



T-DOSE 2015



SavaPage

Libre Print Management

by Rijk Ravestein, savapage.org

Sunday • November 29 • 14:00 - 15:00 hrs



- 1973 : University of Utrecht
- 1980 : MSc Cognitive Psychology
 - Human Information Processing
- 1985 : Software Developer
 - Cobol, C, C++, Smalltalk, Java, . . .
- 1998 : Owner of Datraverse B.V.
 - Software Development Contractor
 - VAR of Sustainable Printing Solutions
- 2011 : Creator of SavaPage
 - Developer, Community Manager, Legal Guardian



- **Print Management**
 - What is it?
 - Why do we need it?
 - Who provide it?
- **Issues . . .**
- **Libre Print Management**
 - Why SavaPage?
 - How does it work?
- **SavaPage Community**
 - Road-map
 - How to join?
- **Questions . . .**



What is Print Management ?

- Tracking & Tracing



- Monitoring and control



- Pay-per-Print

€ 0.05

- Secure Pull-Printing



- Copy control





Why Print Management ?



In most cases Document Output
is the **3rd Highest Office Expense**
Behind Payroll and Rent





Who provides the hardware ?

RICOH

nashuatec

xerox 

Canon

LEXMARK



KONICA MINOLTA

SHARP

TOSHIBA

 **KYOCERA**



SAMSUNG



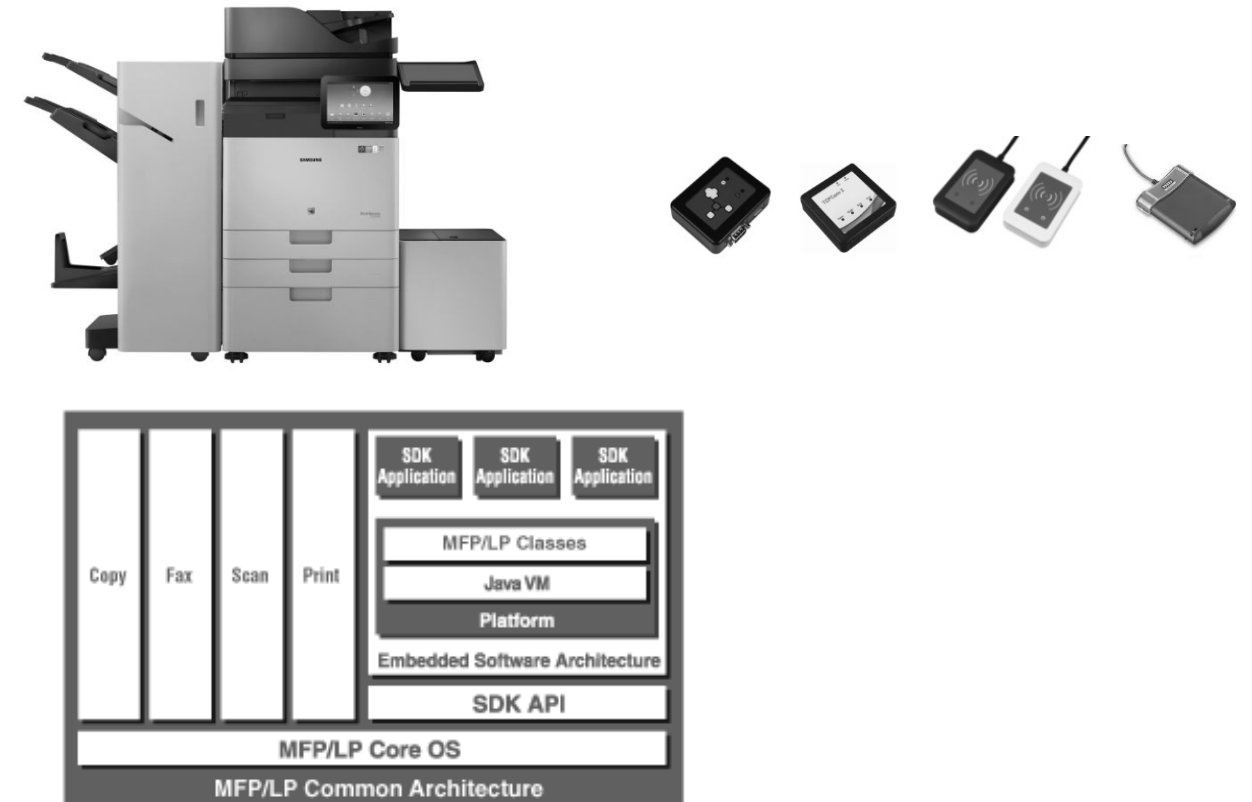


Who provides Print Management?





- **Proprietary Devices**
 - Multi-Functionals and Copiers
 - Peripherals
- **Closed Software**
 - Embedded on SDK
 - Certification Programs
 - €€€€€





Is there an alternative ?

Enter SavaPage . . .



What is SavaPage ?

- **Common features**

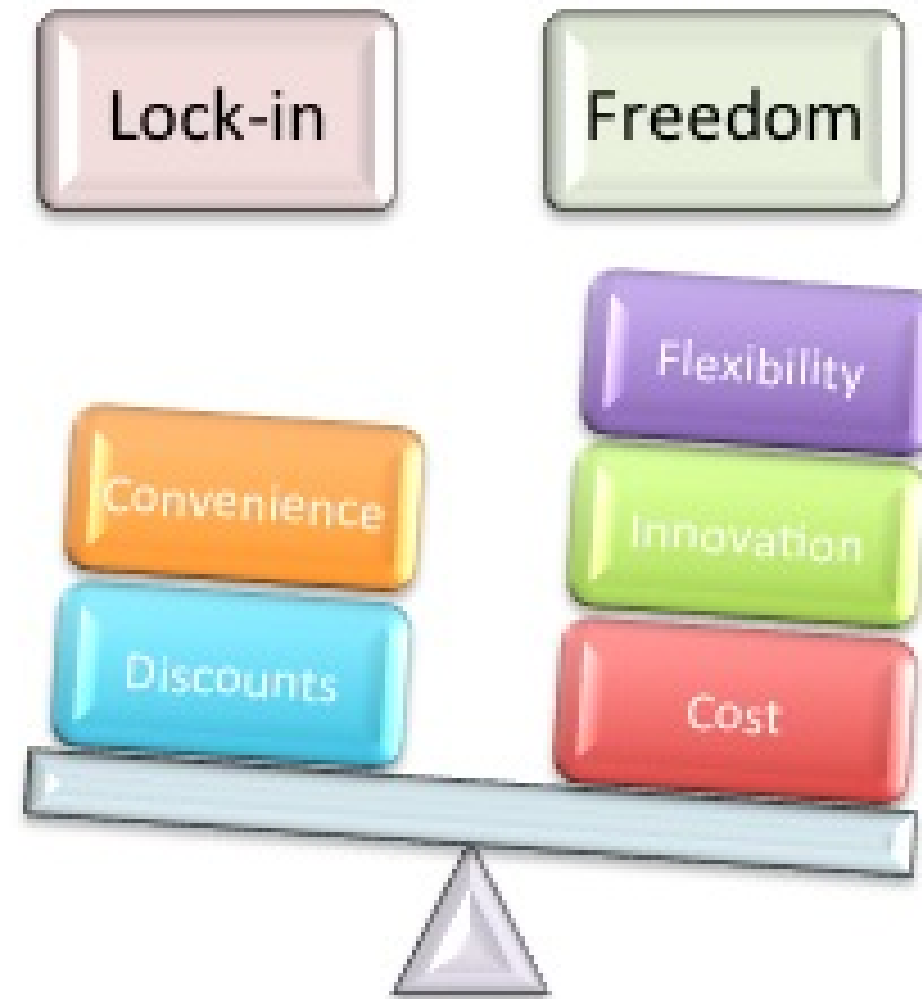
- Tracking & Tracing, Pay-Per-Print, Secure Pull-Printing
- Driver Print, Web Print, Mail Print, AirPrint, Google Cloud Print
- Comprehensive User Manual
- and more ...

- **Unique features**

- Corporate Virtual Printer + PDF Creator
- Free Software (AGPL), Open Standards, Commodity Hardware
- GNU/Linux Server, Platform for Innovation
- Supports all Client Platforms & Mobile Devices
- Community Support



Why Free Software ?





SavaPage helps **Schools, Non-Profits** and **Corporations** solve ...



- **Vendor lock-in**
 - by providing a **Free Software Solution** to accomplish
 - An Open Learning Environment with Open Source IT
 - An IT infrastructure philosophically aligned with social ideals
 - Independence and innovation with Open Standards and Open Source
- **High IT costs**
 - by providing a **Free Software Community** to accomplish
 - Optimal use of tax money for educational practice
 - Optimal use of member donations for primary activities
 - A level playing field for sustainable solution providers



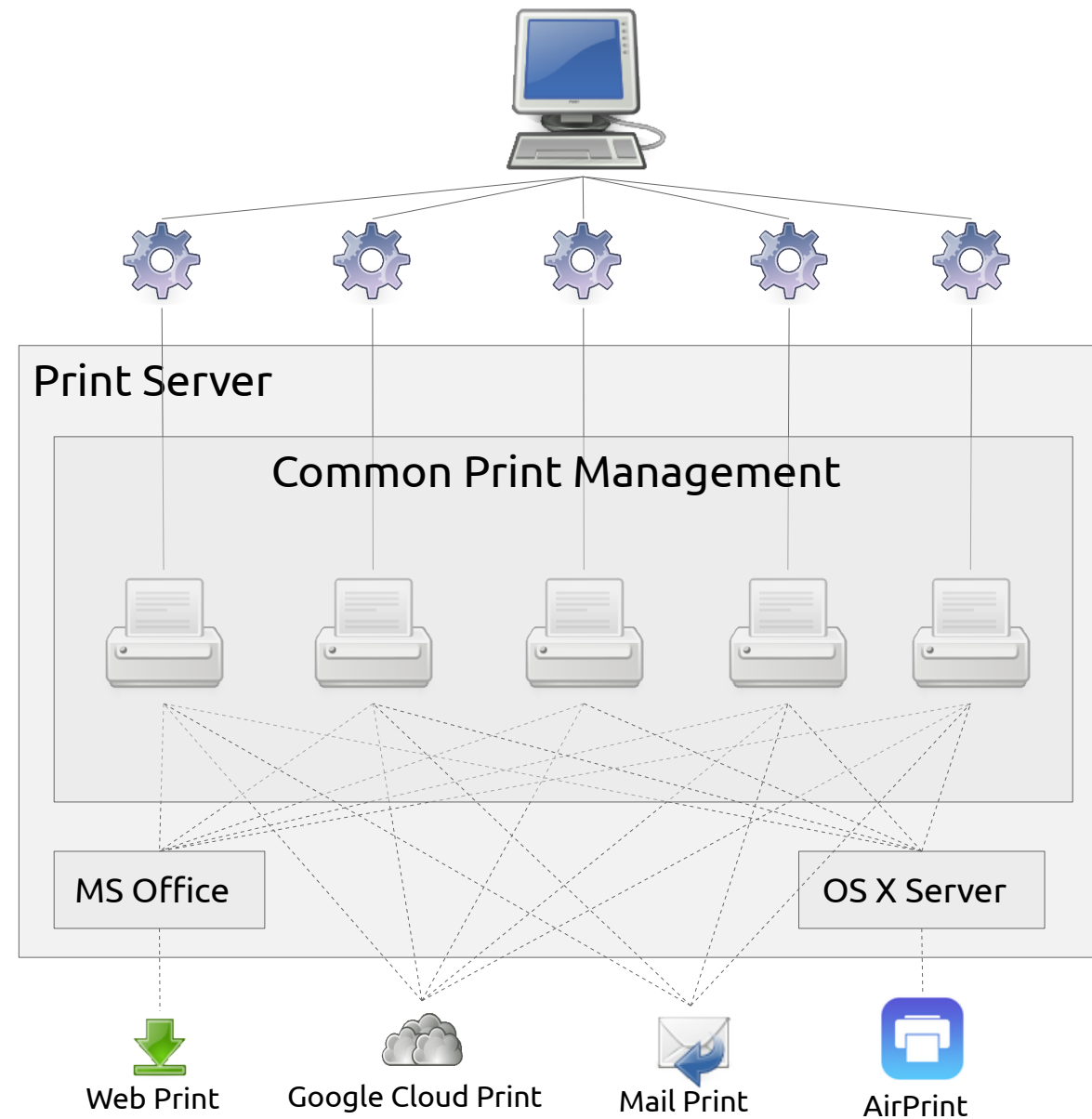
Why SavaPage ?



And yes, you can use it @home

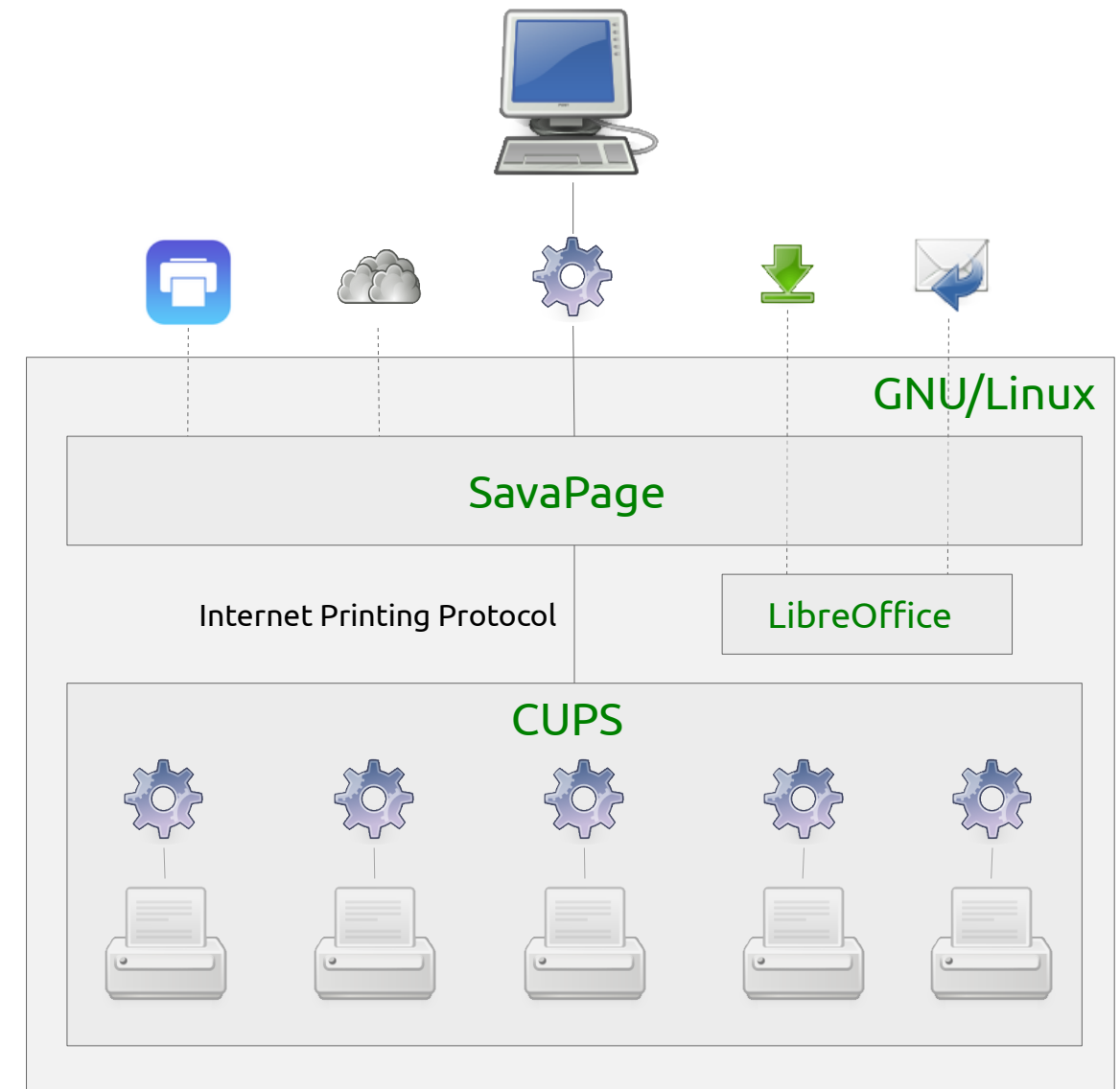
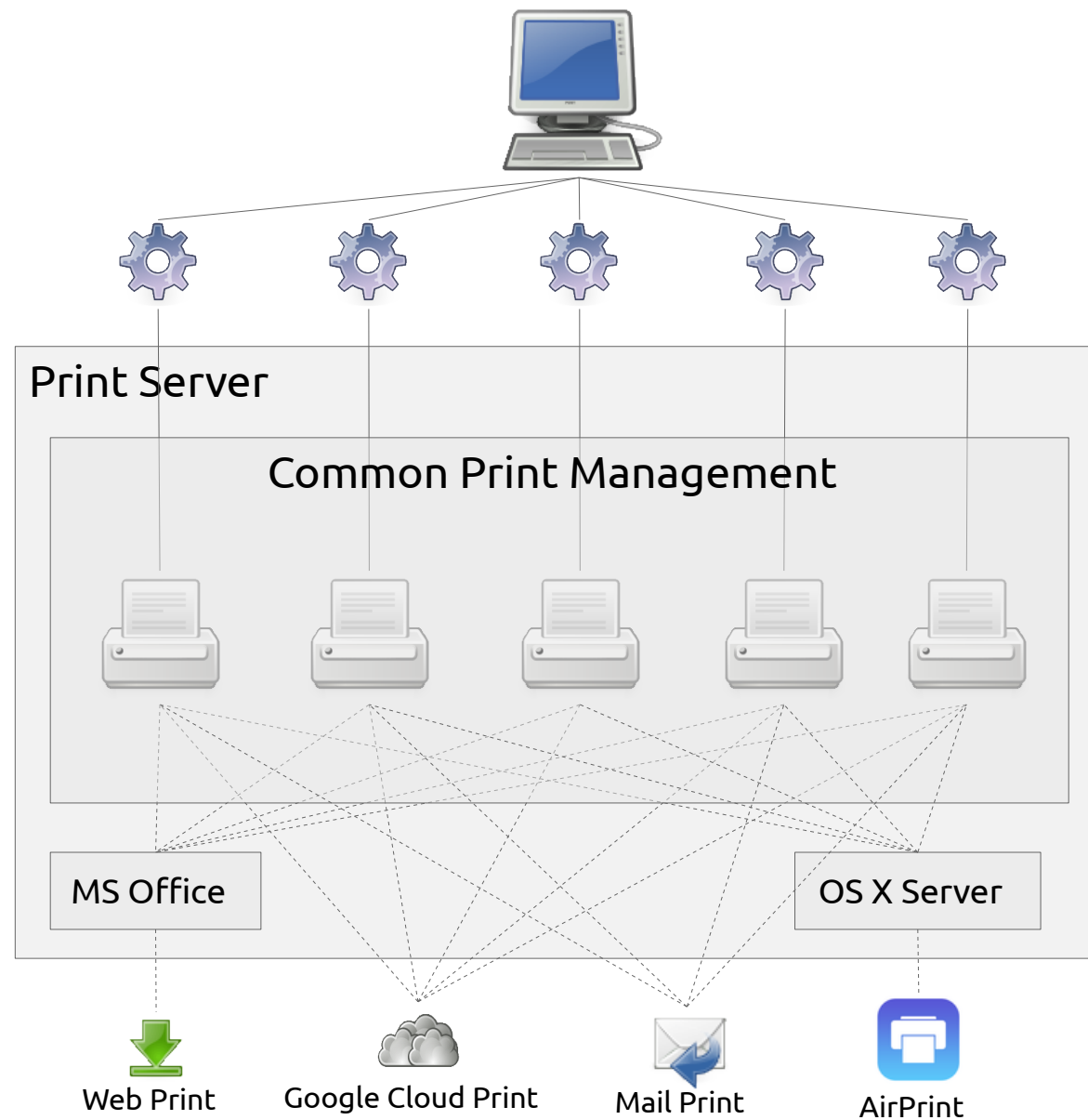


How does SavaPage work?





How does SavaPage work?





Step 1: Print

Printer Properties - 'SavaPage' on localhost

Settings Policies Access Control Printer Options Job Options Ink/Toner Levels

Settings

Description: SavaPage

Location:

Device URI: Change...

Make and Model: Change...

Printer State:

Tests and Maintenance

Print & Fax

Show All

Printers

SavaPage
Idle, Last Used

SavaPage

Location:

Kind: SavaPage, 0.9.0

Status: Idle

☐ Share this printer on the network

Internet Printer

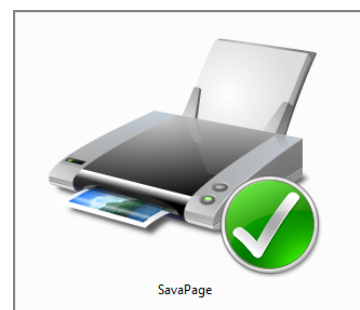
Use this URL to print over public internet:

`ipps://example.com/printers/internet/user/1111/uuid/0e655217-b25b-4dd2-9fad-21720ebf3d69`

Printer

RECENT PRINTERS

SavaPage
Login to SavaPage App before printing. ✓



Upload File

Supported Documents
Microsoft Office, OpenOffice, LibreOffice, RTF, PDF, PS, XPS, HTML, TXT

Supported Graphics
BMP, GIF, JPEG, PNG, SVG, TIFF

Max File Size
5 MB

Font for plain text

No file chosen

Mail Print

☒ Allow users to mail documents

IMAP

Host:

Port:

User Name

Password

Inbox

Trash

Google cloud print beta

Owned by me



Step 2: Login Web App

Welcome to SavaPage
Please login to start the application.

User Name

Password

☒ Login

About

Language

Language

Select your language:

Deutsch

English

Français

Nederlands

Cancel

Welcome to SavaPage
Please login to start the application.

ID Number

PIN

☒ Login

Login with

User Name

NFC Card

Please login to start the application.

Swipe your card ...

Login with

User Name

ID Number

-

Unix

LDAP

OpenLDAP

Novell

Apple

Windows

Host

zuiderzee

Port

389

☐ Use SSL

Base DN

DC=dataverse,DC=nl

Admin DN

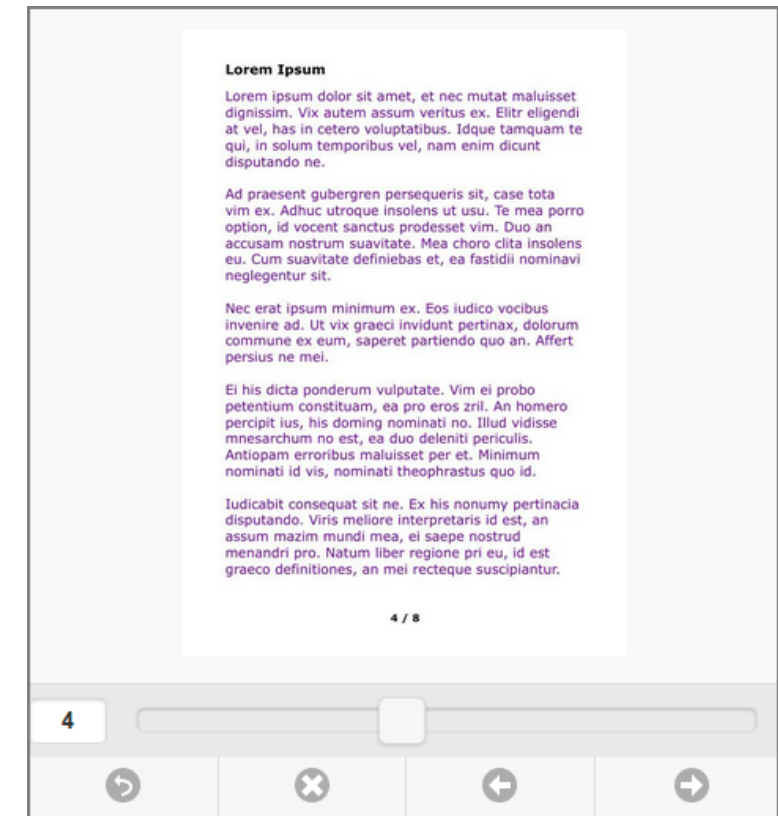
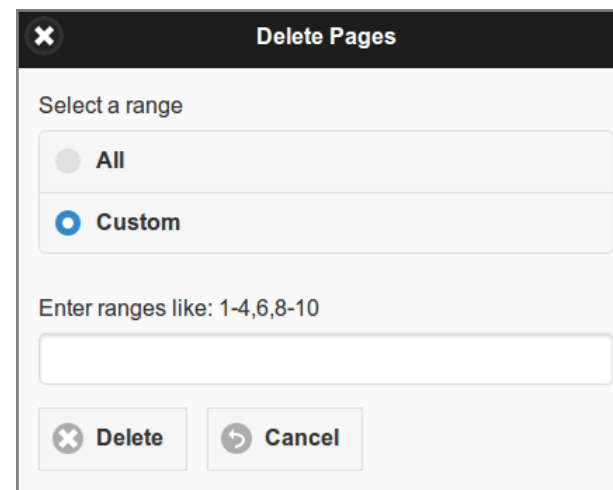
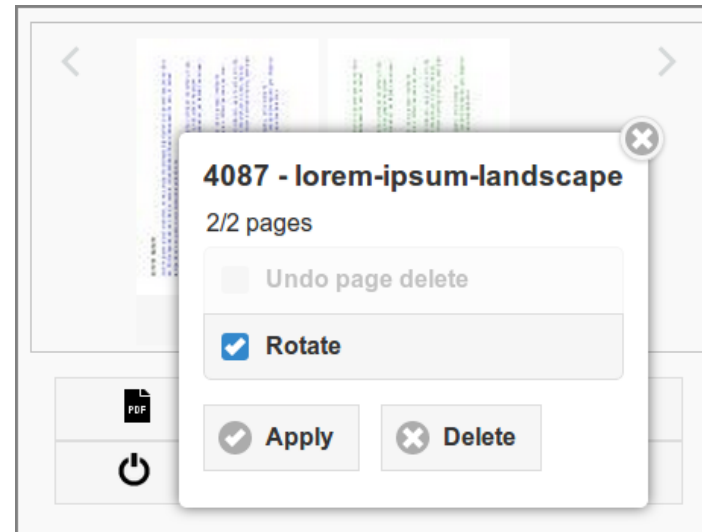
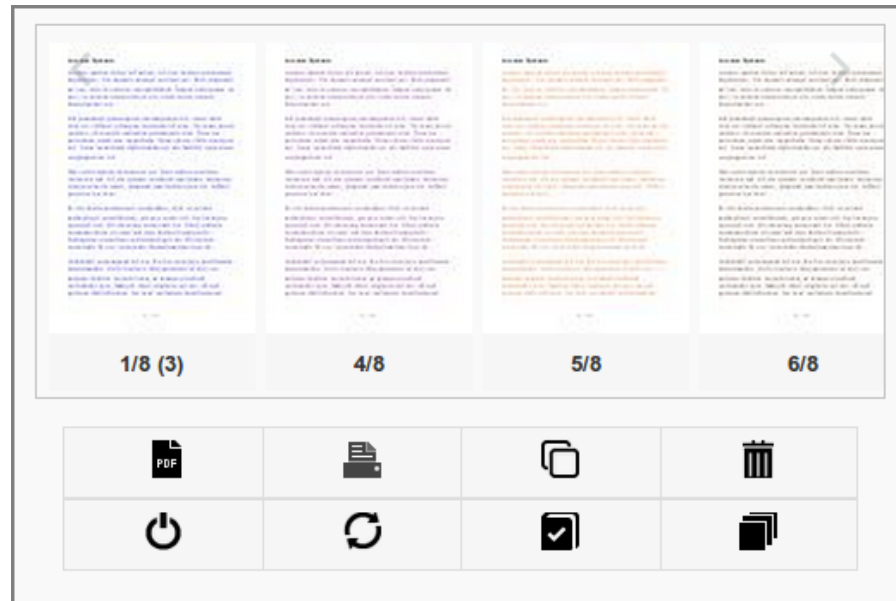
CN=admin,DC=dataverse,DC=nl

Admin password

.....



Step 3: Preview, edit...





Step 4a: Save as PDF

PDF

Scope

☒ -

Title

Author

Rijk Ravestein

Pages

Letterhead

☒ -

☐ Eco Print

☐ Remove graphics

Description

Security

Passwords

+ Description

+ Security

+ Passwords

Download

Send

Default

Back

Scope

☒ -

Title

loreem-ipsum.odt

tiger.svg

Description

Subject

SavaPage Demo

Keywords

test demo example

Passwords

User Password

confirm

Owner Password

confirm

Security

Encryption

☒

Actions allowed

☐ Printing

☐ Degraded Printing

☐ Page Extraction

☒ Commenting

☐ Document Assembly

☒ Content Copying

☒ Content Copying for Accessibility

+ Allow all

- Allow none



Step 4b: Proxy Print

×

Print

Printer

A4 A3

Q floor

×

·)) XEROX-WORKCENTRE-5890 • 1st Floor

·)) Ricoh Aficio MP C7500 PS • 2nd Floor

Fast

✓ DELL-5100CN • 3rd Floor

·)) Fast Print Closing Time

17:20:12

↻

↶ Back

×

Ricoh Aficio MP C75...

A4 A3

Media Source

Automatic

Double-sided printing

Two-sided (long edge)

Color Mode

Grayscale

Pages per side

1

Finishings

none

✓ OK

↻ Default

A4 A3 A4 A3

Page Scaling

Crop Expand Shrink

Media Source

A4

A4 A3 A4 A3

Page Scaling

Crop Expand Shrink

Media Source

A3

A4 A3 A4 A3

Page Scaling

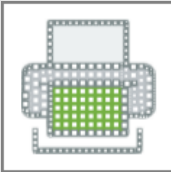
Crop Expand Shrink

Media Source

A4

SavaPage • Libre Print Management • savapage.org

20



Step 4b: Eco Print (1)

Job

Scope ▼ -

Title

Copies

Pages

Letterhead ▼ -

☐ Eco Print • 15% discount

☐ Remove graphics

☒ Collate

21

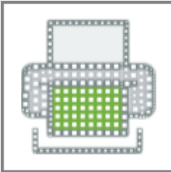
21

☐ Delete all pages after printing

Lorem ipsum dolor sit amet,

Lorem ipsum dolor sit amet,

Lorem ipsum dolor sit amet,



Step 4b: Eco Print (2)

Job

Scope ▼ -

Title

Copies

Pages

Letterhead ▼ -

☐ Eco Print • 15% discount

☐ Remove graphics

☒ Collate

☐ Delete all pages after printing

☒ Print & Close

瀉 雀 糊 綫 鹿 搭 滑 圖 浮,

瀉 雀 糊 綫 鹿 搭 滑 圖 浮,

瀉 雀 糊 綫 鹿 搭 滑 圖 浮,



Step 5: Print Release

lorem-ipsum

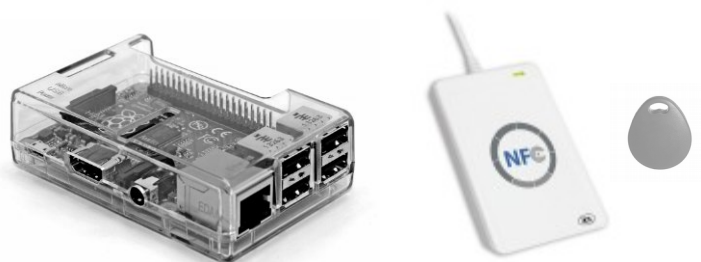
Your print job is held for authentication.⁸

€ 0.1500

Swipe your card to release ...

Cancel

Enter ranges like: 1-4,6,8-10



✕ Hold Print Jobs

● RICOH-AFICIO-MPC-7500PS 19:48

19:18 • 1 page (1 sheet) • Duplex • Grayscale • €0.10

✕ Remove

● RICOH-AFICIO-MPC-7500PS 19:49

19:19 • 1 page, 2 copies (2 sheets) • Duplex • Grayscale • €0.10

✕ Remove

● RICOH-AFICIO-MPC-7500PS 19:48

19:18 • 1 page (1 sheet) • Duplex • Grayscale • €0.05

✕ Remove

✕ Remove all

⏸ Extend

↶ Back

⏸ 0:29 3 4 €0.25

☒ Proxy Print Authentication

Print Mode

☐ Fast

☐ Hold

☐ Direct

☒ Fast + Hold

☐ Fast + Direct

Target

Single Printer

XEROX-WORKCENTRE-5890

Printer Group

XEROX

NFC Card Number

HEX DEC LSB MSB

✓ OK ✕ Delete ↶ Cancel



Step 6: Recharge account

✕

Point of Sale

Deposit

Receipts

Enter the username and select an amount to add to the account.

User ID

Q

rijk

✕

Amount

€

5

 .

00

Balance €15.00

Payment method

Credit Card

▼

Comment

VISA card

Receipt

-

rijk@dataverse.nl

✓ Deposit

✕ Clear

↶ Back

Pre-Paid Print Card

EUR 5.00

A-1503-0797-8523-0567-9607

Use before December 31, 2015

Issued by Dataverse B.V.

✕

Redeem Voucher

All requests to redeem vouchers are logged.

Number

A-1503-0797-8523-0567-9607

✕

✓ Redeem

↶ Back

Financial

Balance

EUR 4.55

Credit limit

EUR 10.00

+

Voucher

-

Transfer

Use an external account to increment your balance:

=

+

iDEAL

Bancontact

Master Cash

S

Red

PayPal

Bitcoin

✕

Transfer Money

iDEAL

Transfer money from ideal.
Minimum amount EUR 0.55
EUR 0.45 cost is charged to your account.

EUR

5

 .

00

↶ Start

↶ Back

✕

Bitcoin

To pay with Bitcoin please send to:

9FgdrqYW7fsdd5UWrGlpJl2KcnMoJ8aVgF

This address is for one-time use. A second payment at this address is not accepted.

↶ Start

↶ Back

Manual transaction • D000022

4/23/14 3:26 PM

rijk

€20.00 • €5.00 • Credit Card

VISA card

↓

Receipt

Redeem Voucher

9/8/15 1:23 PM

rijk

EUR 6.41 • EUR 5.00

Redeemed voucher "A-1503-0797-8523-0567-9607".

iDEAL

ideal

6/2/15 4:30 PM

[system]

EUR 60.25 • EUR 4.55 • TESTNL99

NL17RABO0213698412 • tr_fBkJAKmqrR

SavaPage tegoed voor rijk.

• EUR 5.00 -/- 0.45 • T. TEST

Bitcoin

bitcoin

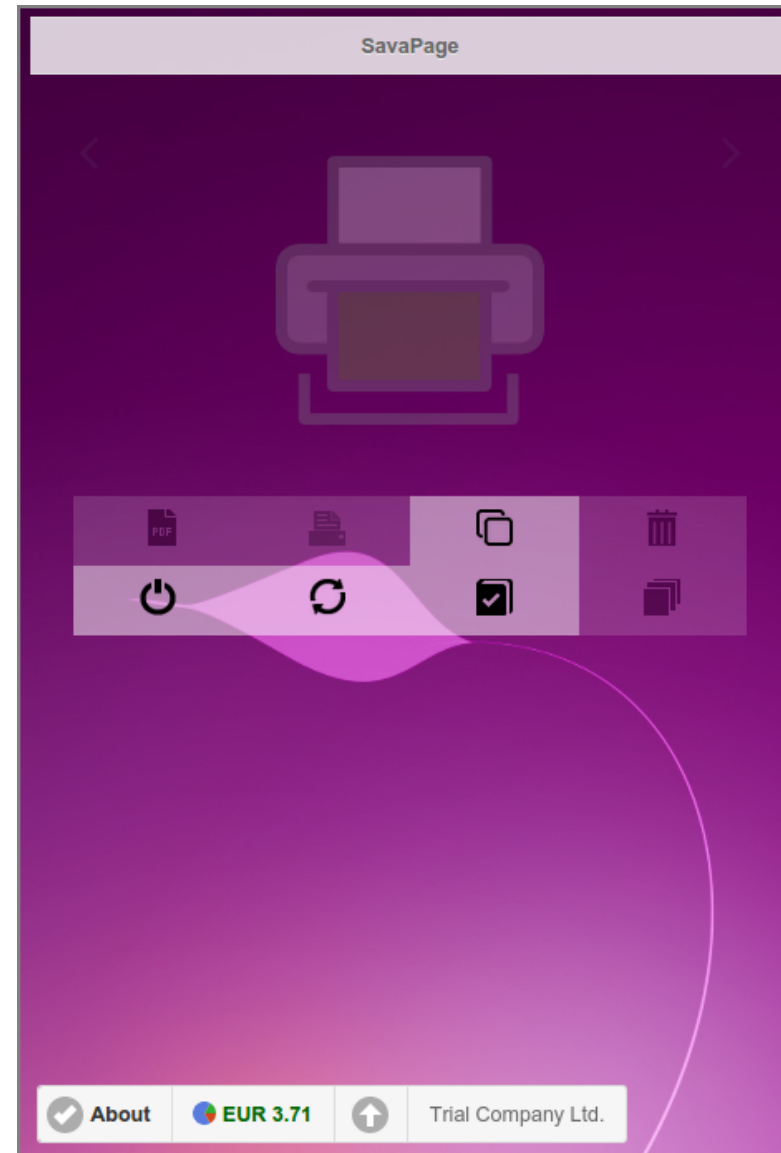
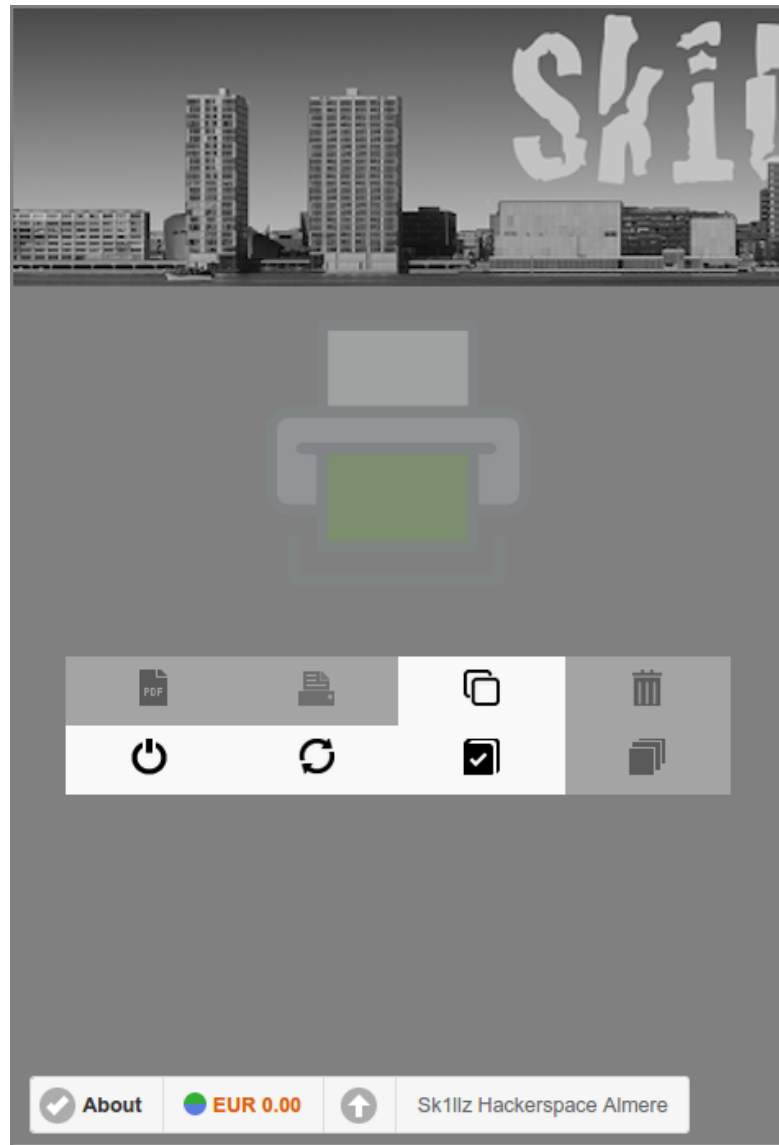
6/15/15 4:57 PM

[system]

EUR 4.86 • EUR 0.83 • 96212...82710 • B 0.00400000

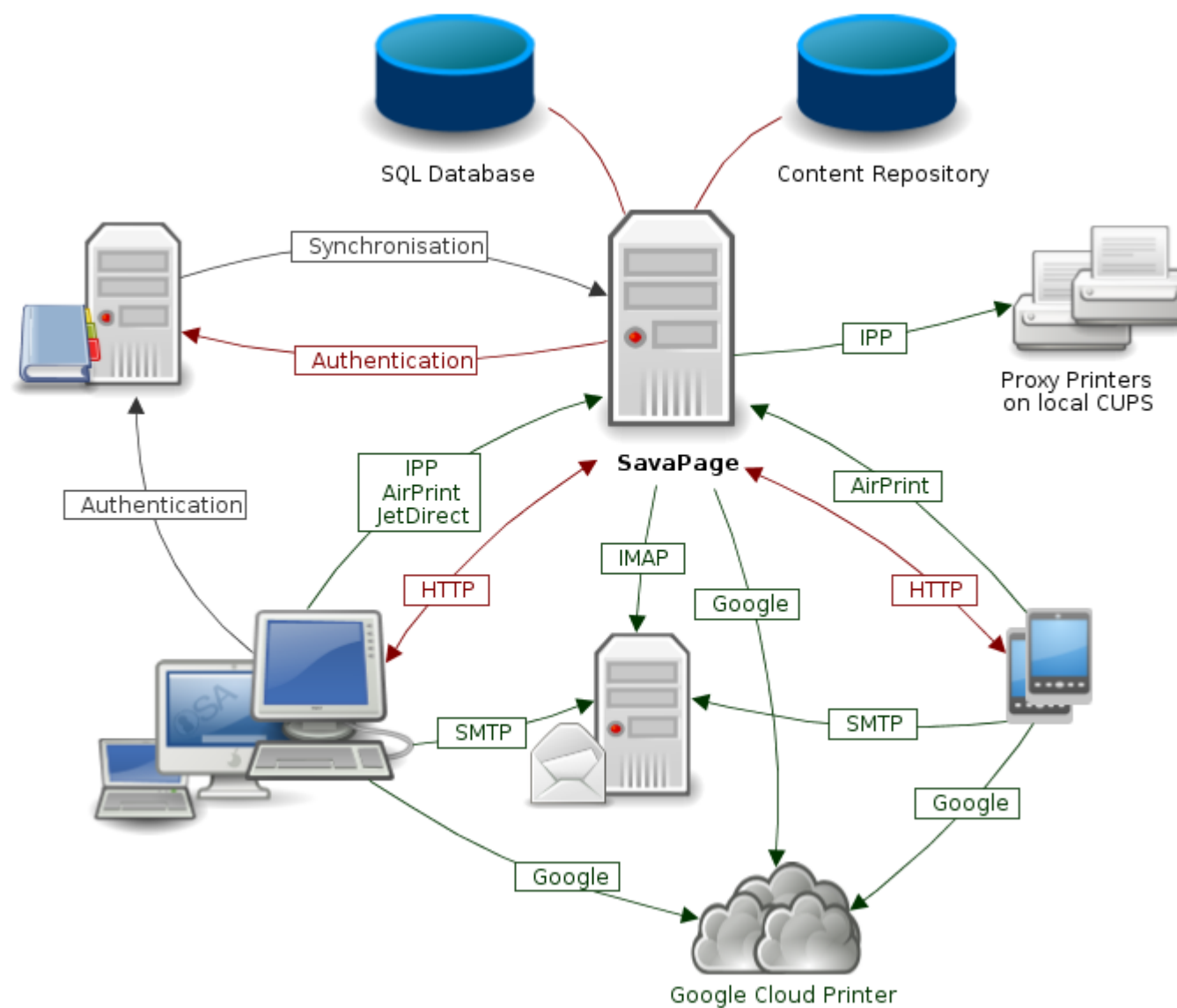


Customize



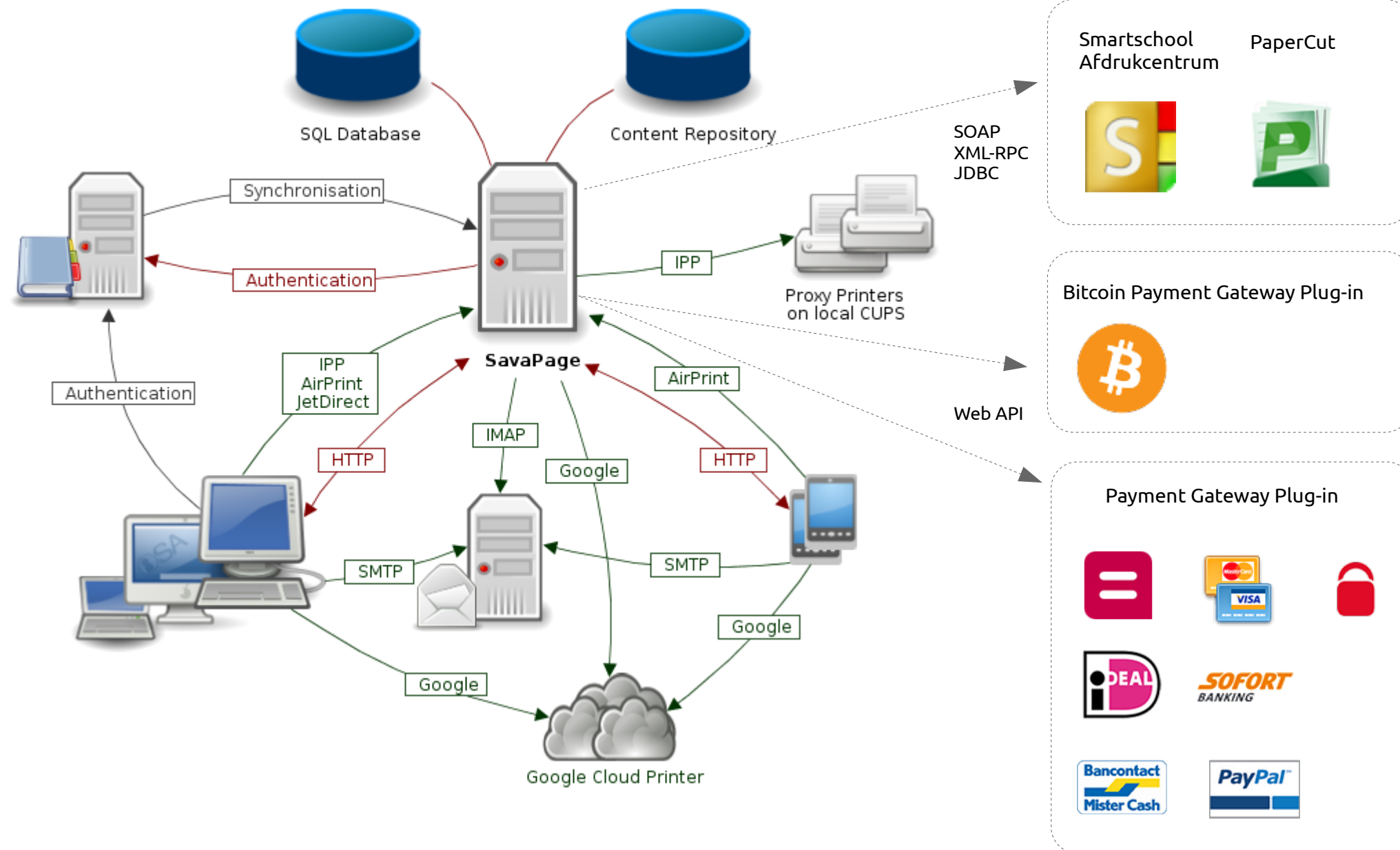


Behind the scenes





Plug-ins





Admin Web App



SavaPage

A Libre Web Print Environment for Desktops, Smartphones & Tablets

Welcome. This is the place for administrators to configure and consult the SavaPage environment.

Dashboard

Users

Queues

Proxy Printers

Devices

Options

Documents

Log

About

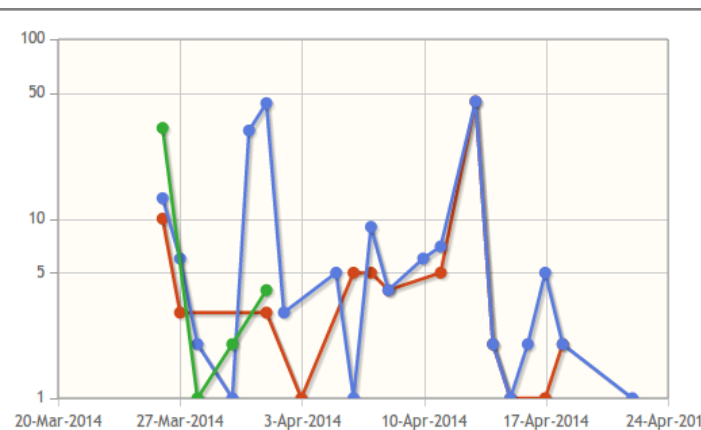
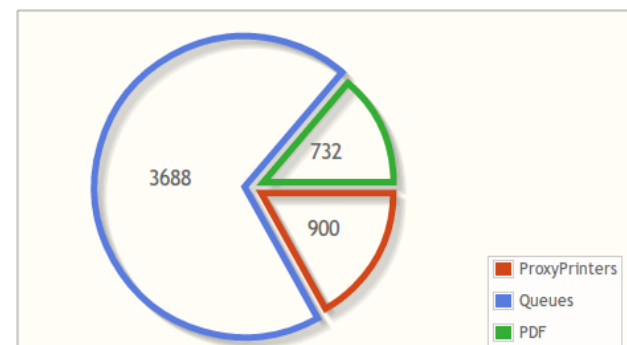
Logout

Environmental Impact

Paper	1,495 SU
Trees	17.941%
CO ₂	7.62 kg
Energy	0.019 kW-h

Page Totals

Since December 31, 2012



Dashboard

Community member Trial Company Ltd.

Membership Fellow

Participants 50

System status Ready to use

System uptime 5h 19m

Users 5

Client sessions 1

Web sessions 0

Recent errors 0

Recent warnings 0

Documents

Log

About

Logout

Vouchers

Point of Sale

Configuration Editor

User Manual

savapage.org

Real-time Activity

10:19:39 | Users successfully synchronized.
10:19:39 | Files: present [200.1 kB]
10:19:39 | Users: identical [4] added [0] updated [0] non-exist [0] internal [5]
10:19:39 | Synchronizing [4] users with [9] in database
10:19:39 | Starting user synchronization...

Clear



Admin Web App

Queues

Select and Sort

New

11

IPP Printer (reserved)
ipps://192.168.1.35:8632/printers/
192.168.1.0/24
Dec 31, 2012 ~ Nov 14, 2015
1,922 jobs, 4,939 pages, 1.4 GB

/airprint

untrusted

AirPrint (reserved)
Apr 4, 2013 ~ Aug 15, 2015
54 jobs, 243 pages, 155.6 MB

Proxy Printers

Select and Sort

CUPS

Synchronize

11

✓

HL-1430-SERIES

HL-1430-SERIES

Jan 3, 2013 ~ May 21, 2013
229 jobs, 243 pages, 251 sheets

HL-2030-SERIES

HL-2030-SERIES

Jan 3, 2013 ~ Jan 11, 2015
495 jobs, 975 pages, 950 sheets, 111.1 MB

Member of Group: SECURE
← PI • Fast • Hold

Cost per media side

Use B/W as default

Source	One-sided	*Two-sided		
*auto	B/W	Color	B/W	*Color
<div><div></div><div>top</div></div>	0.0500	0.1000	0.0300	0.0700
A4 - white		A4		

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Devices

Select and Sort

New Terminal

New Card Reader

11

active

CARD-READER-PAMPUS

→ PAMPUS

192.168.1.35:7772 • Next to PAMPUS terminal
Disconnected: Jan 13, 2015 5:39:27 PM

active

CARD-READER-RPI

192.168.1.200:7772 • Raspberry PI @ Xerox
Connected: Jan 13, 2015 5:39:27 PM
Proxy Print • Fast • Hold • Single Printer • XEROX-WORKCENTRE-5890

active

PAMPUS

← CARD-READER-PAMPUS

192.168.1.35 • Meeting room

disabled

PUNTER

192.168.1.36 • Steven's desktop
Proxy Print • Printer Group • BROTHER (HL-2030-SERIES, HL-1430-SERIES)



- Just-in-time print-spooling
 - Spool files can be huge, held jobs use a lot of disk space
 - Job options are lost or irrelevant when spool file is moved to another queue
 - Snooping on shared hold/release queues
 - Original PDF + job options are held/released
 - Jobs need not be moved to a native release queue
 - Jobs options are retained
- Print Preview
 - Mindless printing
 - Print preview, concatenation, editing, letterheads
 - PDF Creation, “why print when you can save-a-page”
 - Save ink and toner with Eco Print and graphics filter



- One front-end printer
 - Multiple printer drivers on Windows desktop (bloadware)
 - One Generic Postscript Driver
- SSL printing
 - Sniffing print jobs and replaying them
 - <http://www.irongeek.com/i.php?page=security/networkprinterhacking>
 - IP printing on port 9100
 - ipp*s*://savapage:8632/printers (or https)
 - Proxy printer connections are sand-boxed and centrally guarded
- Hardware requirements
 - 2 CPU cores, 2 GB RAM, 8 GB+ HDD, virtual machine compatible



Security and privacy concerns (out-of-scope)

- Saved copies on printer HDD
 - Configure your MFP (AES encrypt HDD)
- Secure MFP access
 - Network access
 - Device access
- Google Cloud Print?



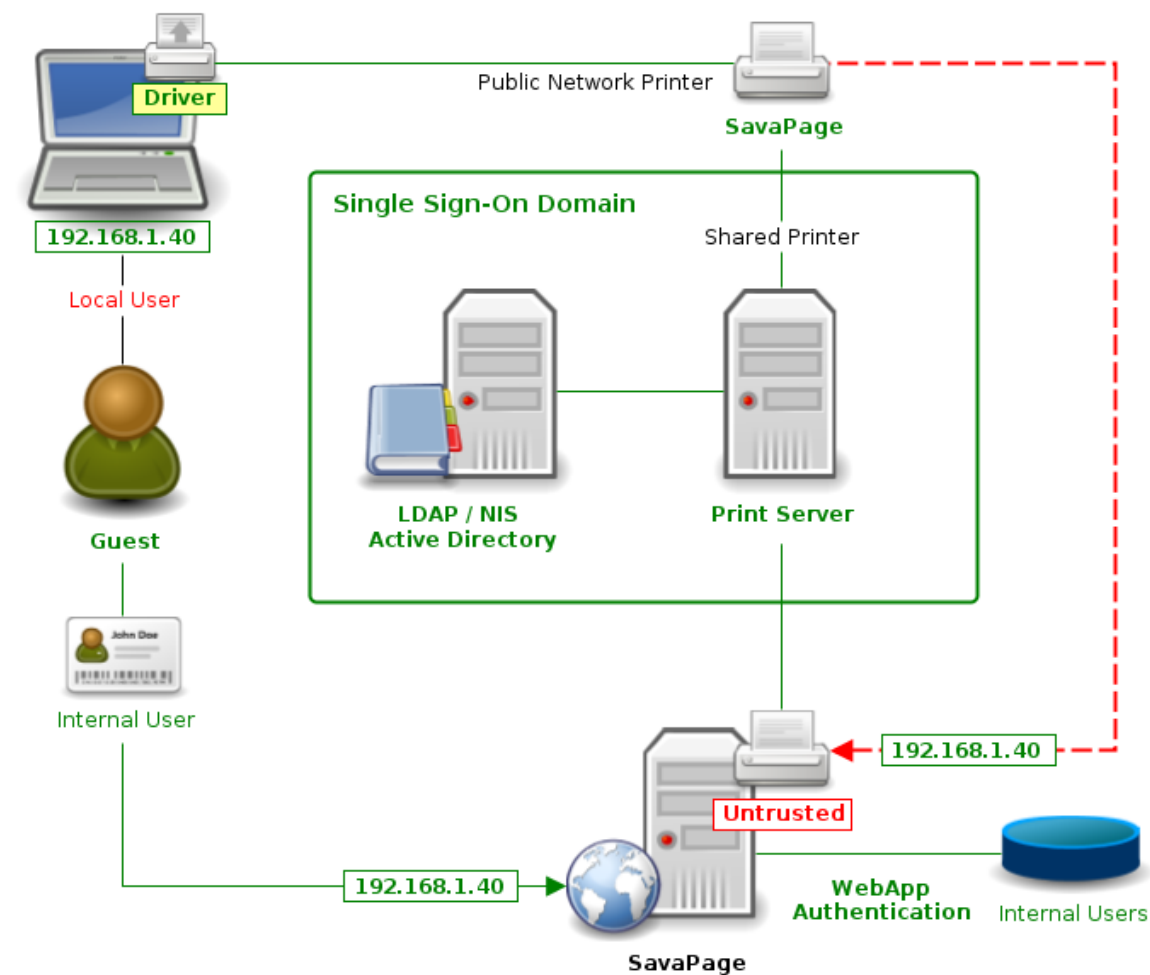
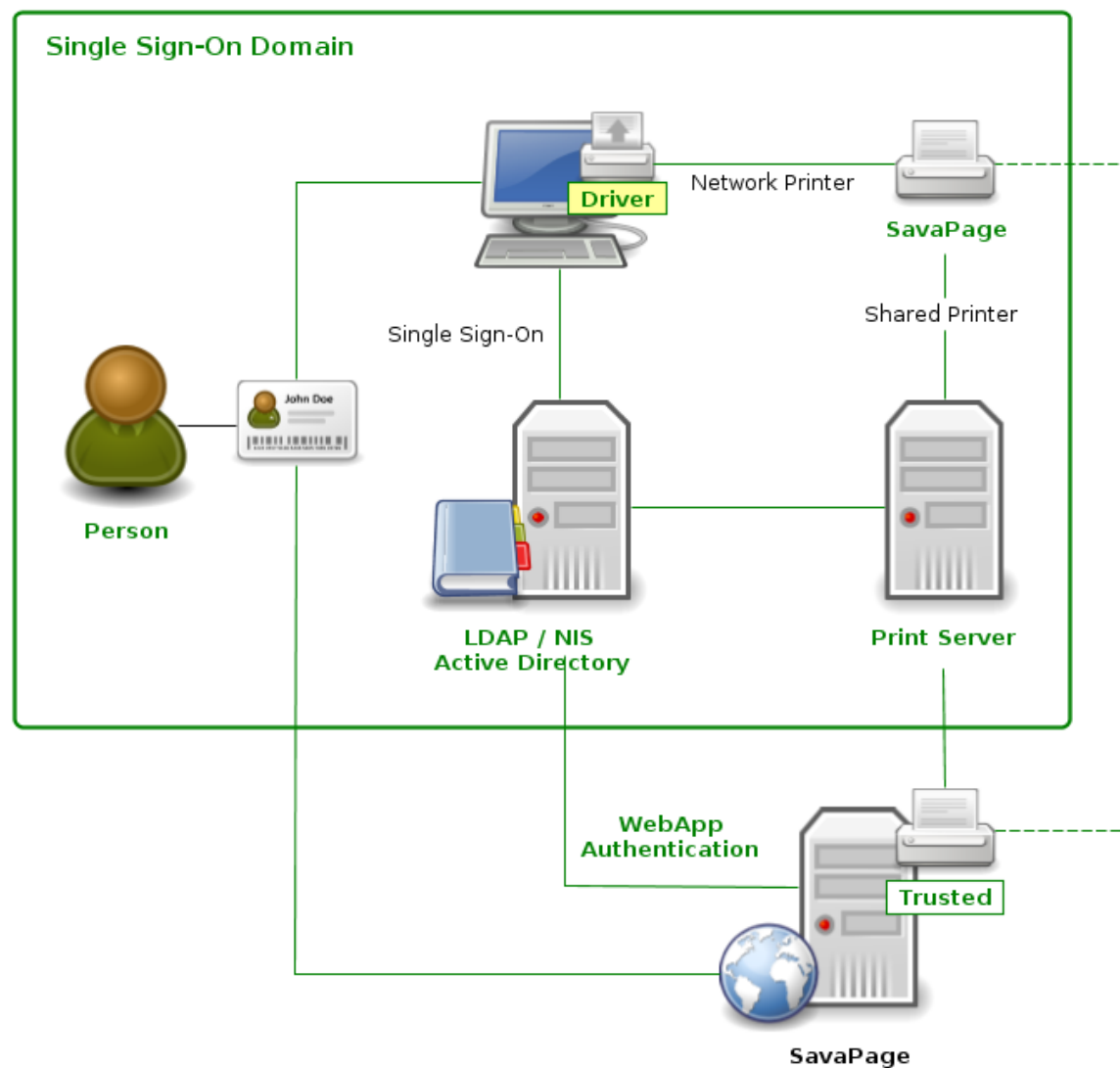


- **Tracking and Tracing**
 - Database
 - Omit document names
 - Anonymize jobs
 - Personal queue
 - Stored PDF files
- **Monitoring and Control**
 - Transient data (control)
 - Trends, violations (monitoring)





It's all about trust, stupid!





- **Fellows – Donations**
 - Technical Support
 - Requirements
- **Partners – Fair share**
 - Development Partners
 - Deployment Partners
 - Service Level Agreement
 - Translation Partners
- **Community Manager**
- **Legal guardian**





Commercial Fellow

Participants	First Year	Next Yearly
25	€ 350	€ 160
50	€ 425	€ 160
75	€ 500	€ 160
100	€ 550	€ 160
150	€ 675	€ 160
Above 150		
+10	€ 15	€ 3

Educational Fellow

Participants	First Year	Next Yearly
500	€ 425	€ 160
1000	€ 550	€ 160
1500	€ 675	€ 160
2000	€ 800	€ 160
2500	€ 925	€ 185
3000	€ 1050	€ 210
Above 3000		
+100	€ 25	€ 5

Since the standard of living is different in different parts of the world, and not every organization has the same financial resources, the proposed donation may be too high for some.

If this applies to you, then please contact us. We do not want to exclude motivated fellows for financial reasons. We are happy to have you on-board and accept the donation you can afford.



- **Fellows**

- BE ~ SavaPage SmartSchool (2 + 10)
- NL ~ SavaPage (1 - 1)
 - Sept 2014 ~ Apr 2015
 - Windows VDI, 30 teachers, 15 printers + Raspberry Pi

- **Partners**

- BE ~ Integration Partners (1)
- NL ~ Deployment Partners (3)
 - More Deployment Partners needed!
- Development Partners needed!
- Translation Partners are welcome



- **Development**

- Fellow requirements
 - 2016-1Q
 - Delegated Print + Moodle Integration
- ...
 - More reports
 - SANE Network Scanning



- **Vacancies**

- Development Partners
- Deployment Partners





Thanks for your attention, please stay in touch

savapage.org

<http://savapage.org/w>



<https://quitter.se/savapage>



<https://twitter.com/savapage>



<https://gitlab.com/savapage>



<https://secure.dataverse.nl/newsletters>