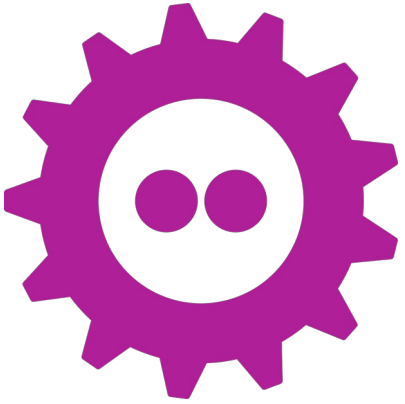


Empowering the school of the future

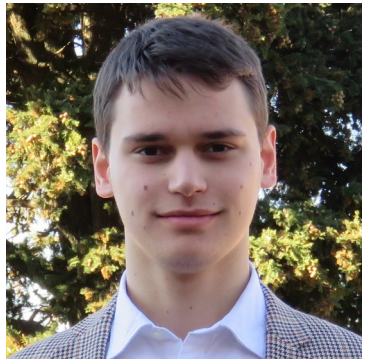
Remotely accessing files in a distributed LDAP and Samba-based infrastructure

Marco Marinello
Paolo Dongilli

FUSS

$ whoweare

Paolo Dongilli



Marco Marinello

Technical inspector @ Italian School Department / Autonomous Province of Bolzano

FUSS Project Coordinator

Member of TDF

CS Student @ UniBZ

(Freelance) Developer / SysAdmin

Member of TDF

President of the *Linux User Group of Bolzano*

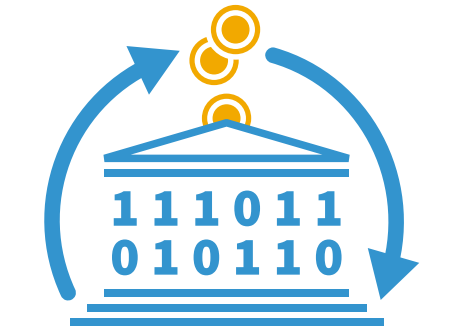
Developer of the FUSS project

FUSS

Free
Upgrade for a digitally
Sustainable
School

FUSS: freedom and transparency

FUSS has created public value ...



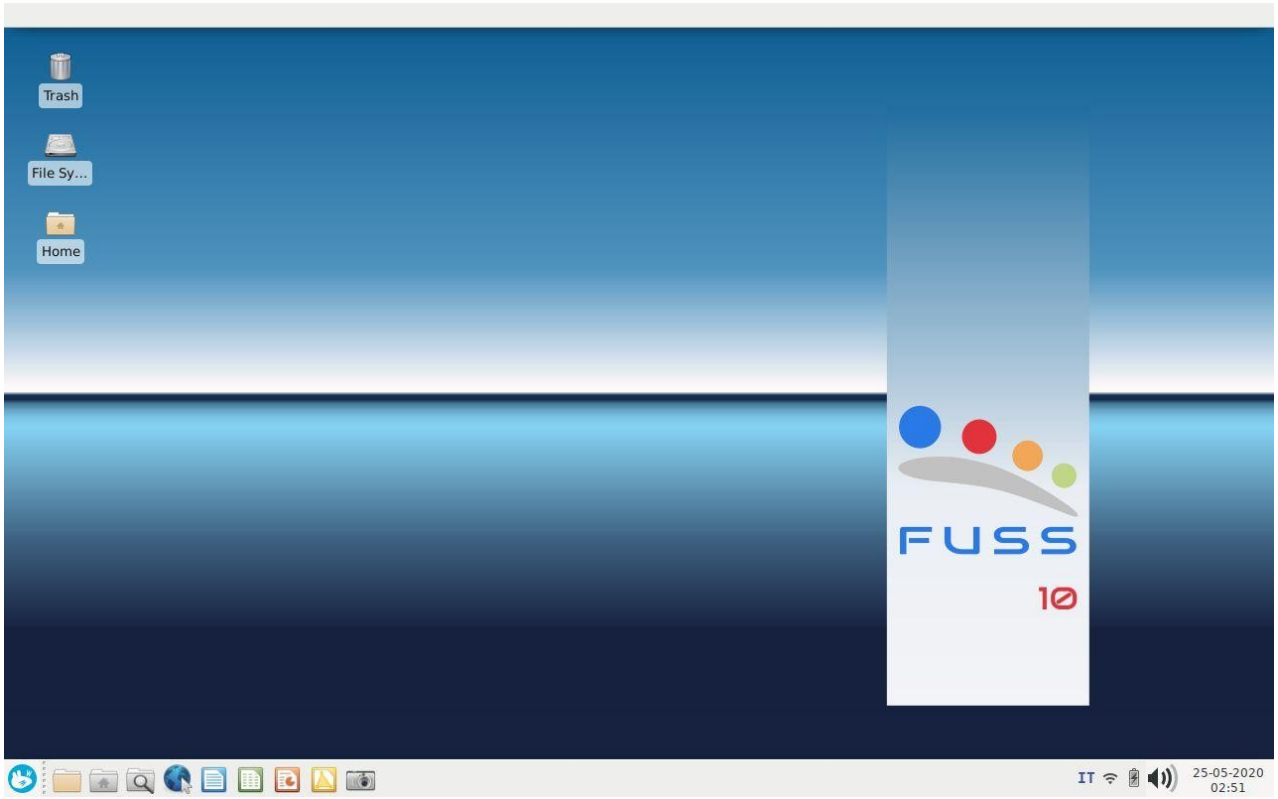
https://publiccode.eu/

… a recognized public value

Digital Skills and Jobs Coalition

South-Tyrolean Network for Sustainability

FUSS 10 (Debian 10 “Buster” + Xfce)



FUSS is used in around 80 schools

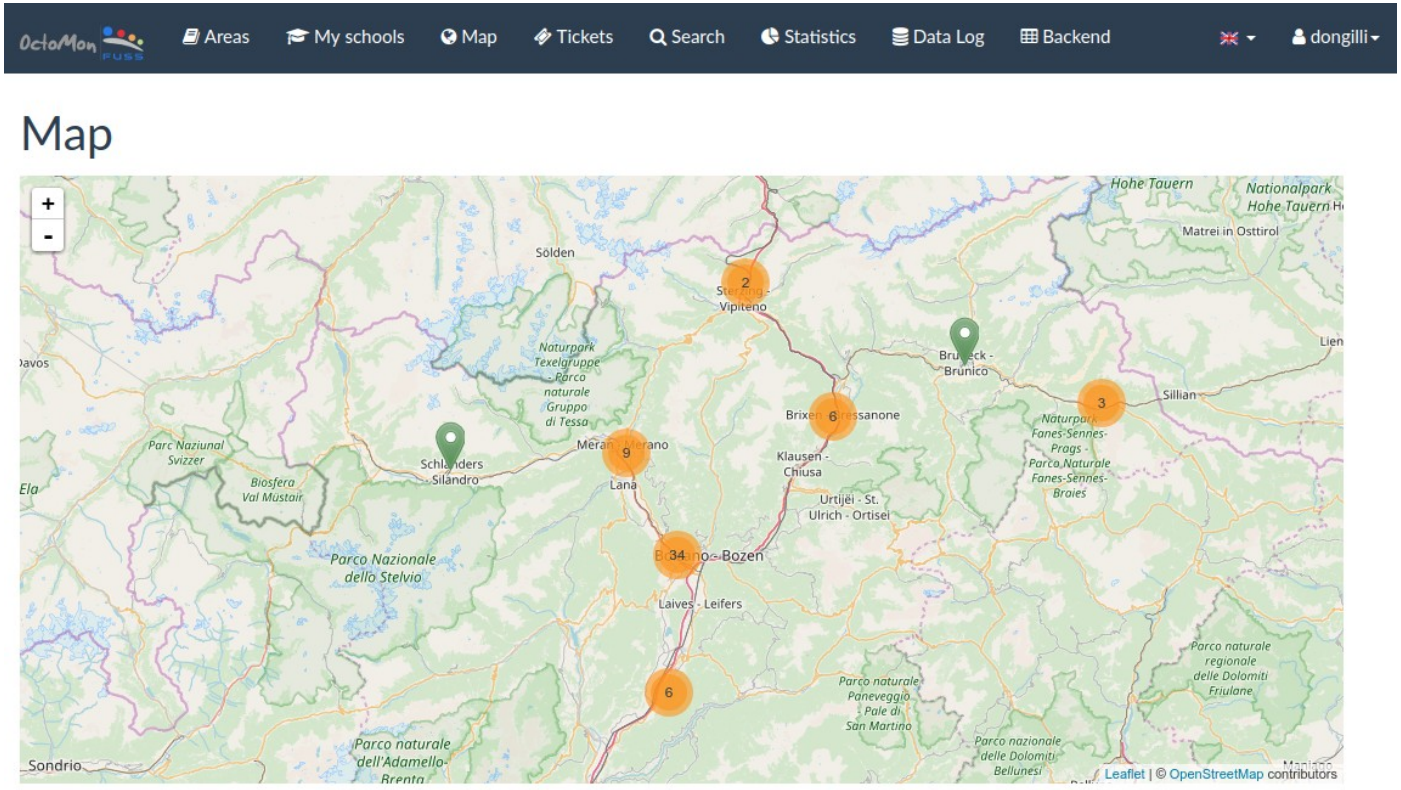
Computer lab, “Ada Negri” High School, Bolzano

4.500 PCs
64 servers

debian
GNU/Linux

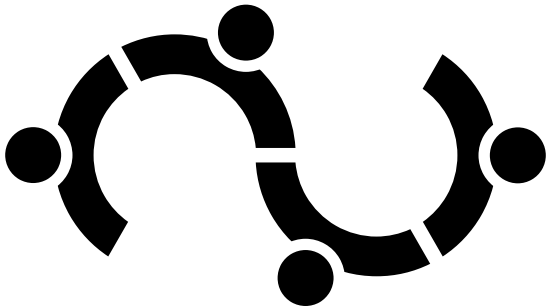
200 desktop
packages installed

Coverage throughout the provincial territory



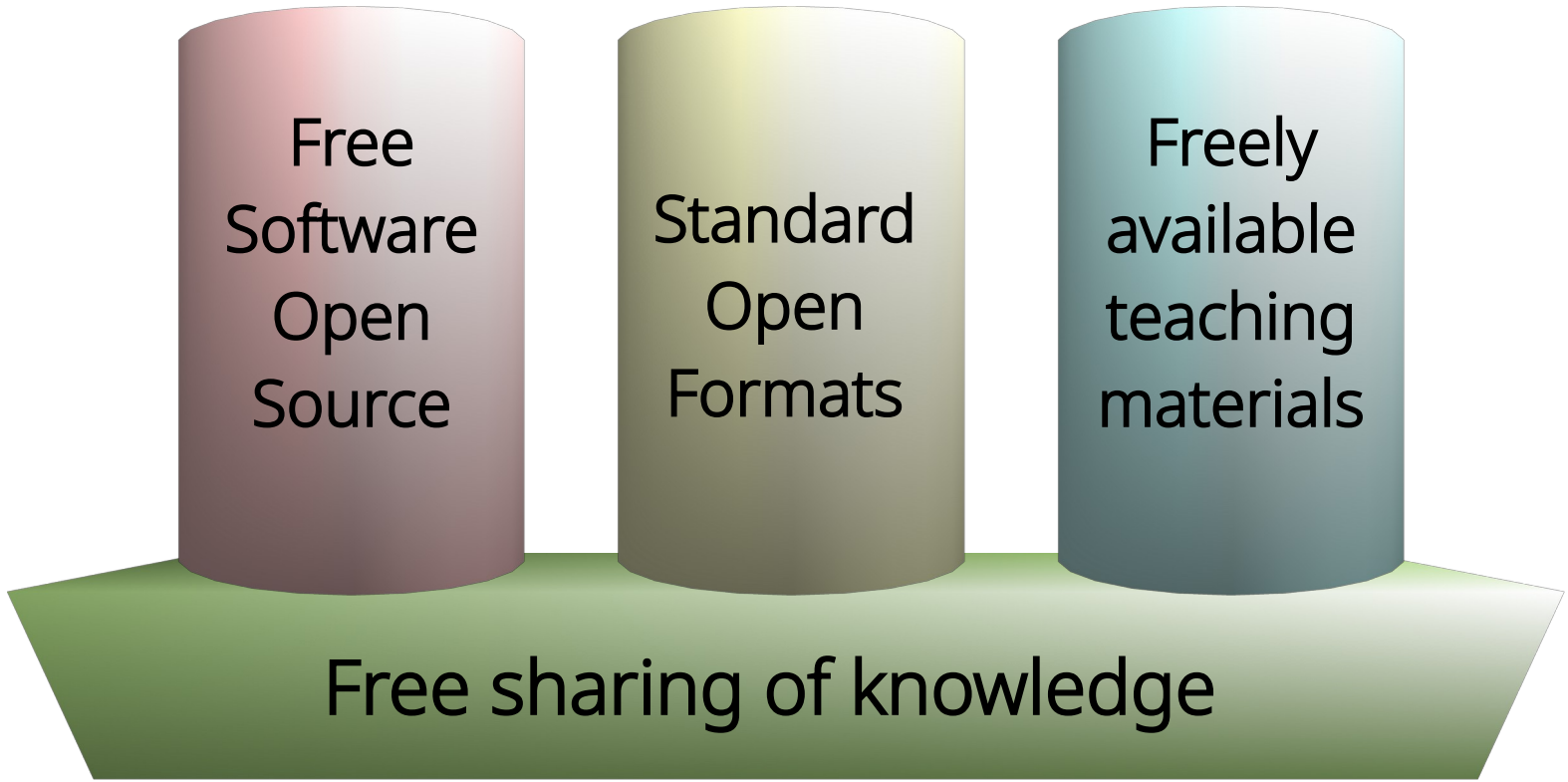
Not only in schools but also at home

Thanks also to the contribution of

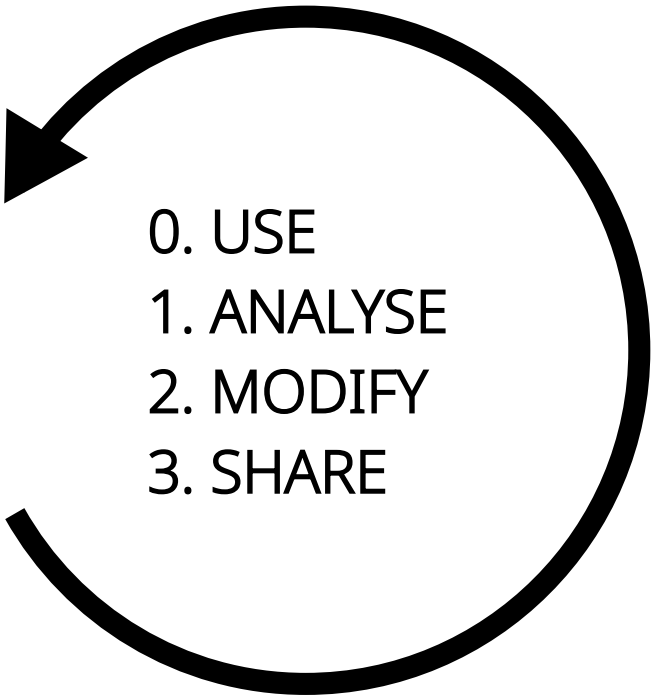


SCHOOLSWAP

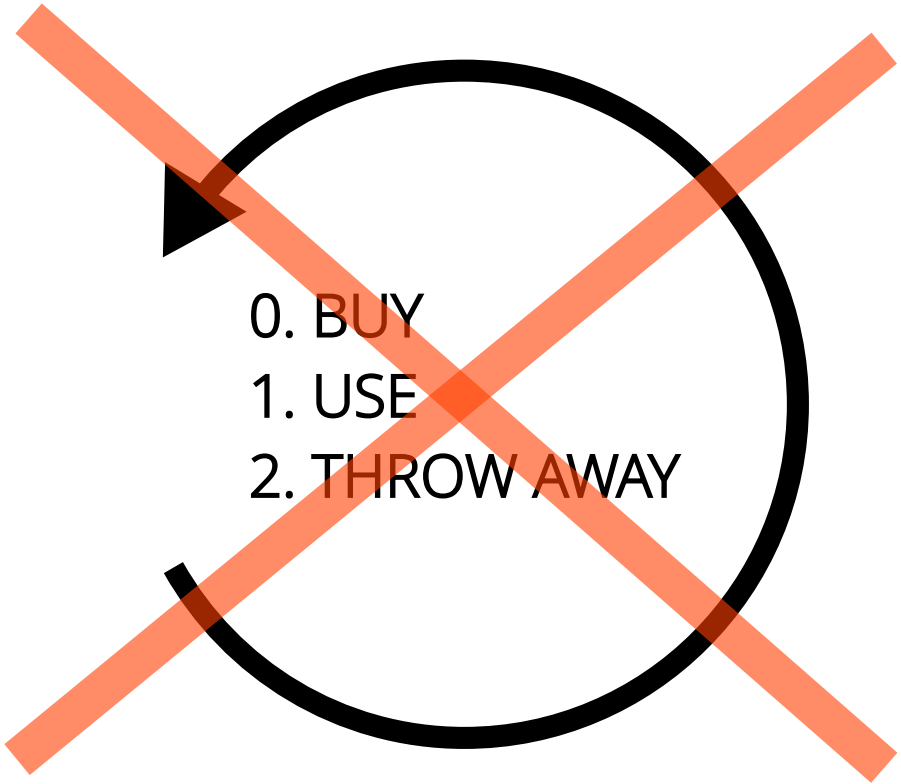
Digital sustainability



Technologies we want in schools

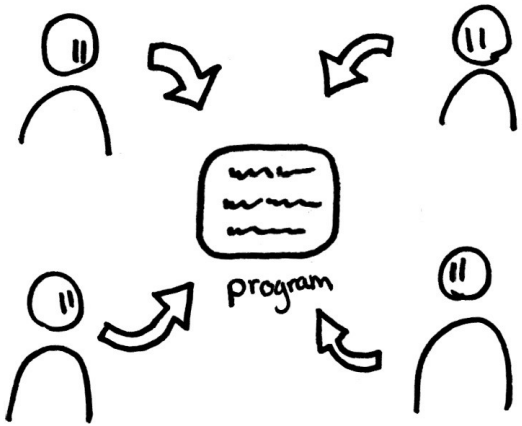


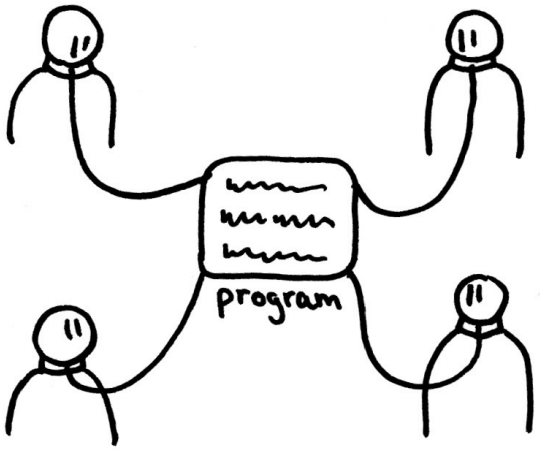
Technologies we DON’T want in schools



Why should we use free technologies?

We want to control our software...





... not to be controlled by it

There is NO CLOUD...

CC-BY-SA 4.0 / Markus Meier / FSFE

Some software we use ...

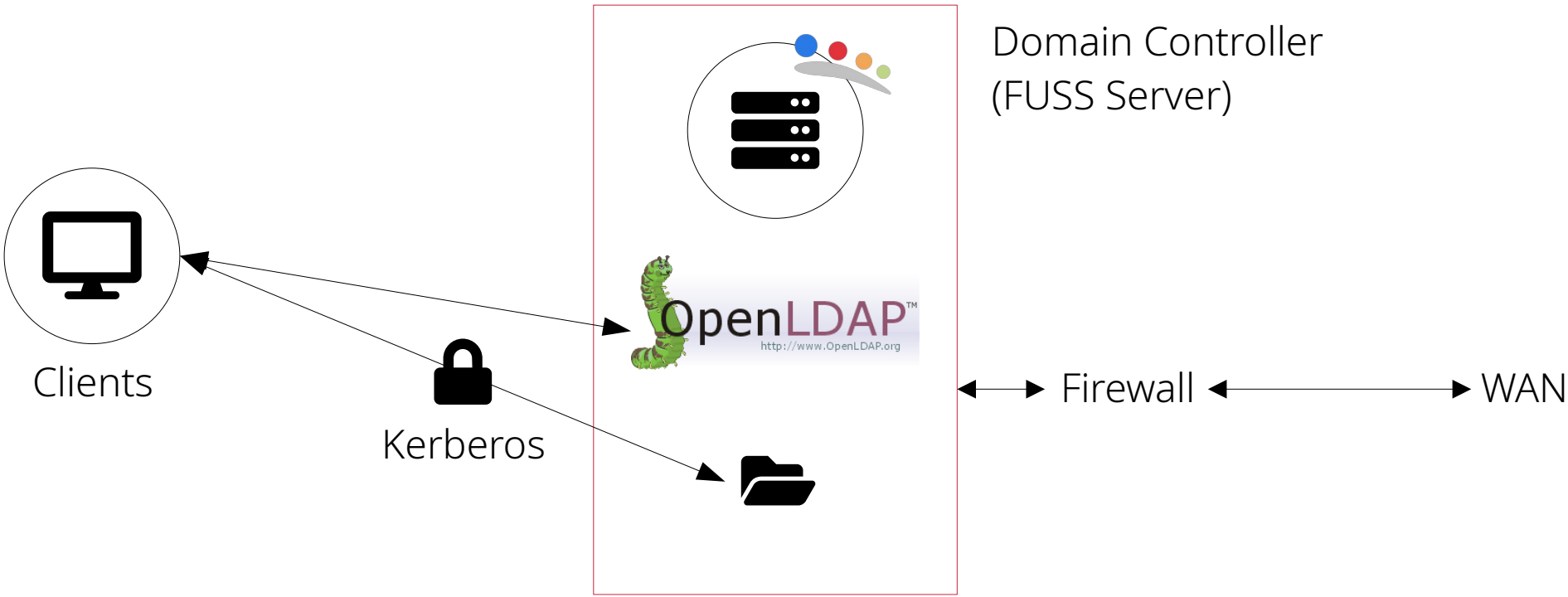
16 years of development

For 16 years, the project has listened carefully to user suggestions, always trying to evolve to become the best possible product.

The missing piece

Make the files available for users remotely

How does a school network work?



State of the art

Remote Access

FUSS Remote Access is based on the latest enterprise- and production-ready software.

State of the art: Nextcloud

Nextcloud is widely deployed by public administrations, enterprises, small companies and private users. It has a very large community, it is shipped with Docker and natively supports external storages and LDAP authentication which was, for this project, an essential feature.

State of the art: Online collaboration

The choice in the field of online document collaboration in terms of on-premise solutions is quite limited. LibreOffice Online is one of the possible solutions.

State of the art: Internal PKI – ACME

Certbot as ACME client, Let's Encrypt for the certificates of the public part and Smallstep as internal PKI ACME server.

What is FUSS Remote Access?

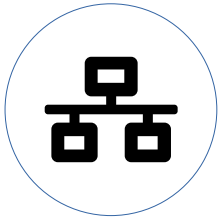
Private cloud
(Autonomous Province Bolzano)

Online collaboration suite

Solution for accessing your own data outside the school network

Why this solution?

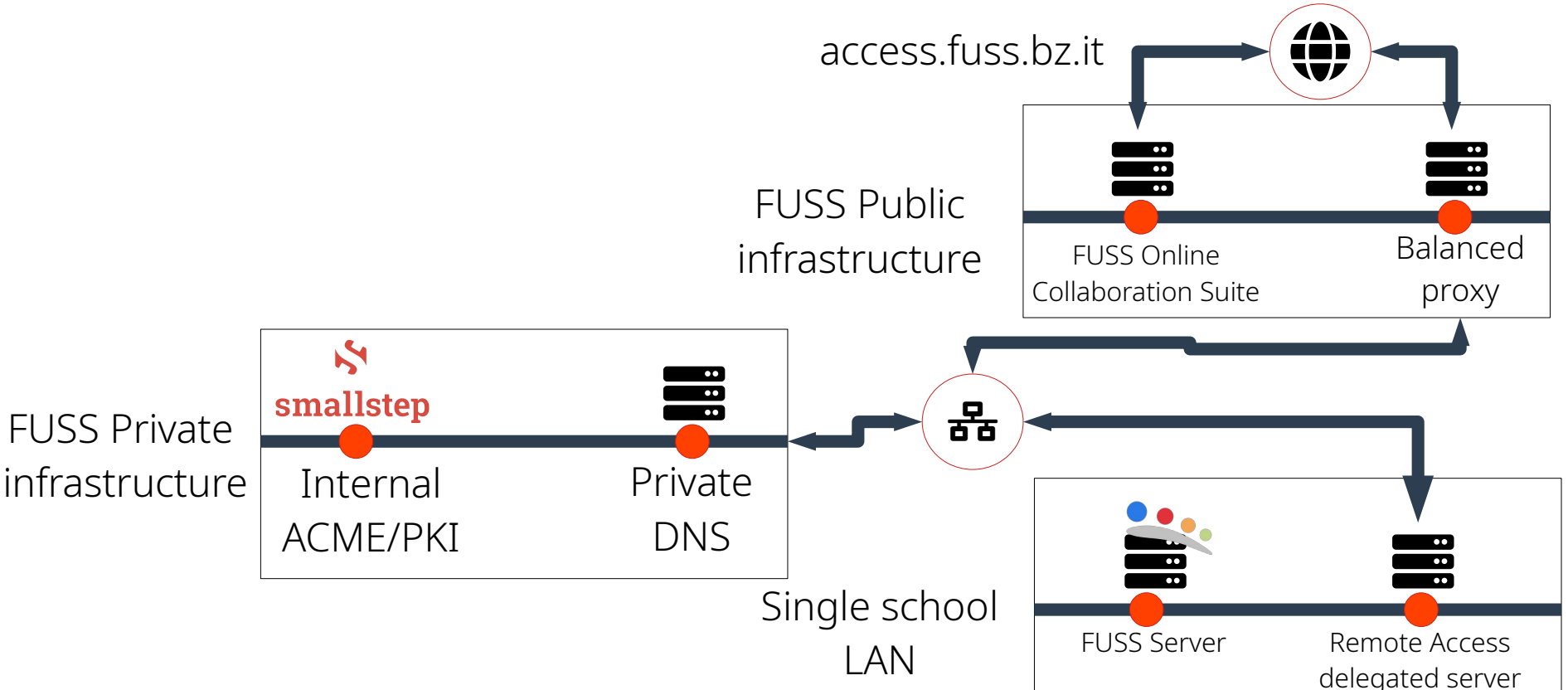
Data under control (GDPR)



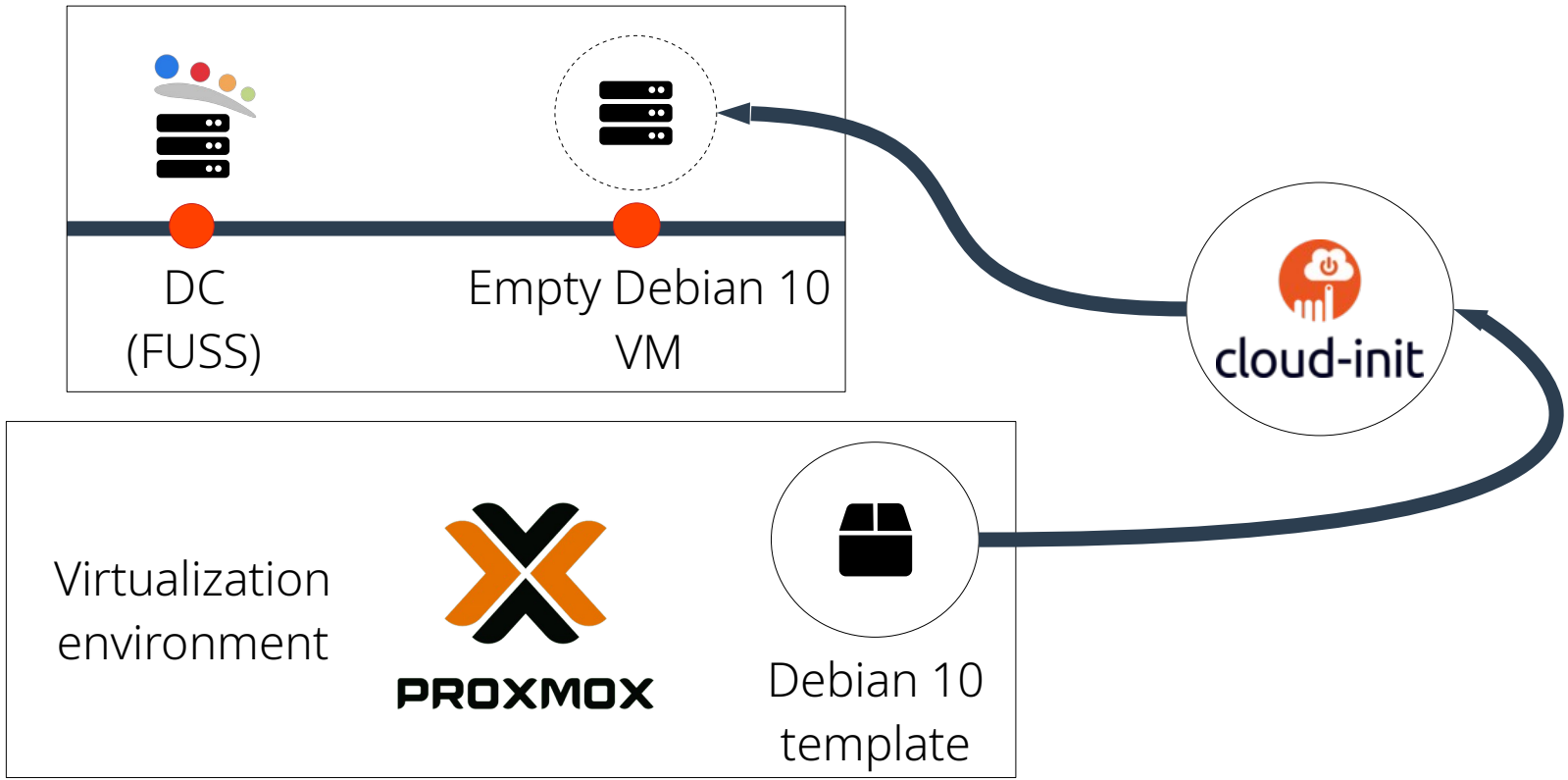
Distributed storage (deduplication)

Same credentials as the school network

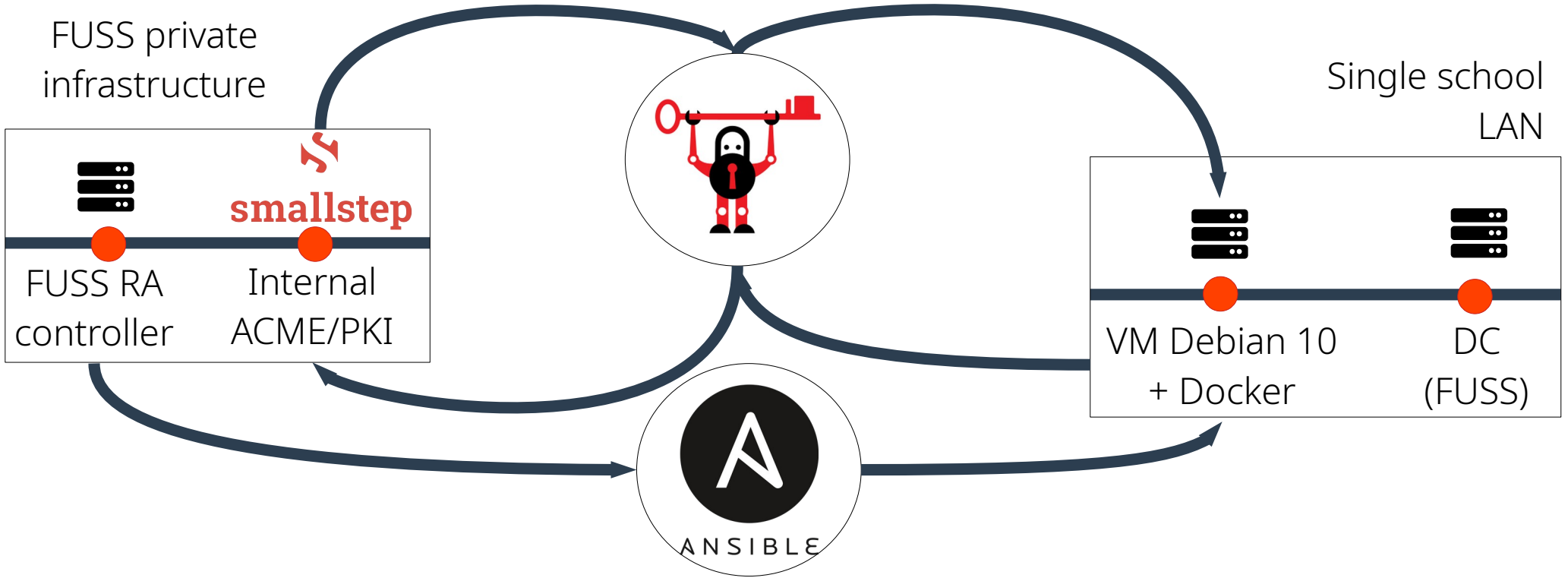
Infrastructure



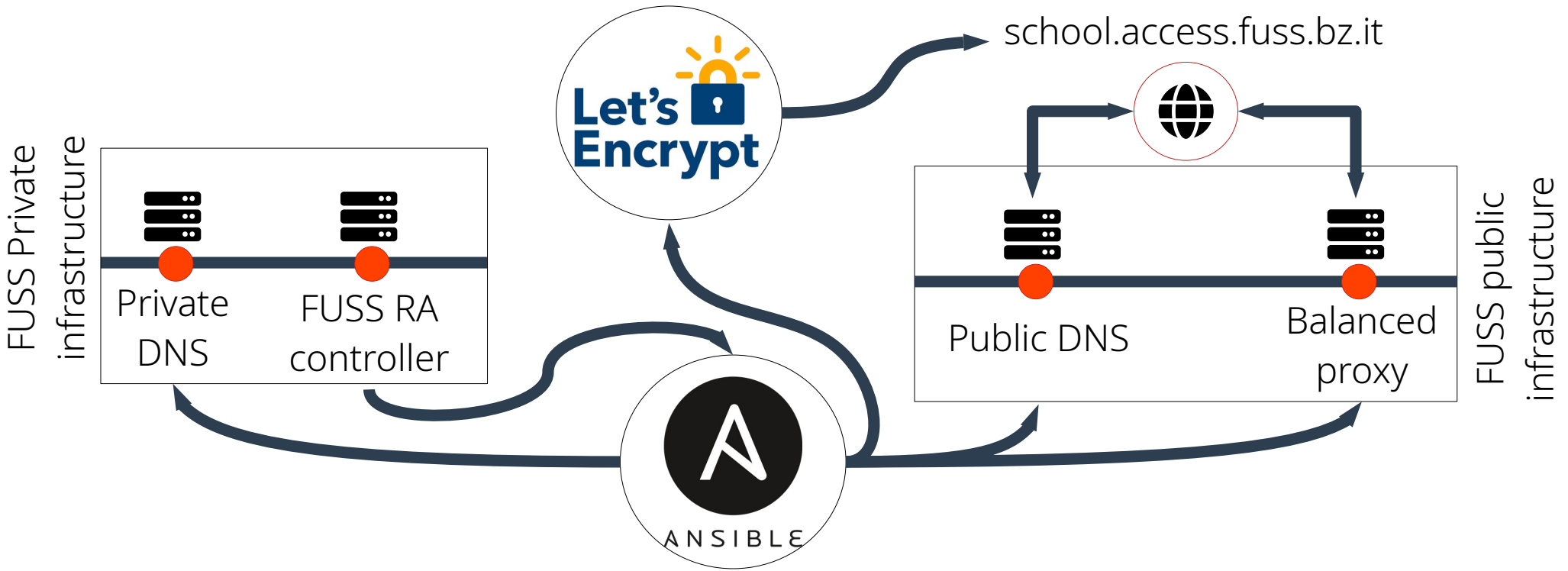
How we deploy it



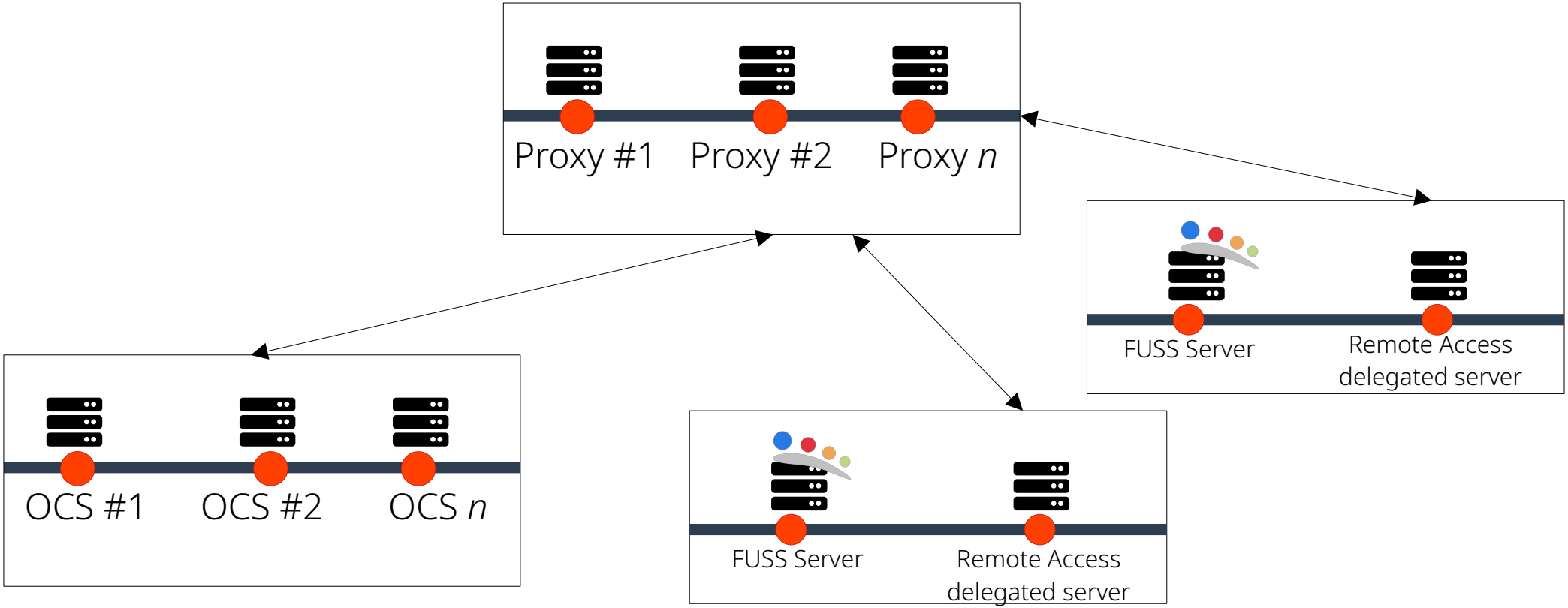
How we deploy it



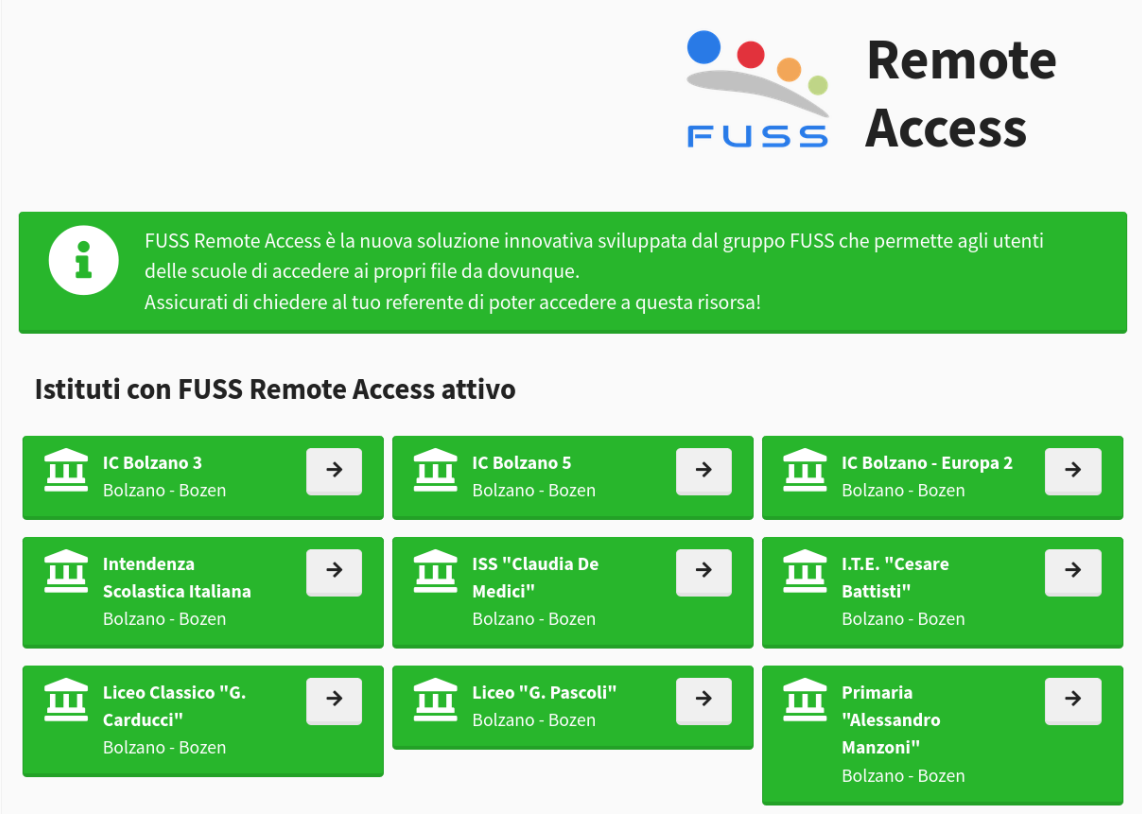
How we deploy it



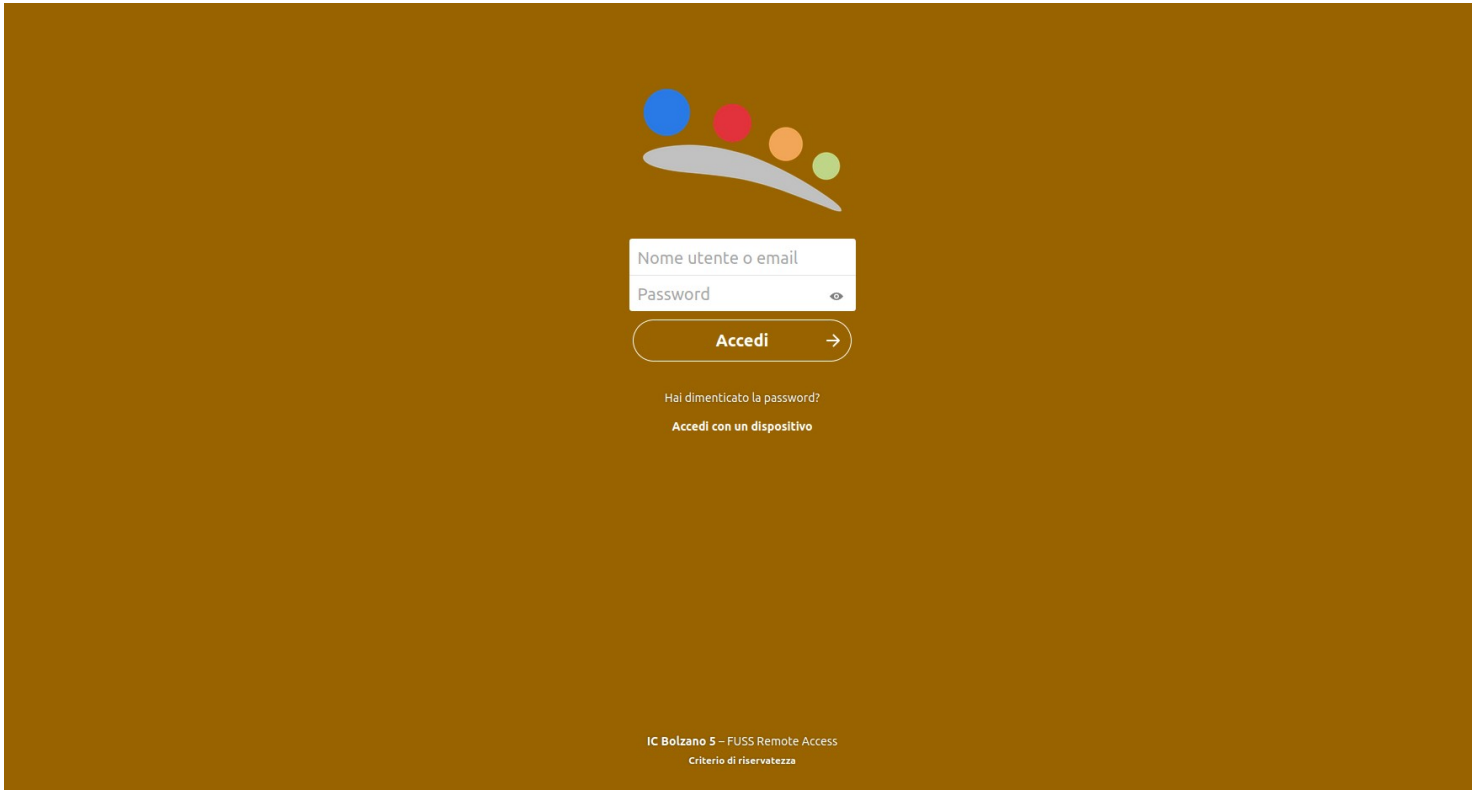
Scalability



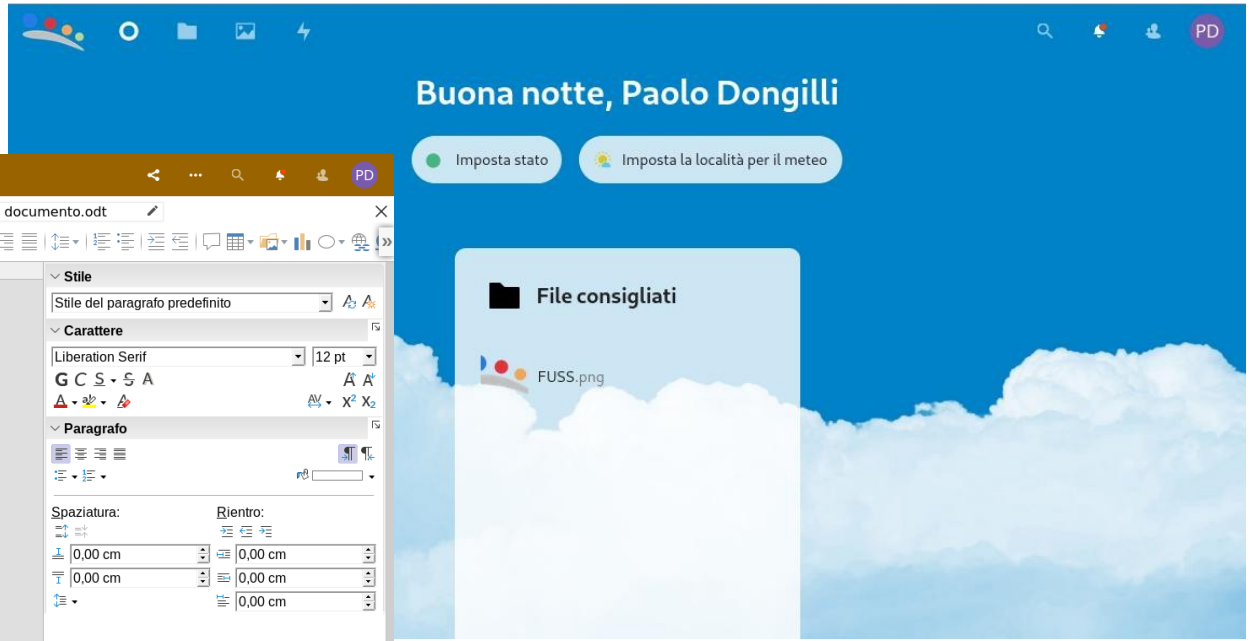
How it looks

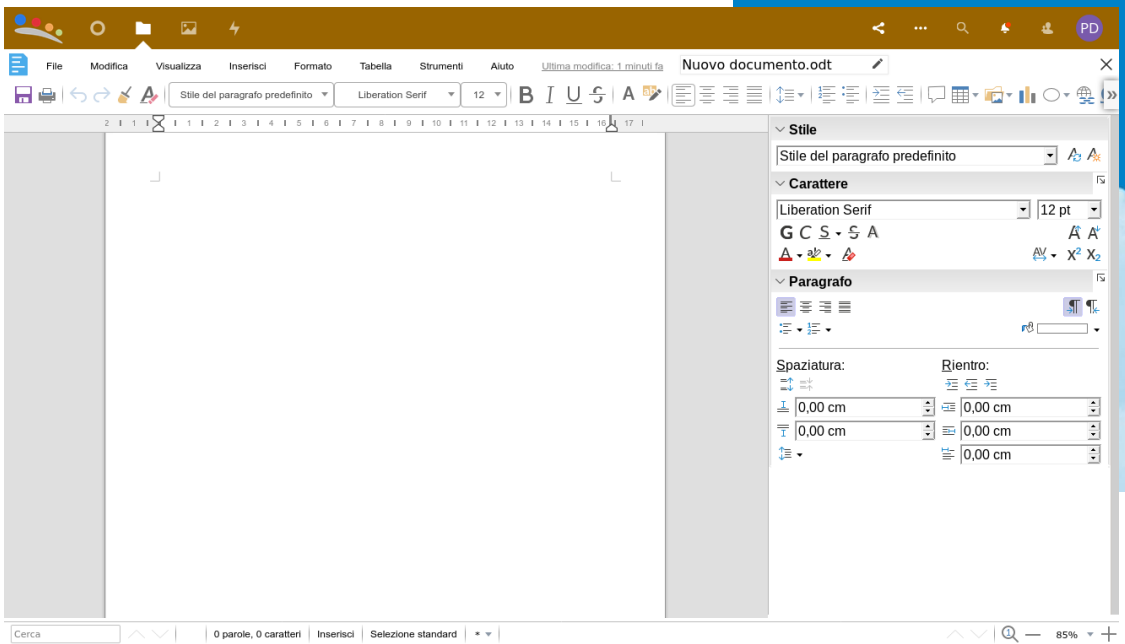

Remote Access
FUSS
FUSS Remote Access è la nuova soluzione innovativa sviluppata dal gruppo FUSS che permette agli utenti delle scuole di accedere ai propri file da dovunque.
Assicurati di chiedere al tuo referente di poter accedere a questa risorsa!
Istituti con FUSS Remote Access attivo
IC Bolzano 3
Bolzano - Bozen
IC Bolzano 5
Bolzano - Bozen
IC Bolzano - Europa 2
Bolzano - Bozen
Intendenza Scolastica Italiana
Bolzano - Bozen
ISS "Claudia De Medici"
Bolzano - Bozen
I.T.E. "Cesare Battisti"
Bolzano - Bozen
Liceo Classico "G. Carducci"
Bolzano - Bozen
Liceo "G. Pascoli"
Bolzano - Bozen
Primaria "Alessandro Manzoni"
Bolzano - Bozen

How it looks


Nome utente o email
Password
Accedi
Hai dimenticato la password?
Accedi con un dispositivo
IC Bolzano 5 – FUSS Remote Access
Criterio di riservatezza

How it looks


Buona notte, Paolo Dongilli
Imposta stato
Imposta la località per il meteo
File consigliati
FUSS.png


File
Modifica
Visualizza
Inserisci
Formato
Tabella
Strumenti
Aiuto
Nuovo documento.odt
Stile del paragrafo predefinito
Liberation Serif
12
Stile
Carattere
12 pt
Paragrafo
Spaziatura:
Rientro:
0,00 cm
0 parole, 0 caratteri
Inserisci
Selezione standard
85%

Positive outcomes

Offer of an important service to users

Contribution to the LibreOffice documentation

Contribution to SmallStep development

Investement in local skills

Publication

DIDAMATICA
informatica per la didattica

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

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

M. Marinello

FUSS Team, Autonomous Province of Bolzano, 39100 Italy
e-mail: me@marcomarinello.it

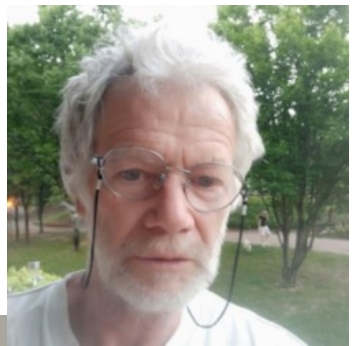
March 23, 2020

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.

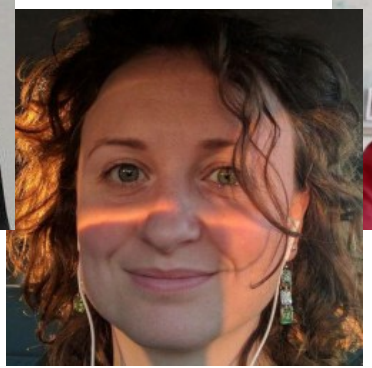
Acknowledgments

Piergiorgio Cemin

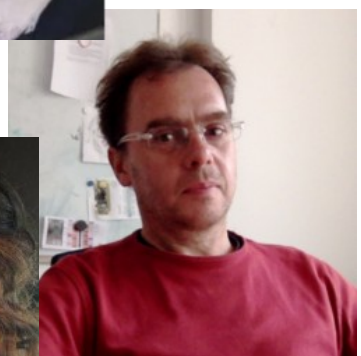


Emiliano Vavassori

Stefania Fiore



Marina Latini



Andrea Bonani

Thanks for your attention

Further info:

http://fuss.bz.it

info@fuss.bz.it

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