

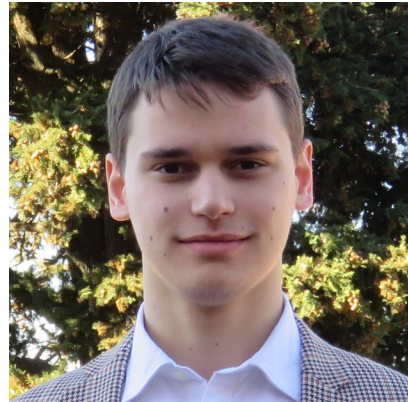
Remotely accessing files in a distributed LDAP+Samba-based infrastructure *"Cloud" in a new manner*



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\$ whoami

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- Developer / SysAdmin @ continuity.space (Italy)
- Member of TDF
- President of the Linux User Group of Bolzano
- Developer of the FUSS project





There is NO CLOUD, just other people's computers

GDPR

Privacy shield

Data protection



Remote Access

Remotely accessing files in a distributed LDAP+Samba-based infrastructure
March 23, 2020

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Remotely accessing files in a distributed LDAP+Samba-based infrastructure

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ABSTRACT

Context. An in-production infrastructure of 64 schools running Debian-based networks with OpenLDAP and Kerberos. Samba is even provided for Windows compatibility. This O.S. is called "FUSS" * and is developed by the Autonomous Province of Bolzano.

What's FUSS?

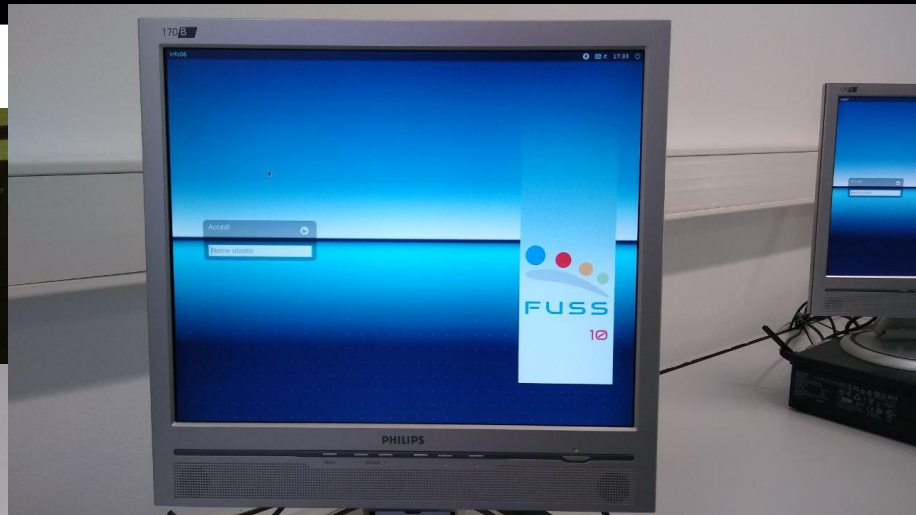
FUSS

stands for

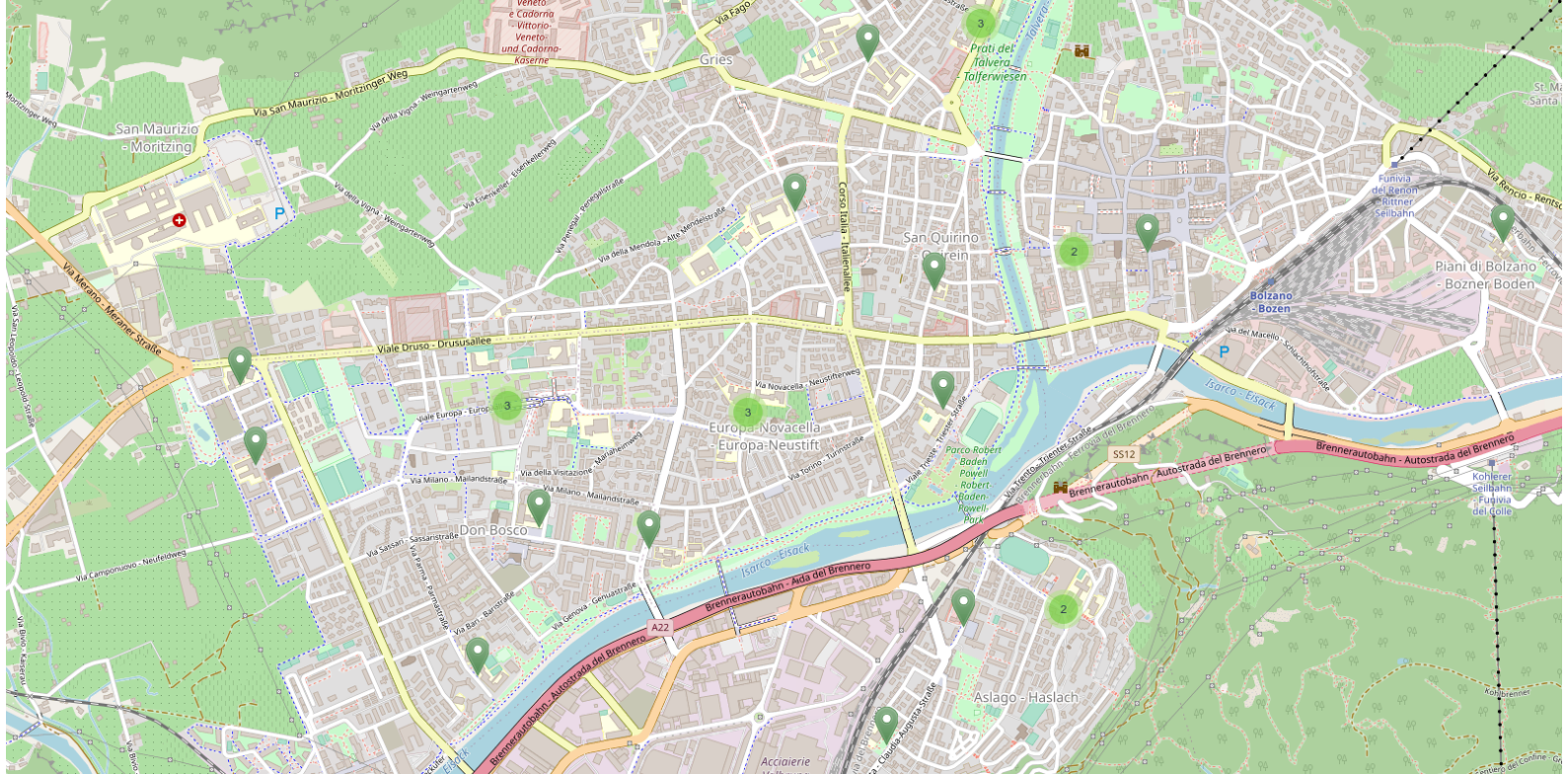
Free Upgrade for a digitally
Sustainable School

What's FUSS?

- Launched in 2005
- Covers 72 schools with 64 servers and 4000 PCs and Laptops
- Both server and client distro
- Selection of didactic software



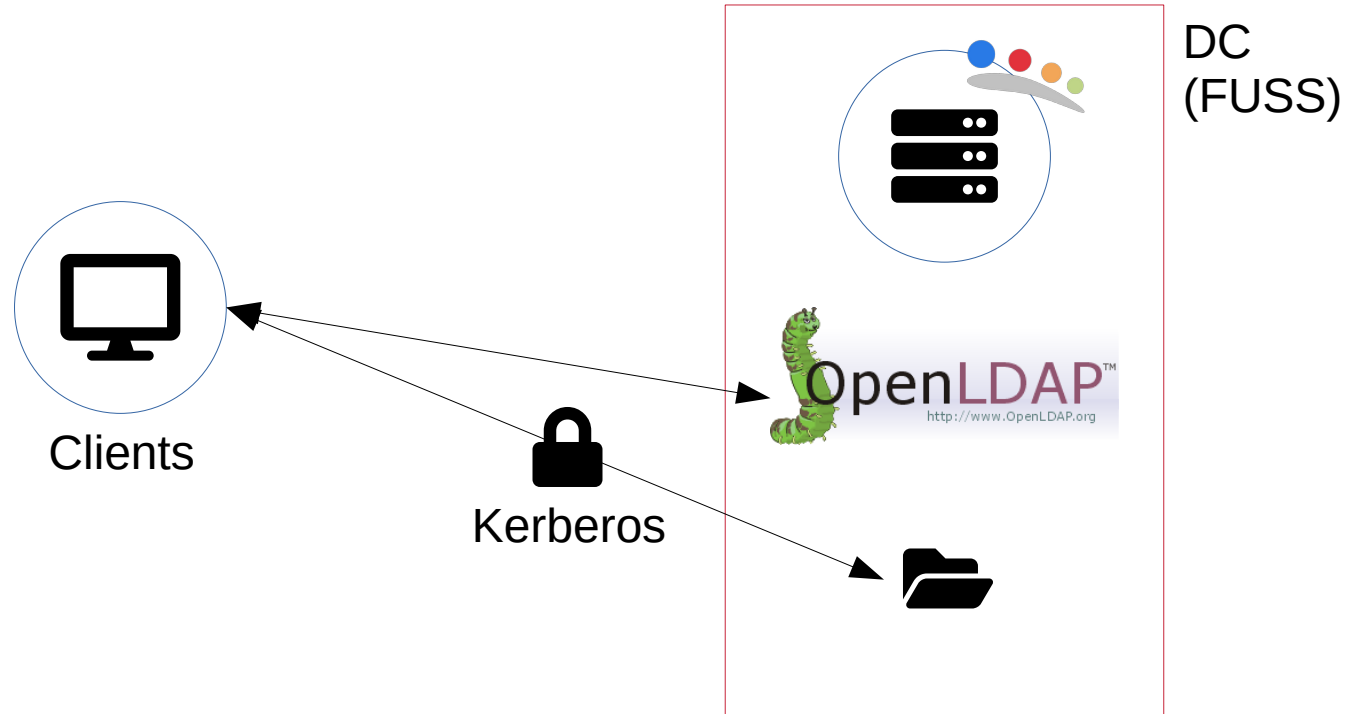
Schools are far



Goal

Make users files available remotely

How a school network works?



What's FUSS Remote Access?



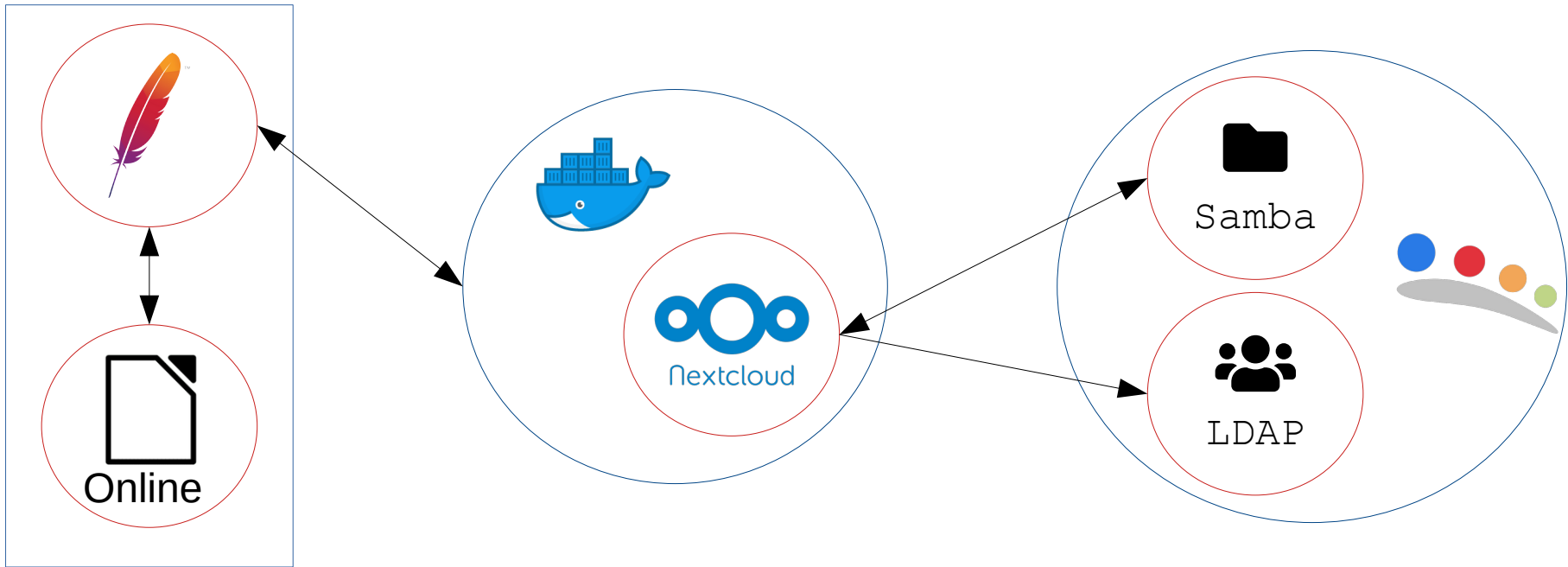
Solution to access your data outside the school network



Online collaboration suite (LOOL)



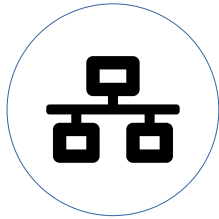
Private cloud



Why this solution?



Data under control (GDPR)

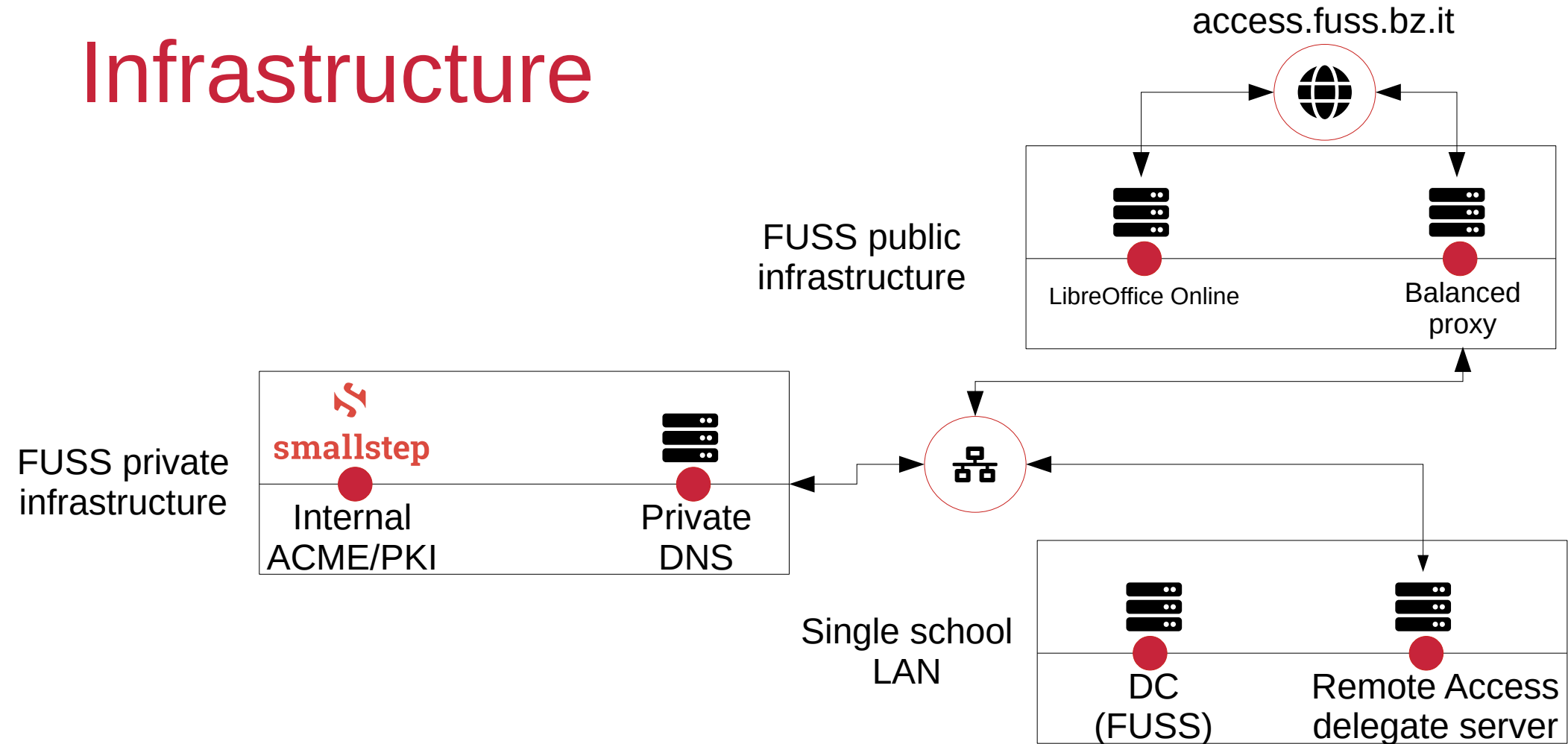


Distributed storage



Same credentials as the school network (SSO)

Infrastructure



Building LibreOffice online

Automating stable compilation

The following script may be used to automatically fetch the latest (supposed) stable version and compile it. You can run it in something like a nightly build. In any case, using ccache is highly suggested to enhance a lot the build times after the first.

```
cd /opt
[ -e online ] || git clone --depth=1 https://git.libreoffice.org/online
cd online
git pull origin master
cd docker
git ls-remote https://git.libreoffice.org/core | cut -f 2 | grep -e '^refs/heads/libreoffice' | tail -1 | rev | cut -d '/' -f 1 | rev > core-branch
git ls-remote https://git.libreoffice.org/online | cut -f 2 | grep -e '^refs/heads/libreoffice' | tail -1 | rev | cut -d '/' -f 1 | rev > online-branch
LIBREOFFICE_BRANCH="$(cat core-branch)" LIBREOFFICE_ONLINE_BRANCH="$(cat online-branch)" DOCKER_HUB_TAG="$(cat online-branch)-$(date +%Y-%m-%d)" NO_DOCKER_PUSH="yes"
ONLINE_EXTRA_BUILD_OPTIONS="--enable-anonymization --with-max-connections=100000 --with-max-documents=100000" ./l10n-docker-nightly.sh
```

https://wiki.documentfoundation.org/Development/LibreOffice_Online

<https://wiki.documentfoundation.org/Development/BuildingOnline>

Pillars: the ACME protocol

“The Automatic Certificate Management Environment (ACME) protocol is a communications protocol for automating interactions between certificate authorities and their users' web servers, allowing the automated deployment of public key infrastructure at very low cost. It was designed by the Internet Security Research Group (ISRG) for their Let's Encrypt service.”

(from Wikipedia)



Pillars: certbot



Automatically enable HTTPS on your website with EFF's Certbot, deploying [Let's Encrypt](#) certificates.

Is the software who implements the ACME protocol

Pillars: the ACME protocol

- The agent says to the server which domains he wants to verify (e.g. `domain.tld`);
- The server returns a token and a path in which he expects this token to be available;
- The agent moves the token in place and the server challenges via HTTP expecting to find the token he gave to the agent;
- If successful, the server signs a CSR uploaded by the agent. The private key is generated on the host and remains on the host.

Pillars: Smallstep

- Toolkit for internal PKI management
- SSH Single-sign-on
- Implementation of ACME server



smallstep

Pillars: Proxmox



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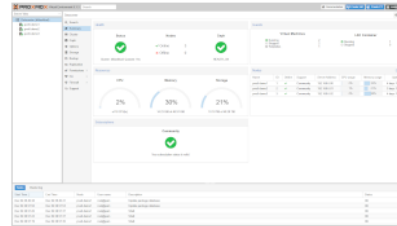
[Home](#) | [Virtualization](#)

Proxmox Virtual Environment

Compute, network, and storage in a single solution

Proxmox VE is an open-source server management platform for your enterprise virtualization. It tightly integrates KVM hypervisor and LXC, software-defined storage, and networking functionality on a single platform. With the integrated web-based user interface you can easily manage VMs and containers, highly available clusters, or the integrated disaster recovery tools with ease.

Enterprise-class features and a 100% software-based focus make Proxmox VE the perfect choice to virtualize your IT infrastructure, optimize existing resources and increase efficiencies with minimal expense. You can easily virtualize even the most demanding Linux and Windows application workloads, and dynamically scale computing and storage as your needs grow ensuring that your data center adjusts for future growth.

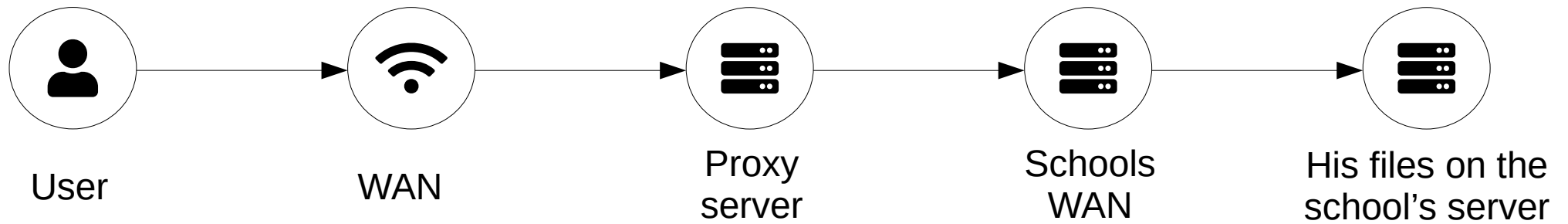


Ready to build an open and future-proof data center with Proxmox VE?

[Get started](#)

[Download](#)

Access path





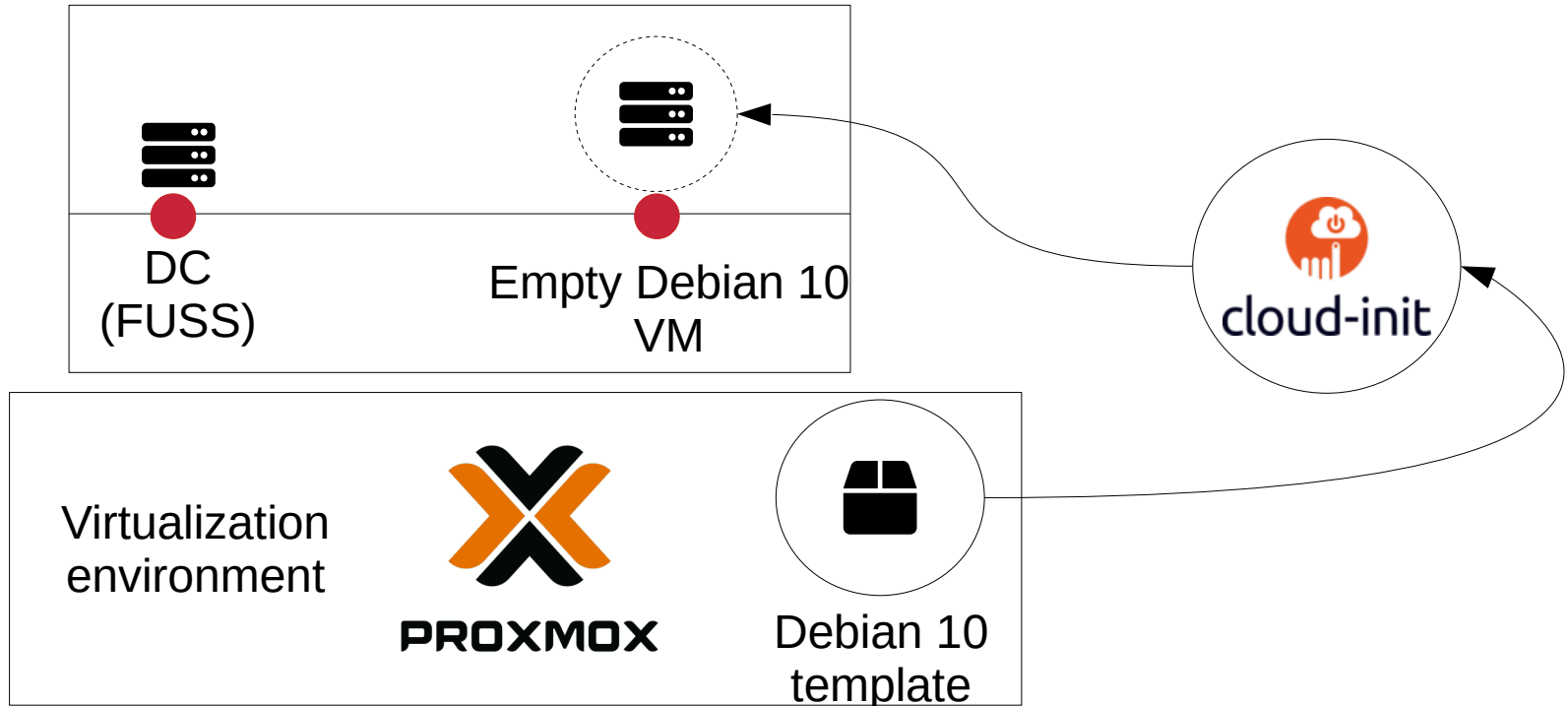
Accedi →

[Hai dimenticato la password?](#)

[Accedi con un dispositivo](#)

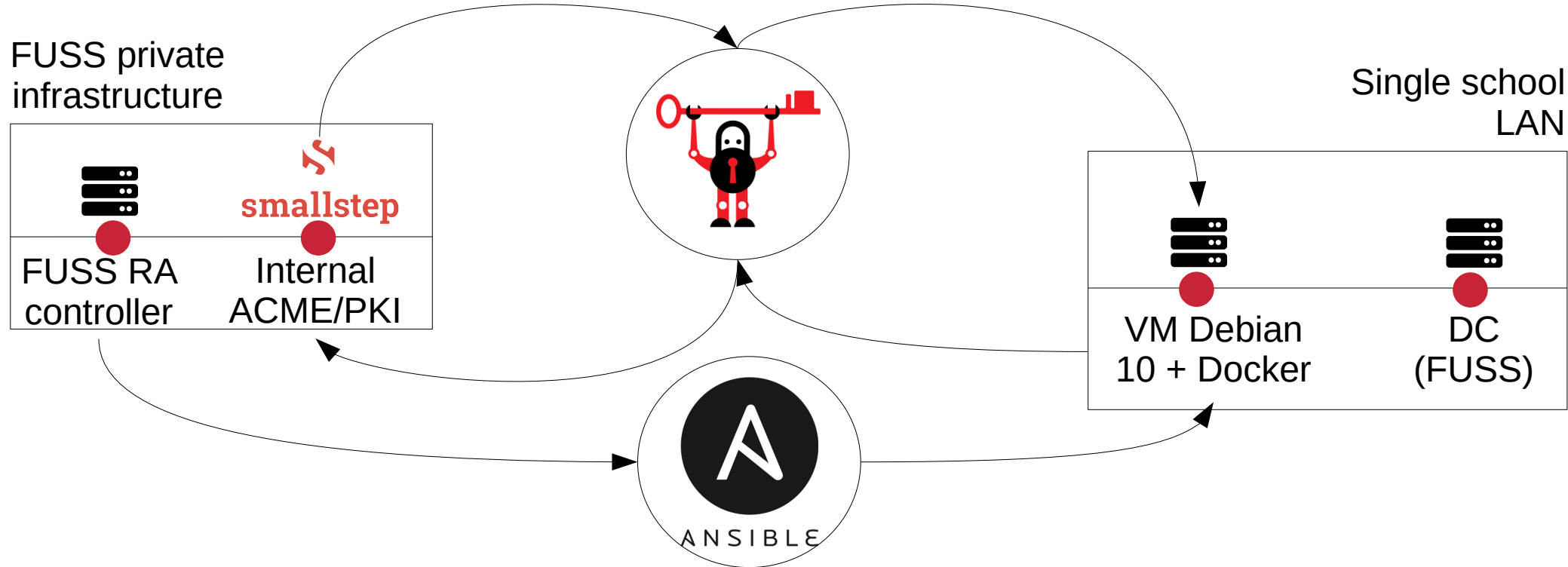
Deploy strategy

1. Creation of the delegate server



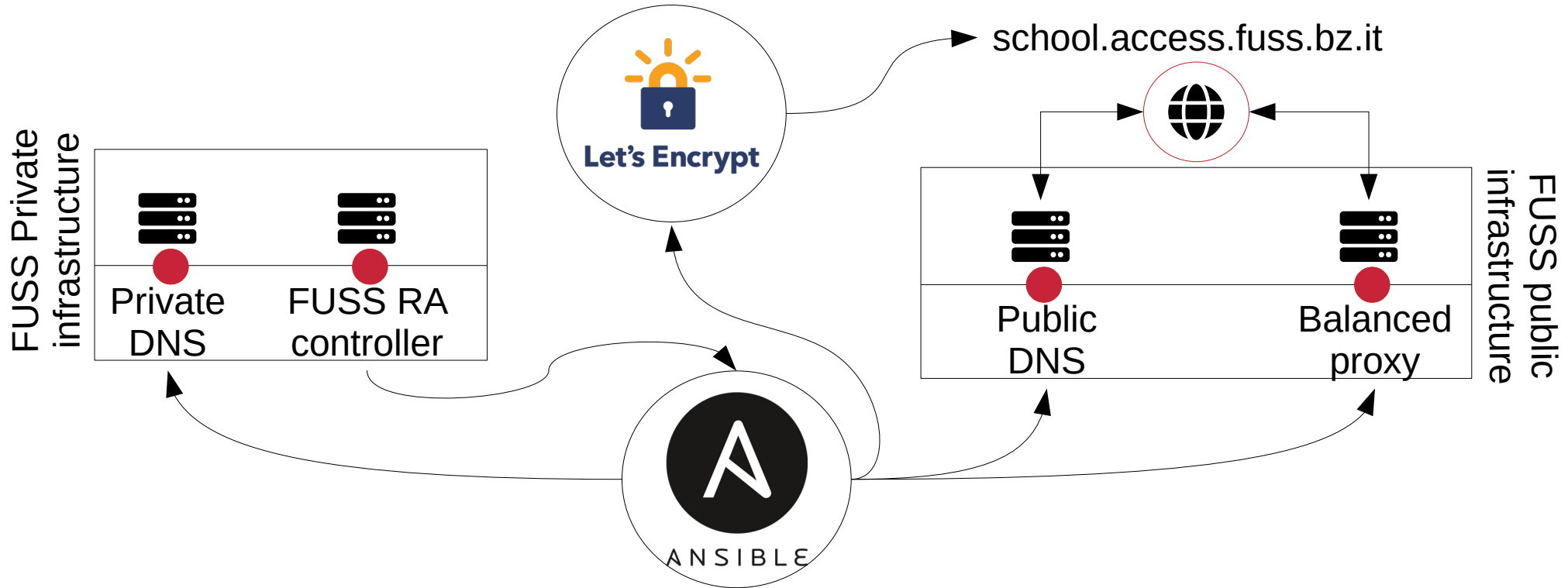
Deploy strategy

2. Delegate server setup




Deploy strategy

3. Orchestration of the central infrastructure



Give me the code!



The screenshot shows a GitLab repository page for 'FUSS Remote Access'. The repository is public and has 49 commits, 1 branch, 0 tags, 307 KB of files, and 307 KB of storage. The repository description is 'How can a FUSS Server serve the homes publicly via Nextcloud?'. The current branch is 'master' and the file path is 'fuss-nc'. There are buttons for 'History', 'Find file', 'Download', and 'Clone'. A commit by Marco Marinello is highlighted, titled 'Apply GDPR link configuration (which @dongilli manually applied on existing installations)'. Below the commit are links for 'README' and 'GNU AGPLV3'. A table lists the repository's files and their last commit details.

FUSS Remote Access  Project ID: 14 ☆ Star 0




🔗 49 Commits 🌿 1 Branch 🏷️ 0 Tags 📁 307 KB Files 🗄️ 307 KB Storage

How can a FUSS Server serve the homes publicly via Nextcloud?

master History Find file Download Clone

 **Apply GDPR link configuration (which @dongilli manually applied on existing installations)** Verified c1324154 
Marco Marinello authored 7 months ago

README GNU AGPLV3

Name	Last commit	Last update
 images	Goals, network setup and vm debootstrap	1 year ago
 nextcloud-fuss	Apply GDPR link configuration (which @dongilli manually applied...	7 months ago
 .gitignore	Docker compose environment generation	1 year ago

- <https://gitlab.fuss.bz.it/fuss-team/fuss-nc>

Want to know more?

Feel free to get in touch with me:

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2020

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