

GNU Health on openSUSE

Insights into a global, diverse and friendly community

openSUSE Conference
Prague, 26.05.2018

Dr. Axel Braun
DocB@opensuse.org
abraun@gnusolidario.org

What is GNU Health?

GNU Health – Freedom and Equity in Health



Social Medicine

- "La medicina sin humanismo médico no merece ser ejercida."
Professor Dr. Rene Favaloro -



GNU Health: Functional areas



Person and Community

Person, family, Socioeconomics, lifestyle ...

Domiciliary Units, Operational Areas, Institutions,...

Patient

EMR, Evaluations, Genetics, prescriptions, History, surgeries...

Health Institution Management

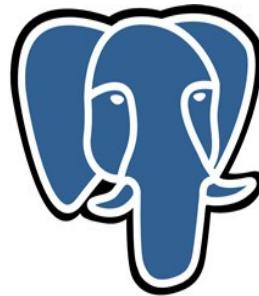
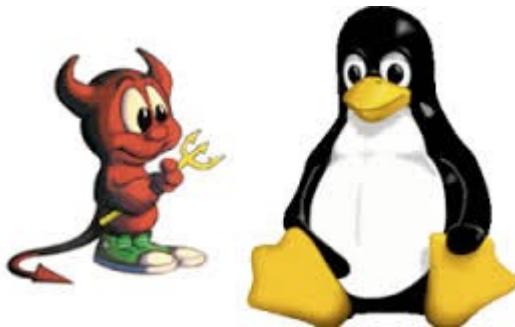
Hospitalizations, Finances, Laboratory, stock, HR, ..

Health Authorities / MoH

Health campaigns, epidemiology, ...

GNU Health is free/libre software

Freedom to run , adapt, improve and redistribute



PostgreSQL



The Community

Who is ‘The Community’?

Foundation

Makers

Users



The easy part - Foundation

Remember the ‘Free Software’ slide?

GNU Health builds on top of

- Python 3
- PostgreSQL
- Tryton
- Flask

...and runs on free systems like FreeBSD or GNU/Linux

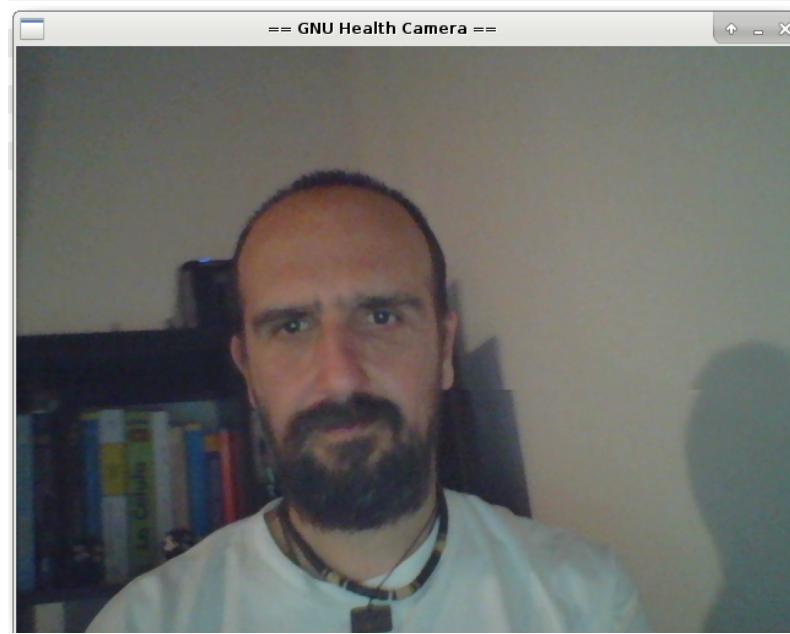
And who did the job?

For the most part:

Dr. Luis Falcon

Software Engineer and

Medical Doctor



(you will meet him in the next presentation)

The Users

The difficult part - Users

The issue with Free Software Projects

We dont know our Users!

(at least for the most part)

Users: Academia



United Nations University, Kuala Lumpur, Malasia

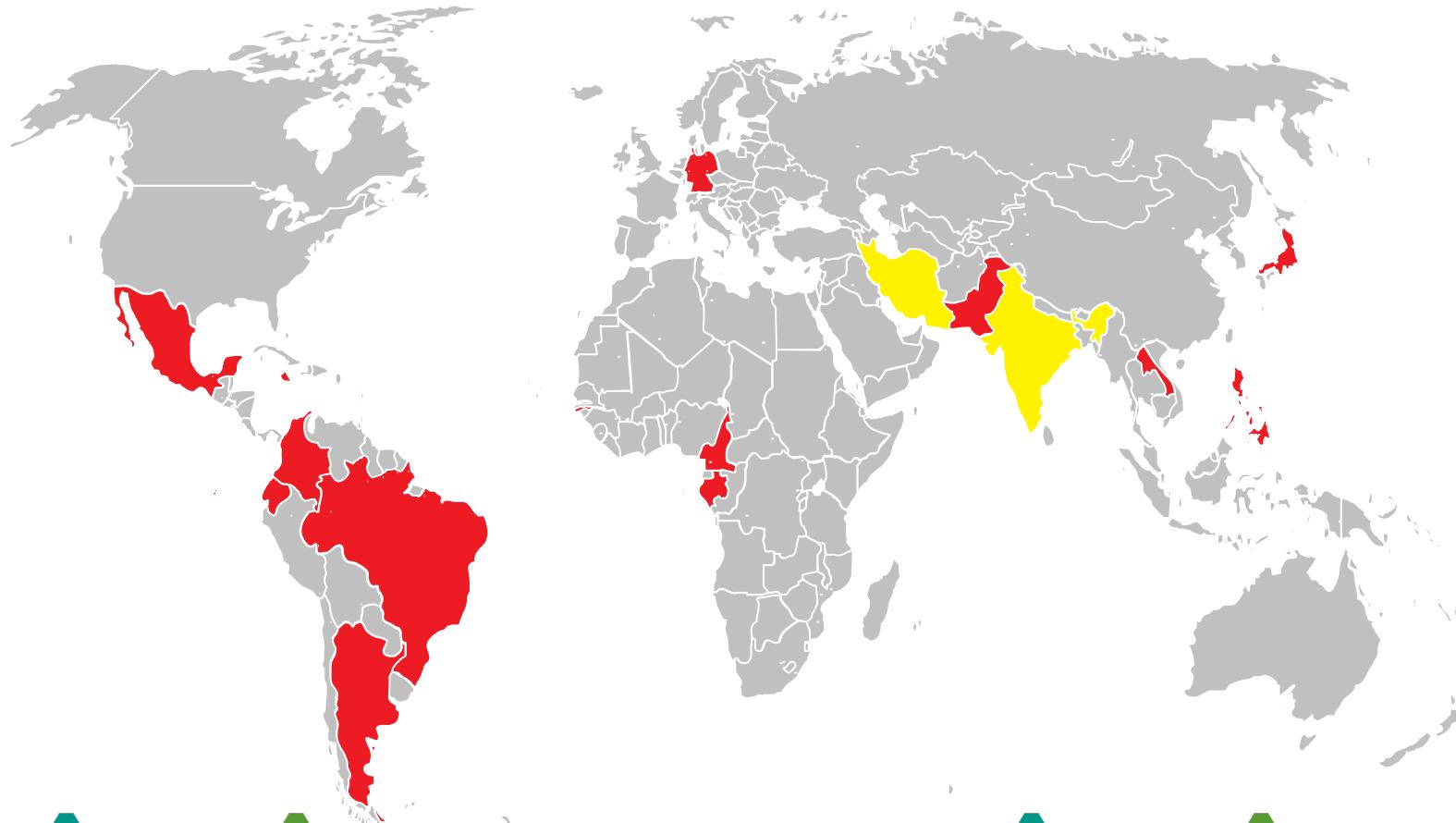


University of Entre Ríos, Argentina

Users: Academia



Users: Known implementations



Argentina Public Health System



Argentina Public Health System

Province Entre Ríos

Since 2012, 8+ installations

Primary Care/Day Care/Hospital

Results

.88% of users said they use it "Always" and 12% "Almost always".

.71% said that the use of the system eased their work and in one case made it more difficult.

.100% of the respondents stated that the system allows them to register and store the necessary information for their activity in the Hospital.

.75% of respondents mention that the system contributes to improve the quality of patient care



Daycare for homeless, refugees and persons without health insurance, Germany

Runs GNU Health since 2017 (migrated from openEMR)

Daycare center

4 nurses, 8 doctors

Monthly event with meals, medical and consulting services (debt, drug, etc)

40-80 visitors per event, 10-15 asking for med care

Budget: 0



Sharab Medical Center Gambia

Runs GNU Health since 2016

14 beds

40 professionals

40 patients per day

Moved from GH 2.8 (Ubuntu)
to 3.2 on openSUSE

<http://www.sharabclinic.com/>



Bafia District Hospital Cameroon

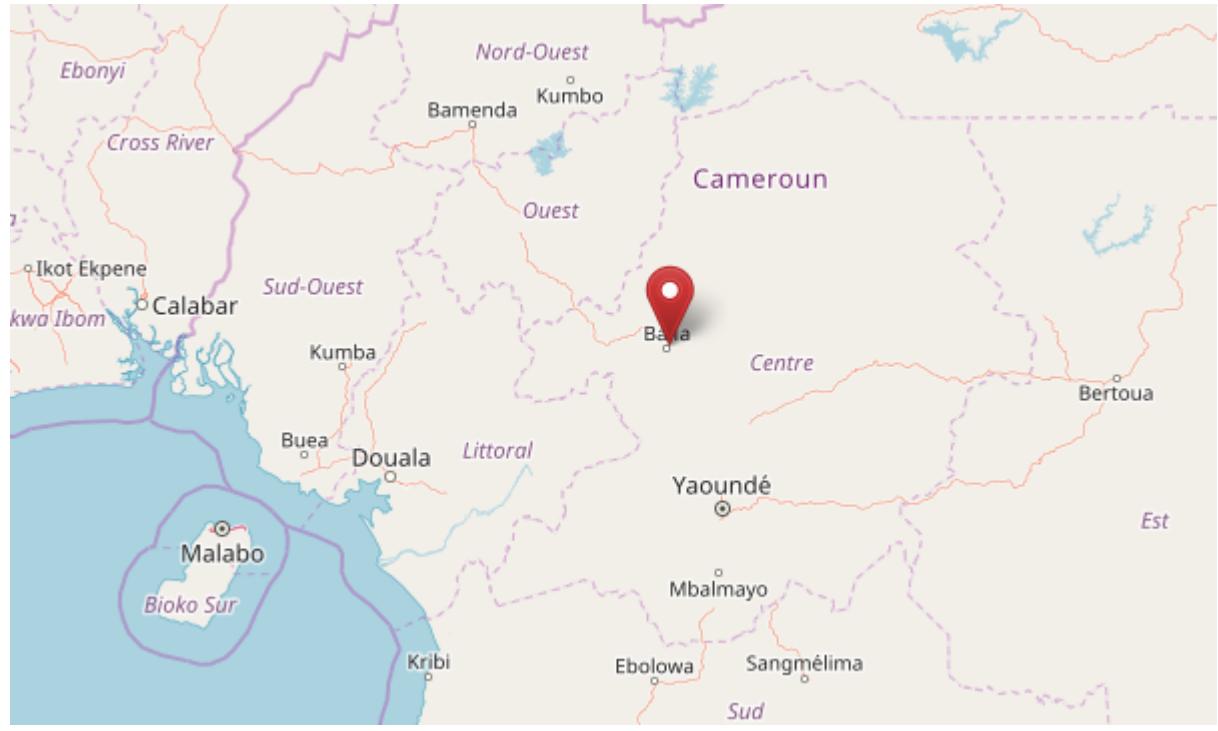
GNU Health since 2018

170 beds

110 professionals

50-100 patients per day

3 month prep &
2 month implementation



Bafia District Hospital Cameroon

Project in partnership with
WHO and MoH Cameroon

Challenges:

- Infrastructure
(Regular power cuts)
- low computer literacy



Dr. Akbar Niazi Teaching Hospital, Islamabad, Pakistan

Runs GNU Health since 2016

500 beds

150 professionals

250 patients per day

Budget: 0 (Inhouse team)

www.danthospital.com



Red Cross Mexico



Runs GNU Health since 2017 in 3 locations in Veracruz, Boca del Rio

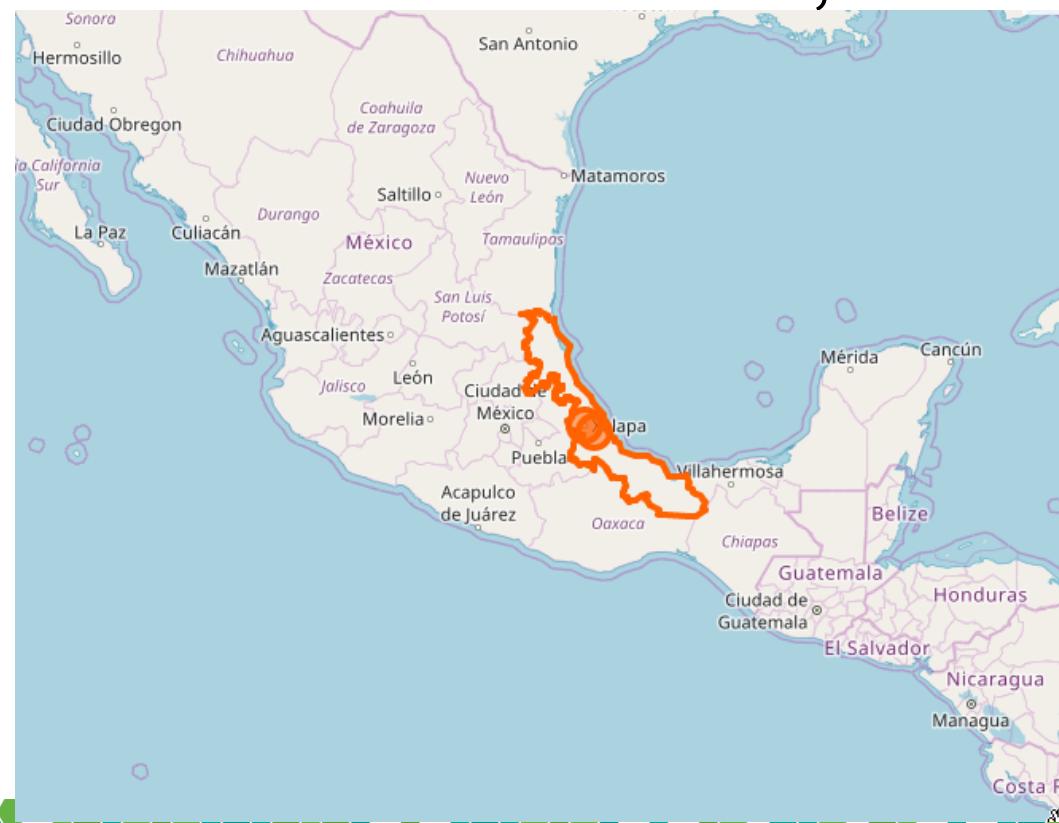
24 consulting rooms

36 beds

14 ambulances

340 professionals

850 patients per day



Red Cross Mexico - before

- Accounting system does not comply all the needs
 - No system for inventory control
 - Only physical medical records
 - Hospitalization system does not comply all the needs
 - Good system for emergency calls control but, completely independent to the others
 - ...and some more issues
- • Manual work
- • No control
- • Very difficult to locate clinical history for patients
- • Manual work
- • Manual work to transfer information for accounting and some statistics

Red Cross Mexico - after

Consulting appointments

Accounting

Electronic Medical Records

Inventory Control

Purchase

Imagenology

Pharmacy (POS)

Laboratory

Hospitalizations

Cash collection



Emergencies

Payments



Jamaica Public Health System – 350+ locations

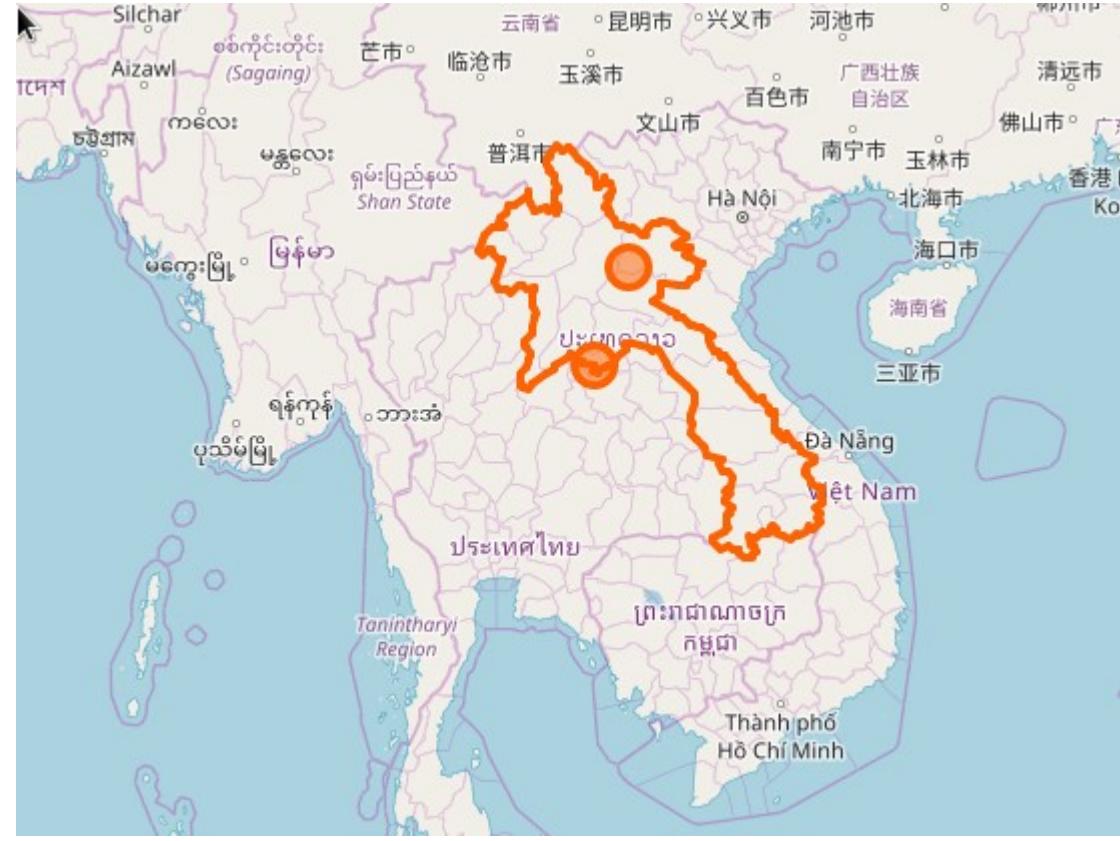


Center for Medical Rehabilitation (CMR) Laos

Runs GNU Health since 2014

Service for amputees and
rehabilitation

Module for health disability

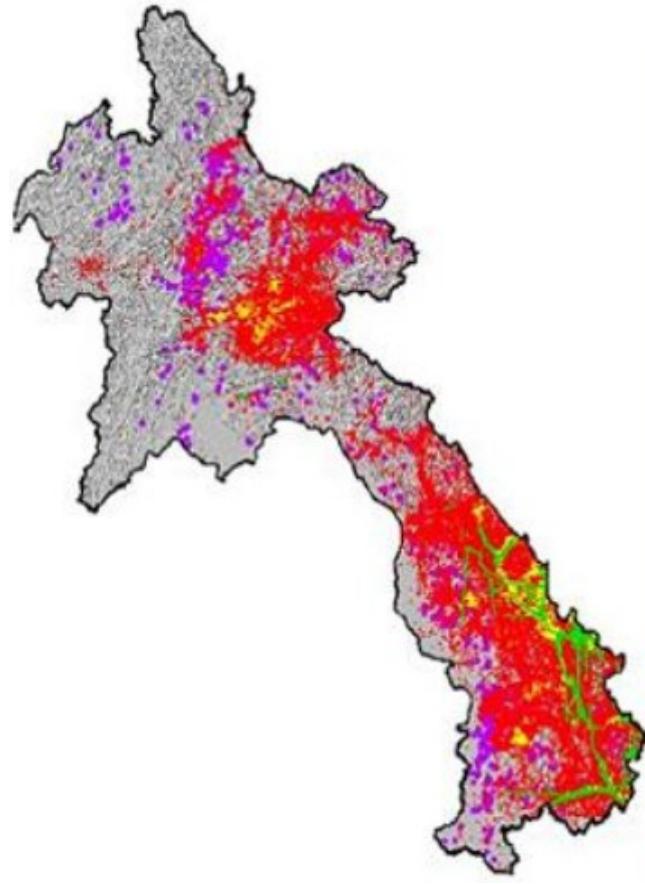


Center for Medical Rehabilitation (CMR) Laos

Runs GNU Health since 2014

Service for amputees and
rehabilitation

Module for health disability



Center for Medical Rehabilitation (CMR) Laos



Mahosot Hospital Vientiane, Laos

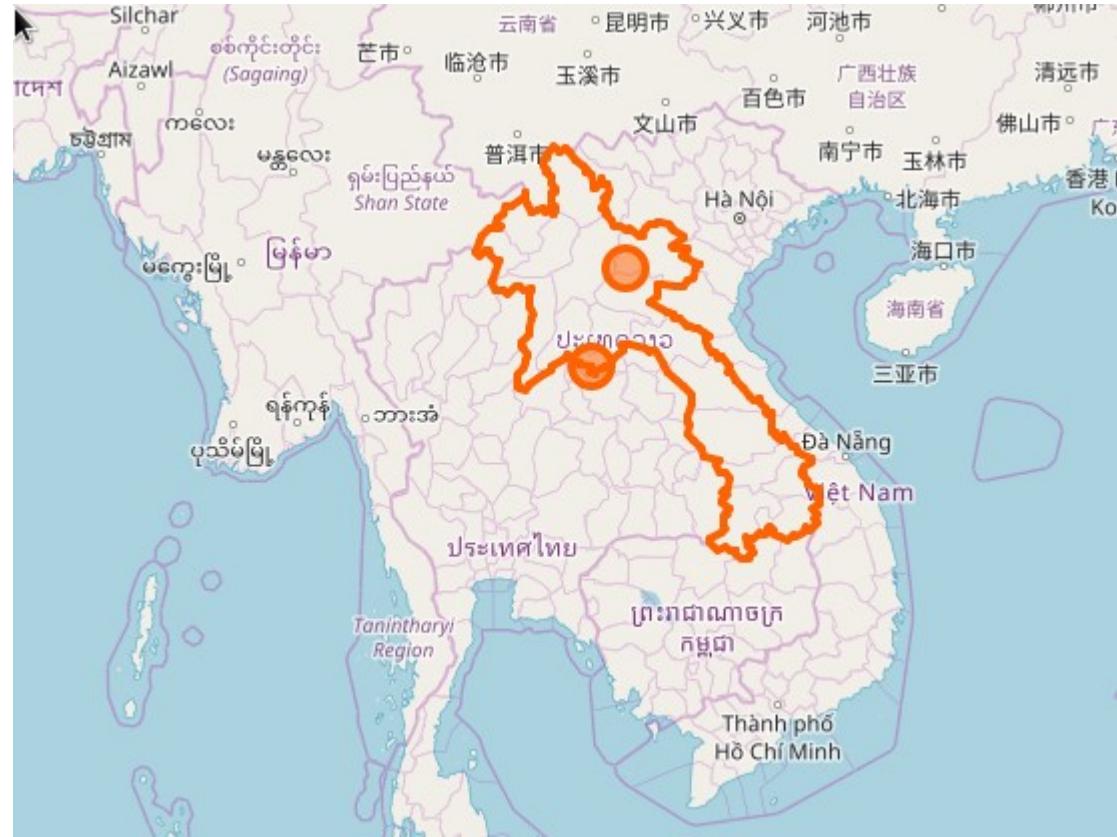
Runs GNU Health since 2016

Old & complex building, partly
since french colony

600 beds

Completed translation to Lao
language

Introduced by same team as
CMR





All India Institute of Medical Sciences
chooses **GNU Health**.

All India Institute of Medical Science

GNU Health implementation in progress

- Largest public hospital in Asia
- 3.500 beds
- 3.5 Mio examinations/year
- 70 FTE internal IT staff
- openSUSE as backbone

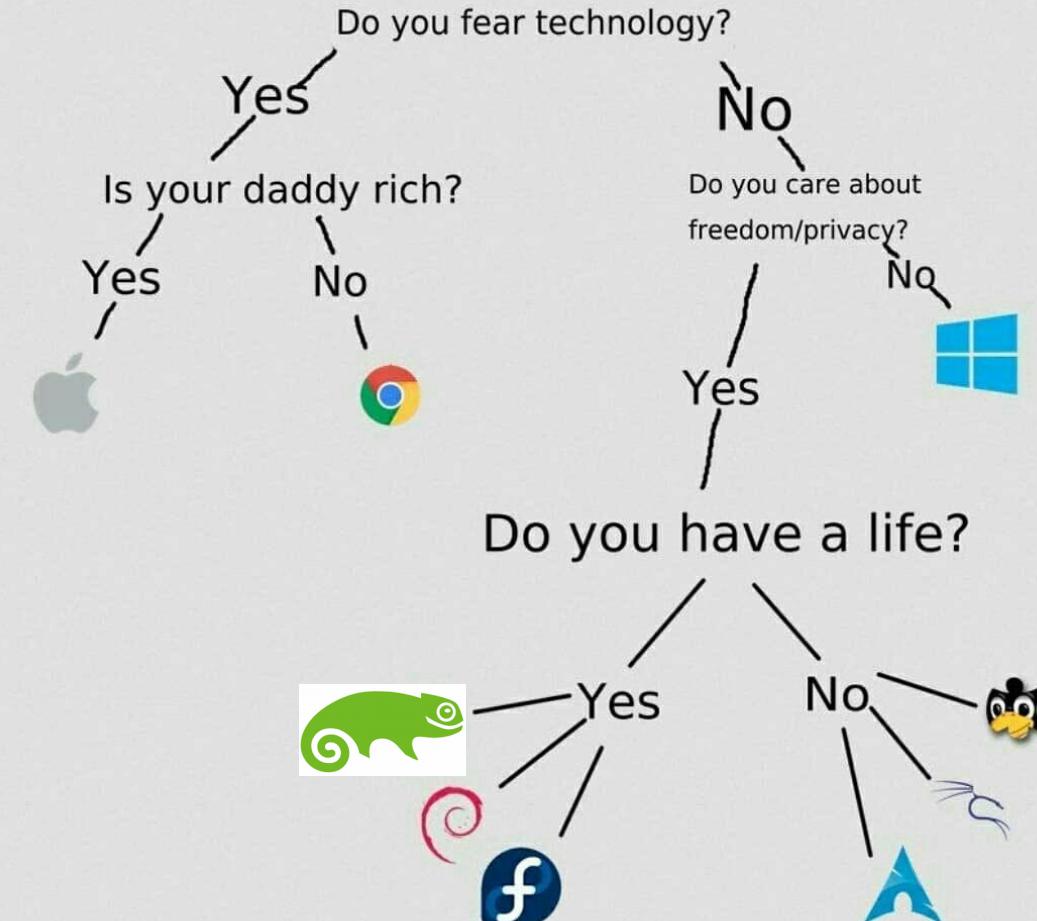


A white spot...



The Makers

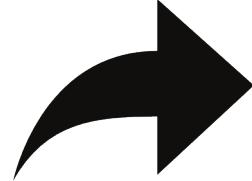
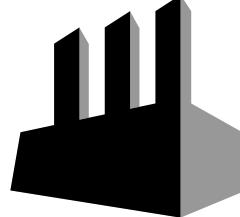
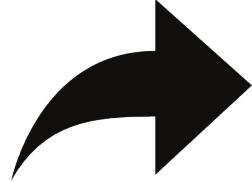
Choosing an OS



The Makers – turning source code into packages

Software Installation largest challenge for non-technical users

010011



The Makers

Remember the ‘Free Software’ slide?

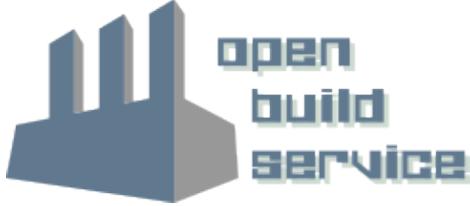
GNU Health builds on top of

- Python 3
- PostgreSQL
- mongoDB
- Tryton
- Flask/Gunicorn

The Makers – that’s YOU!



GNU Health on openSUSE - OBS



 Downloads Support Community Development Watchlist

openSUSE Build Service > Projects > Application:ERP:GNUHealth:Factory > Overview DocB | Tasks | Home Project | Logout

Overview Repositories Monitor Requests Users Subprojects Advanced

GNU Health development branch for submission to Factory

No description set

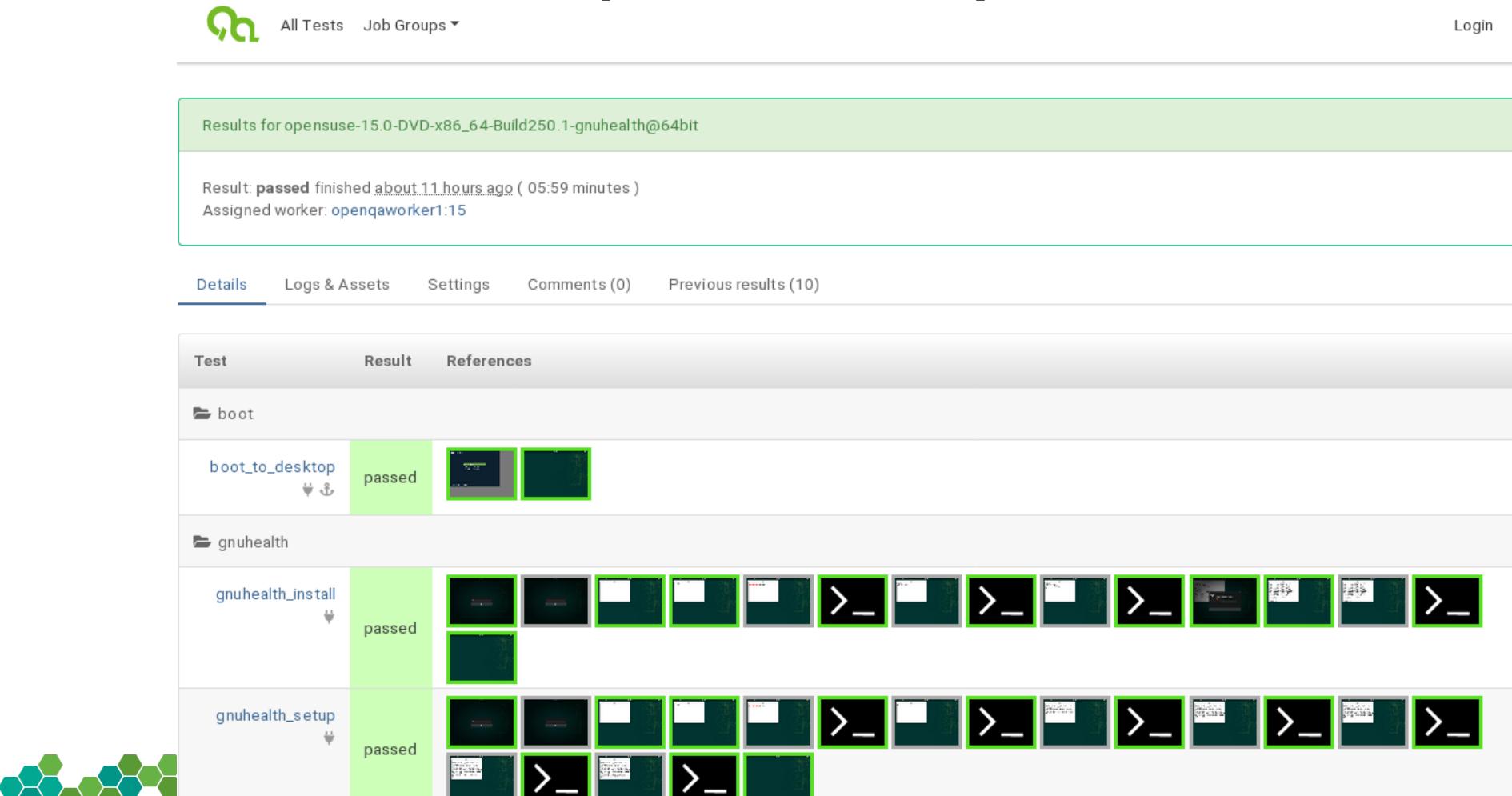
 Create patchinfo  GPG Key / SSL Certificate  Edit description  Delete project

Packages (23)	
Show	entries
25	▼
Search: <input type="text"/>	
Name	Changed
gnuhealth	3 months ago
gnuhealth-client	2 months ago
proteus	2 days ago
python-H7apy	3 months ago
python-PyWebDAV3-GNUHealth	3 months ago
test-gnuhealth	3 months ago
tryton	2 days ago
trytond	2 days ago
trytond_account	2 days ago
trytond_account_invoice	2 days ago
trytond_account_invoice_stock	3 months ago
trytond_account_product	3 months ago
trytond_calendar	3 months ago
trytond_company	3 months ago
trytond_country	3 months ago
trytond_currency	2 days ago
trytond_invoice	3 months ago
trytond_partner	3 months ago
trytond_product	3 months ago
trytond_purchase_order	3 months ago
trytond_sale_order	3 months ago
trytond_stock_move	3 months ago
trytond_stock_valuation	3 months ago
trytond_subaccount	3 months ago
trytond_supplier	3 months ago
trytond_uom	3 months ago
trytond_user	3 months ago

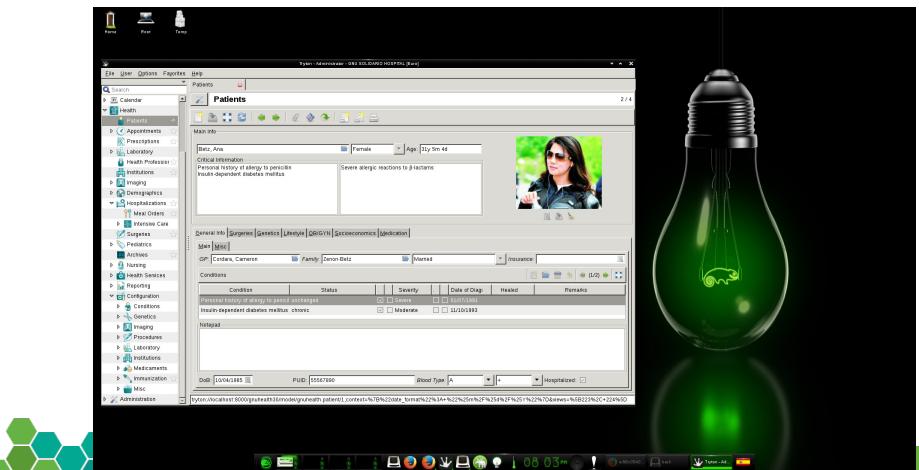
Build Results

openSUSE_Leap_15.0	 x86_64	succeeded: 23	
openSUSE_Tum	 i586	succeeded: 23	
bleweed	 x86_64	succeeded: 23	

GNU Health on openSUSE - openQA



GNU Health & Raspberry Pi



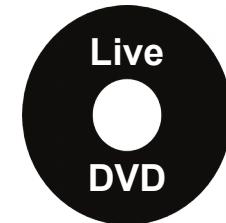
GNU Health on openSUSE

Great support from openSUSE community

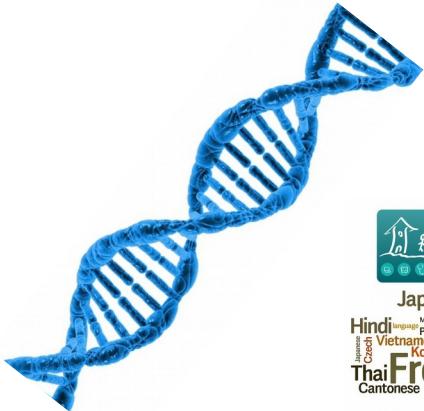
- openSUSE ships GNU Health in Leap and Tumbleweed
- Tested with openQA
- 1-click install & cookbook for setup
- Cross-Plattform support (x86 / ARM)
- Sponsor of GNUHealthCon!



We lost a friend.....



Looking for some more cool stuff to work on?



Summary – What makes a great community?

Free Software is not only Take, but as well Give

Take the package and hide?

→ get involved

→ share experience

→ stay friendly

→ be helpful

Community involves humans

**Treat them with respect
otherwise they may get strange**

See you at GNU Health Con 2018



License

This slide deck is licensed under the Creative Commons Attribution-ShareAlike 4.0 International license. It can be shared and adapted for any purpose (even commercially) as long as Attribution is given and any derivative work is distributed under the same license.

Details can be found at <https://creativecommons.org/licenses/by-sa/4.0/>

General Disclaimer

This document is not to be construed as a promise by any participating organisation to develop, deliver, or market a product. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions. openSUSE makes no representations or warranties with respect to the contents of this document, and specifically disclaims any express or implied warranties of merchantability or fitness for any particular purpose. The development, release, and timing of features or functionality described for openSUSE products remains at the sole discretion of openSUSE. Further, openSUSE reserves the right to revise this document and to make changes to its content, at any time, without obligation to notify any person or entity of such revisions or changes. All openSUSE marks referenced in this presentation are trademarks or registered trademarks of SUSE LLC, in the United States and other countries. All third-party trademarks are the property of their respective owners.

Credits:

Maps: OpenStreetMap.org

Some slides and pictures adapted from Luis Falcon

Lao heat map by Mr. Somnuk Vorasarn (HealthCon2016)

Credits

Template

Richard Brown

rbrown@opensuse.org

Design & Inspiration

openSUSE Design Team

<http://opensuse.github.io/branding-guidelines/>