concept

Statistics



Distribution of yellow and green desktops

Why use yellow desktops instead of green ones?

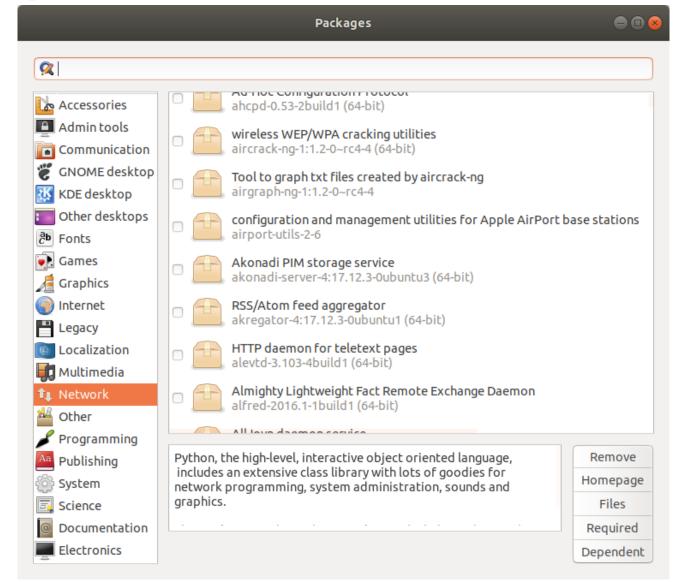
- Installing custom software
- Configuring, accessing custom hardware

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 <u>unix@desy.de</u>

→ Package will be added to the DESYrepositories if possible



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

٩	Authenticate 🗙						
S	Authentication is needed to run `/bin/ bash' as the super user						
U U	An application is attempting to perform an action that requires privileges. Authentication as the super user is required to perform this action.						
	Password for root:						
⊽ <u>D</u> etails							
Command:	/bin/bash						
Run As:	Super User (root)						
Action:	org.freedesktop.policykit.exec						
Vendor:	The PolicyKit Project						
	<u>Cancel</u> <u>Authenticate</u>						

/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;...

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

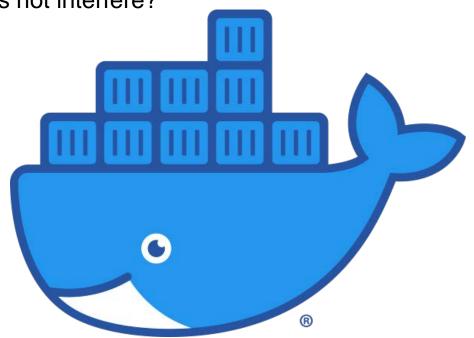
- /home is local
- Working as root: Take data privacy into account
- CVMFS possible on green desktops

/dev/nvme0n1p7 178.37 GiB						
Partition	File System	Mount Point	Size	Used	Unused	Flags
/dev/nvme0n1p1	🔍 📕 fat32	/boot/efi	512.00 MiB	7.22 MiB	504.78 MiB	boot, esp
/dev/nvme0n1p2		/	27.94 GiB	10.17 GiB	17.77 GiB	
/dev/nvme0n1p3	🔍 📕 linux-swap		7.45 GiB	0.00 B	7.45 GiB	
/dev/nvme0n1p4	💫 📕 ext4	/tmp	9.31 GiB	250.24 MiB	9.07 GiB	
/dev/nvme0n1p5	🗟 🗾 ext4	/var/cache	7.45 GiB	323.04 MiB	7.13 GiB	
/dev/nvme0n1p6	💫 🔜 ext4	/var	7.45 GiB	1.24 GiB	6.21 GiB	
/dev/nvme0n1p7	💫 🔜 ext4	/home	178.37 GiB	59.16 GiB	119.21 GiB	
/dev/nvme0n1p7 ⁽	a ext4	/home	178.37 GiB	59.16 GiB	119.21 GiB	

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 OSlevel virtualization
- Multiple isolated user space instances (containers)
- More lightweight than virtual machines

DESY-specifics

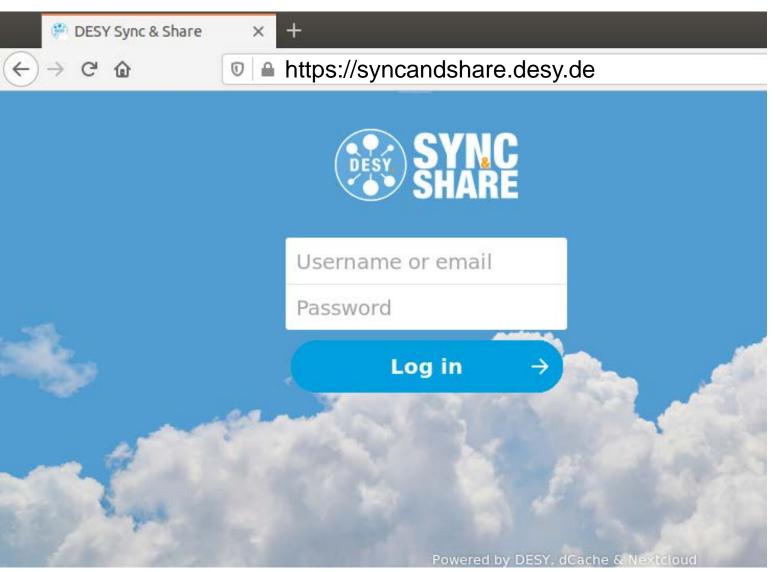
- Authorization plugin on green desktops
- Blocks options which reduce isolation levels

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

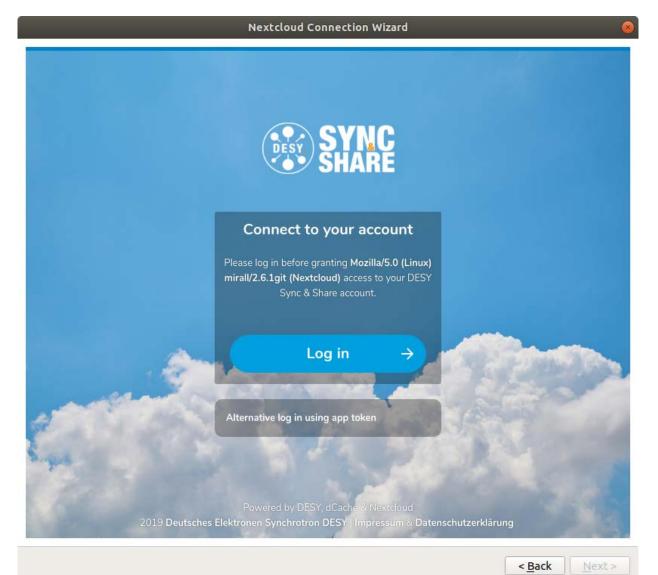
Sync and Share

What is Sync and Share?

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



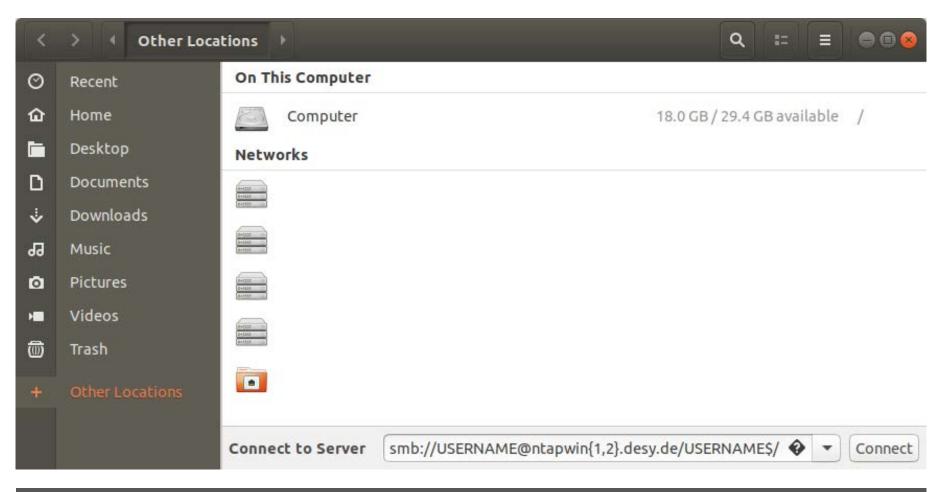
	Nextcloud Connection Wizard	8
Connect to Nextcloud Setup Nextcloud server		000
< Screensha	aring, online meetings & web conferences	>
Server Address https://syn	candshare.desy.de	
	Register with a provider Host your own server	
		<u>N</u> ext >



Nextcloud Connection Wizard						
Connect to Nextcloud Setup local folder options						
Server	 Sync everything from server (43 GB) Ask for confirmation before synchromical synchr	ni <u>z</u> ing folders larger than 5	00			
Local Folder	/home/username/nextcloud Free space: 111 GB					
		Skip folders configuration	< <u>B</u> ack Connect			

Nextcloud	⊗	💊 🔩 🖱 👻
surname, name syncandsdesy.de	General Network	Open Nextcloud in browser
 Connected to <u>https://syncandshare.desy.de</u> as surname, name. 43 GB in use 	Account -	Managed Folders: Open folder 'nextcloud'
 Nextcloud Synchronized with local folder (12/3/19 3:47 PM) nextcloud Add Folder Sync Connection 		Up to date Recent Changes Apps Settings Help Pause synchronization Quit Nextcloud

Windows drives



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

Windows drives

Cancel			Connect	>	토 wiemann	k\$ on ntapwin1.desy.de 🕨	٩		
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D	omain	WIN	F	Desktop)	Application Data		_	7 Jun 2018
Pas	sword			Docume					21 Aug 2017
			÷	Downloa	ads	Blender			21 Aug 2017
		assword immediately	- -	Music		Creative Cloud Files		_	17 Dec 2018
		eer password until you logout eer forever	۵ •	Pictures Videos		Desktop Backup		_	15 Mar 2018
				Trash		Favorites		_	Mon
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			+	Other Lo	ocations	inux_admin_meeting		_	12:20
			_			Music		_	Mon
			_			My Documents		_	Mon
			_			My Pictures		_	Mon
						Programme		_	11 Aug 2017
						Projektpräsentation		_	25 Jan

Winterm

What is winterm?

- Windows terminal server
- Windows Server 2019
- Microsoft Office 2019, Adobe Acrobat, ...

Web access

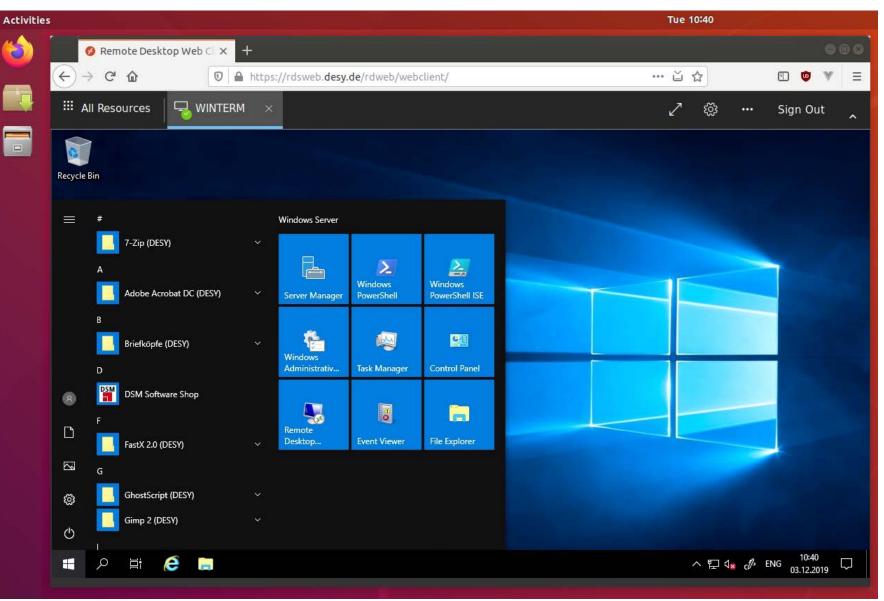
• Accessible in the DESY-intranet

Connecting via Remmina

• Requires development version of xfreerdp

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E	$) ightarrow$ C" $oldsymbol{ ilde{D}}$	💿 🔺 https://rdsweb.desy.de/rdweb/web	oclient/
	All Resources		
I	Sign in		
l	User name		
l	Password		
	<u>Privacy policy</u>	<u>y</u> Sign in	

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)





Do you have any questions?

Contact

DESY. Deutsches Elektronen-Synchrotron Kai Wiemann Information technology (IT) <u>kai.wiemann@desy.de</u> 8998 / 2351

www.desy.de

Sources

Images

- <u>https://www.pexels.com/photo/turned-on-street-lights-at-night-3201189/</u>
- <u>https://www.freedesktop.org/software/polkit/docs/0.105/pkexec-bash.png</u>
- <u>https://assets.ubuntu.com/v1/9fbc8a44-circle-of-friends-web.zip</u>
- <u>https://worldvectorlogo.com/de/logo/puppet-1</u>
- https://www.docker.com/sites/default/files/d8/2019-07/Moby-logo.png
- <u>https://github.com/theforeman/foreman-graphics/blob/master/logo/foreman_large.png</u>

Sources

Information

- <u>https://it-puppet-web.desy.de/puppet/documentation/wikis/Foreman-Parameters</u>
- <u>https://it.desy.de/services/uco/documentation/win_network_drives_smb/index_eng.html</u>
- <u>https://it.desy.de/services/storage_services/desy_sync_share/index_eng.html</u>
- <u>https://wiki.ubuntu.com/FocalFossa/ReleaseSchedule</u>
- <u>https://www.pro-linux.de/news/1/27546/canonical-beschleunigt-gnome-shell.html</u>
- https://www.pro-linux.de/news/1/27464/ubuntu-1910-mit-ein-wenig-zfs.html
- <u>https://www.debugpoint.com/2019/10/ubuntu-20-04-lts-focal-fossa/</u>