The Distro as a Middleman – HPE Linux Two Years Later

Tim Potter <tpot@hpe.com>
Overview

Part 1 – What is HPE Linux?
Part 2 – What we did and lessons learned
Part 3 – Exploring the idea of distro as a middleman
What is HPE Linux?
What is HPE Linux? (2015)

– Internal Linux distribution based on Debian Jessie
  – Was called hLinux pre HPI/HPE split

– One (internal) customer, HP Helion, https://www.hpe.com/helion

– “Foreign packages” concept used to manage non-Jessie software
  – Modified for specific needs
  – Not found in Debian
  – The goal is to get into Debian wherever possible

– Kernel
  – 3.14 and 4.1 longterm kernels
  – Driver enhancements with external partners
What is HPE Linux? (2016)

– Internal Linux distribution based on Debian Jessie
  – Now a HPE Technology Standard

– Many customers in various stages of product development

– “Foreign packages” concept used to manage non-Jessie software
  – Some vendor packages replaced by Debian main versions
  – Jessie backports now used for some foreign packages
  – Still keen on minimising the diff between HPE Linux and Jessie

– Kernel
  – 4.4 kernel
  – Driver enhancements with external partners
HPE Linux is now a HPE Technology Standard

- HPE Linux is now one of three global technology standards within the company
  - Announced in December 2015 by CTO Martin Fink
  - A shared Linux distribution across the company for embedded use (not a desktop)
  - A TS allows intra-company innovation and economies of scale

- What does this mean?
  - More investment in Debian
  - More Debian developers and users (engineers and customers)
  - More commercial products powered by Debian

- Some products/customers/markets may require a non-HPE Linux solution
  - Bummer
What we did and lessons learnt

• Product achievements
• Community achievements
• Process achievements
Product Achievements

– More successful releases of HPE Helion based on HPE Linux
  – HPE Helion OpenStack 2.0, 2.1 and 3.0

– Many new products under development using HPE Linux
  – Lots of interest in Docker and Kubernetes as a development and distribution framework

– HPE Linux as a Technology Standard in the company

– Lessons
  – Treat your reference customers very well!
  – Delivering enterprise software on Debian is definitely possible
  – Not too much push-back switching OS’s if it Just Works
  – Centralization is essential
Community Achievements

– Assisted in packaging Elasticsearch for Debian
  – Free replacement for vendor packaging

– Assisted in packaging Docker 1.11.0 for Debian
  – Free replacement for vendor packaging

– Contributions to uEFI Secure Boot
  – Shipping Secure Boot to customers in kernel 4.4

– Several full rebuilds of arm64 archive by tbm

– Lessons
  – Working with the community takes a lot of time
  – Hard work getting people to start packaging and becoming DM/DD
Process Improvements

– Success has not lead to many more resources, only more work
  – Constantly need to do more with less

– Implementation of “Baseline Release” process

– Package acceptance tests

– Security analysis tools

– Fledgling CI/CD system for bare-metal and VM testing

– Lessons
  – Technology is easy, getting human processes working is hard
  – Process improvement is continuous and never ending
Distro as a middleman

- What is a middleman?
- Examples of middlemen
What is a Middleman?

– A middleman sits in between two parties in a transaction

– A middleman provides value to buyers and sellers

– Middlemen aren’t necessarily bad

– Middlemen are OK if they add more value than they take
Examples of middlemen
Examples of middlemen
Examples of middlemen

- eBay
- Facebook
Examples of middlemen
Examples of middlemen
The Debian distro as a middleman

– Who are the parties involved?
  – Users
  – Software
  – Debian Developers
  – Upstream developers

– What value does Debian add for each party above?
  – Users: get access to a lot of software
  – Software: get access to many users
  – DDs: community
  – Upstream: well-integrated environment, access to users
The HPE Linux distro as a middleman

– What value does HPE Linux add inside HPE?

– Centralised point for communications

– Bears risk for technical and legal issues

– Sharing large costs (and benefits!) amongst all users

– Enforce standards

– Insulate users from having to make hard/unpopular decisions or requests
What value does Debian add to $YOUR_ORGANISATION?

– What happens when
  – s/HPE Linux/Debian/
  – s/HPE/$YOUR_ORGANISATION/

– How can you sell Debian in $YOUR_ORGANISATION with middleman analogy?

– The middleman analogy is powerful and is useful for communicating the costs and benefits of Debian.
The Middleman Economy

– Ideas in this talk taken from “The Middleman Economy”, by Marina Krakovsky

– Breaks down middlemen into six categories

1. The Bridge
2. The Certifier
3. The Enforcer
4. The Risk Bearer
5. The Concierge
6. The Insulator
Thank you
Tim Potter <tpot@hpe.com>