MyGNUHealth PHR: A technical introduction

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Agenda

- About GNU Health
  - History of the project & community
- The GH ecosystem components
  - The GNU Health Federation and its components
- MyGNUHealth
  - The GH Personal Health Record
- MyGNUHealth technical infrastructure
  - Framework and integration w/ GH Federation
- Q&A
  - Questions and answers
About me

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Education

- Computer Scientist
- Physician
- Genomics & Medical Genetics

Activism

- Social Medicine
- Animal Rights
- Libre Software
History of GNUHealth and Community

Santiago del Estero, Argentina, 2006
• **GNU Solidario**
  - Is the NGO behind GNUHealth
  - Non-for-profit organization
  - Works globally
  - Focused on Social Medicine

• **Official GNU Project**
  - GNU Health is an official GNU project
  - Hosted at GNU Savannah
  - Many mirrors around the World
  - International community
GNUHealth around the world
Social Medicine & Health Informatics
Official GNU Package

- Official GNU project
- Open Documentation
- Relies on free technology
- Friendly community
GNU Health ecosystem components

- MyGNUHealth
- GNUHealth Federation
- GNUHealth EMBEDDED
- GNUHealth LABORATORY/LIMS
- GNUHealth BIOINFORMATICS
- GNUHealth Template System (TFS)
GNUHealth HMIS component
MyGNUHealth: The Libre Personal Health Record

Empowering the person to be an active member in the System of Health
Python 3 is the main language used in most of GNU Health ecosystem components. Most packages can be found at the Python Package Index (PyPi).
MyGNU Health is a Python3 application that uses the Qt framework.

Qt for Python (PySide2)

Qt Headers → CLang → Qt for Python (PySide2)

Typesystem → Shiboken → CPython

Source: https://doc.qt.io/qtforpython/shiboken2/shibokengenerator.html
Kirigami is a KDE framework
Built on top of the QML language
Set of QtQuick components to create convergent applications
MyGNUHealth is convergent. It adapts very well to desktops and mobile devices.
Qt for Python (PySide2)

```python
#!/usr/bin/env python3
#
# MyGNUHealth: Mobile and Desktop PHR node for GNU Health
# MyGNUHealth is part of the GNU Health project
#
import sys
import os

from PySide2.QtWidgets import QApplication
from PySide2.QtCore import QObject, QUrl, Signal, Slot
from PySide2.QtXml import QXmlApplicationEngine, qmlRegisterType

from mygnuhealth.myghconf import verify_installation_status
import dateutil.parser

# Common methods
# Use this method to be compatible with Python 3.6
```
MyGNUHealth running on the PinePhone

Current development environment:

- Hardware: PinePhone ("Braveheart")
- OS: KDE Neon (https://neon.kde.org/)
- KDE Plasma mobile
- Qt5
- Kirigami (set of QtQuick components)
MyGNU Health uses TinyDB for storage

- Document oriented Database
- JSON encoded
- Python3 compatible
- Platform independent
- Easy to port from one device to another
GH Federation and MyGNUHealth

Nodes

Message Server

Information System

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Coupling with GH Federation

![MyGNUHealth Settings](image1)

![Network Settings](image2)

- **Protocol**: https
- **Host**: federation.gnuhealth.org
- **Port**: 8443
- **Fed. Acct**: Federation ID
- **Password**: Password
- **Sync**
  - Test: Connection
  - Done

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MyGNUHealth nodes in the GH Federation

Highlights

Every person is a node

Realtime update with her health professional

Person is in control of what to share

Decrease the burden in the public health system

The person is now an active member in the public health system
GNUHealth in Medical Genetics and Cancer Research

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Real-time observatory and reporting
MyGNUHealth

Misc

Development hosted at GNU.org
Mercurial (hg)
Savannah for tracking
Release 0.9 Beta in December 2020
Development docs at Wikibooks
GPL v3+
Questions : info@gnuhealth.org

TODO

Packaging
i18n
Testing
Security / Block device encryption / others
Connectivity with Open Hardware devices
Documentation
The GNU Health Federation Community Hub allows developers, health practitioners and research institutions from all over the world to learn, test and develop their nodes & integrate them in the Federated network.