API != REST - PROCMAIL TO THE RESCUE

By HPE DEV Team and HPE CIC Team
Introducing Bruno Cornec

- Software engineering and Unices since 1988:
  - Mostly Configuration Management Systems, Build systems, quality tools, on multiple Unix systems
  - Discovered Open Source & Linux (OSL) & made first contributions in 1993
  - Full time on OSL since 1995, first as HPE reseller then @HPE

- Currently:
  - OSL Technology Strategist in HPE WW Customer Innovation Center, Grenoble, France
  - WW Linux Community Lead for the HPE Open Source Profession
  - Conferences at WW level at LinuxCon, Linux.conf.au (2007, 2013, 2014), Fosdem, RMLL, ...
  - MondoRescue, Project-Builder.org, python-redfish, UUWL and PUSK Project Lead
  - LinuxCOE, mrepo, tellico, rinse, fossology, collectl, Ironic contributor
  - FOSSBazaar/SPDX and OSL Governance enthusiast
  - Mandriva, Mageia, Fedora packager

- And also:
  - Amateur singer (Alto / Tenor), recorder player since 1976 and Choir director since 1987, CD collector (7000+), Concerts, Photography
Introducing Frédéric Passeron

- 20 years @HPE in presales organizations
- Strong focus on solutions (HPSIM, Matrix, HP CloudSystem, Helion Openstack)
- Currently:
  - HPE Dev Experience team Solution Architect
  - Hack Shack Workshop on Demand (WoD) Program Manager
  - Vlub project management
  - Volumio contributor
- And also:
  - High end HI-FI systems fan (see video !)
  - Musical Streamer builder

The Hack Shack@KubeCon

A place for developers to gather
Inviting atmosphere
Informative and fun
Physical now virtual
Workshops
  - Hands-on training
  - On-demand
  - Use of Jupyter notebooks
Challenge
  - Augments workshop material
  - Prizes offered for creativity
Replays
Community
Popular Hack Shack Attack game

It was announced at KubeCon Austin in December 2017
Main goal: “Accelerate Innovation through Sharing, Communicating and Collaborating among members of the developer community”
INFRASTRUCTURE IN PLACE

- HPE OneView Appliances
- Nimble Virtual Arrays
- HA HPE Container Platform MLOPS
- Aruba OVAs
- Redfish/OpenBMC VMs

Jupyterhub Server (postfix + procmail)
A single DL360 Gen10 Server

- 2 student & notebook setup (smtp API)
- 3 appliances setup (ssh+REST API)
- 4 appliances interaction (REST API)
- 5 user info (smtp)
- 6 training (http)
- 7 appliances interaction (REST API)

Registration portal - Netlify

https://notebooks.hpedev.io
A MAIL API, REALLY?

• Not all systems are https reachable (security)
• Mail provides some advantages over https
  - free queuing system
  - Passes complex network setup
• Procmail helps manage API mail requests
  - Easy input filtering
  - Easy parameters management
  - Script called from procmail to perform actions
• Tests are easy to perform

```bash
jupyter@jupyterhub3:~$ jupyter-procmail/scripts$ more ~/.procmailrc
 MAILDIR=$HOME/.mail           # You'd better make sure it exists
 DEFAULT=$MAILDIR/mbox
 LOGFILE=$MAILDIR/from

#:8
#*  ^From.*hpedev.hackshack@hpe.com.*
#  \  defines what will be matched in $MATCH
#  *  Subject:  *CREATE  \([1-9]+\).*
  \
  /home/jupyter/jupyter-procmail/scripts/procmail-action.sh CREATE $MATCH

#:8
#*  ^From.*hpedev.hackshack@hpe.com.*
#  \  defines what will be matched in $MATCH
#  *  Subject:  *CLEANUP  \([1-9]+\).*
  \
  /home/jupyter/jupyter-procmail/scripts/procmail-action.sh CLEANUP $MATCH

#:8
#*  ^From.*hpedev.hackshack@hpe.com.*
#  \  defines what will be matched in $MATCH
#  *  Subject:  *RESET  \([1-9]+\).*
  \
  /home/jupyter/jupyter-procmail/scripts/procmail-action.sh RESET $MATCH

jupyter@jupyterhub3:~$ jupyter-procmail/scripts$ . /test-action.sh
Syntax: test-action.sh <CREATE|CLEANUP|RESET> WKSHP [MIN[,MAX]]
ACTION is mandatory
jupyter@jupyterhub3:~$ jupyter-procmail/scripts$ 
```
ANSIBLE + NOTEBOOKS

- Ansible is used for
  - Platform installation
  - Platform conformity and convergence
  - Student setup including notebooks instantiation

- Usage of variables to support multi-site
  - Sandbox, staging, production, dev, ...

- Usage of Jinja2 features to individualize notebooks
IT'S SHOW TIME FOLKS!
THERE'S MORE AND WHAT'S NEXT?

- Everything under private git
- 10 Workshops in production
- Built on Ubuntu 20.04 + Jupyter kernels
  - python, bash, powershell, go, rust, java, ansible
- Future steps:
  - 3 more workshops per month
  - Improved CI/CD (automated tests per commit)
  - CentOS port
  - Docker spawner for Jupyter
  - Open Sourcing
BUILD | COMMUNICATE | COLLABORATE

hpedev.io
hpedev.slack.com
Monthly Newsletter
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Yammer Group (Internal)
Yammer Group (Partner)
Workshops-on-Demand
THANK YOU

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