

How & Why We Embraced Open-Source 20 years ago And What We Learned!!

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@Amitinator

Pop Quiz #1

**Which company has been
“doing” open source longer?**

Clarification on Pop Quiz #1:

**“Doing” == Consuming +
Solutionizing + Developing +
Community Building**

- a) Microsoft
- b) Google
- c) Amazon
- d) Rackspace
- e) Canonical
- f) Dell EMC

HINT: The company has been doing it longer than LF has existed 😊

Pop Quiz #2

**Who developed the following
open-source software
projects?**



EdgeX
Foundry

REX-Ray

DKMS

biosdevname

firmware-
tools

efibootmgr

Dell EMC

About Me

Education

- BS Chemical Engineering (CIT)
- MS Computer Engineering (WVU) → Discovered Linux in 1998

Work

- 18 years at Dell EMC
- Linux Technologist + Open Source Evangelist
- Data Center/Cloud product development - Appliances/Servers/Software Defined X
- Consumer product development - PCs/Workstations/Tablets/Chromebooks/Gaming

Life

- Non-judgmental “Born Again” Vegetarian 😊
- Unofficial spokesman for the city tagged “Keep Austin Weird”
- Snowboarding, Beach Volleyball and multi-discipline endurance sports (IM 140.6)
- Decentralization, Blockchain and Crypto Currency Hobbyist

Dell Technologies family...



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Where did it all start?

PowerEdge Server

First Server OEM Vendor to offer Linux pre-installed

Apr 1999 Press Release:

Dell to offer Workstation, Server and Business Desktop products pre-installed and certified with RHL 6.0 on specific "Red Hat Ready" certified configurations

Motivation

- In response to increasing demand from users for Linux preinstalled and certified systems
- Visionary Founder & CEO who often thinks “outside of the box”
- No *NIX baggage
- Passionate and competent team of Linux engineers

Subsequent milestones for Servers

- SuSE SLES factory-installed
- First OEM to provide support for EM64T (AMD64)
- RHEV
- Ubuntu LTS Certified and recent full OEM support
- Linux based Solutions
 - HPC (contribute to openHPC)
 - Database (Oracle on Oracle Linux)
 - IaaS (Open Stack with Ceph)
 - SAP

Server Team Charter

- Linux “just works”
- Work early; Work often; Work upstream
- Every device driver baked into the upstream Linux kernel
- Best effort support for other community distros

Server Open-Source Dev Projects

- DKMS
- biosdevname
- libsmbios
- firmware-tools
- efibootmgr
- redfish-ansible-modules (for OOB mgmt.)
- Cockpit modules (for HW inventory and others)
- Many more...

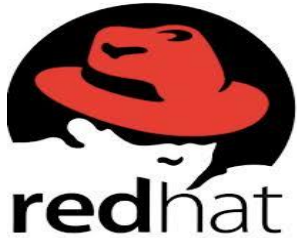
Dell EMC Networking Open-Source Projects

- Open Networking OS/Virtualization/SDN Fabrics:
 - Cumulus Linux
 - Big Switch Networks “Switch Light” OS1 (based on ONL)
 - Pluribus Netvisor Open Network Edition(ONE) Network OS
 - IPinfusion OcNOS
 - Midokura MidoNet
- Participate actively in various LF “Open Source Networking” initiatives (Open Switch, ONOS, OvS, OPNFV, ODL etc.)

Dell Client Open-Source Projects



- First to market with pre-installed Linux on PCs (2007)
- Project Sputnik “Developer Edition” XPS Laptops (2012-present)
- First to market with UEFI, Secure Boot, LVFS (native capsule firmware updates using fwupdate)
- Subsystems like power management much improved due to work done in conjunction with CPU, GFx, WiFi vendors in the open



- RHEL certified across Precision line of Workstations Desktop / Mobile product line



- EdgeX Foundry™ is a vendor-neutral open source project building a common open framework for IoT edge computing.

Heritage EMC Open-Source Projects

- **REX-Ray** – A storage plugin to CSI that provides a vendor agnostic storage orchestration engine that solves the persistent storage challenge for cloud native workloads that are built using Docker containers, Kubernetes and Mesos.
- **Rack HD** - A platform for vendor agnostic management and orchestration of physical hardware
- **CoprHD** - An open source software defined storage controller and API platform.
- **Unik** - A tool for compiling application sources into unikernels
- Multiple Docker/Ansible/Puppet modules for all the Storage products

What did we learn? 1/8

Get a Champion (be a champion)

Get Top Down “Buy In”

You need someone high up to go to bat for you

You must be ever vigilant

Have a clear open source business model

Have a strategy and goal in place

Get the business folks involved early!

Have an OSPO!

Agree upon licensing terms

Make Open Source Licensing process a
streamlined process

Listen to your customers

Look for problems to be solved and not some “cool” technology that is s soln. waiting for a problem

What did we learn? 5/8

Develop in the open

Upstream or GitHub wherever appropriate

Designate a Community Manager

Focus on community building. Be transparent.

What did we learn? 7/8

Decentralize governance

Be the hub, encourage spokes. Encourage Contributors. Only way to scale.

Empower Developers with the right tools

Code audit, compliance, vulnerability checkers. Get a consulting service like LF if needed.

Thank You!

Reference URLs:

- <https://github.com/dell>
- <https://github.com/thecodeteam>
- <https://opensource.dell.com>
- <https://linux.dell.com/>
- <http://lists.us.dell.com/mailman/listinfo>
- <https://www.dell.com/developers>
- <https://blog.thecodeteam.com/2018/01/17/open-source-code-story/>

PS: We are hiring!!

- Server Linux Team:
<https://jobs.delltechnologies.com/job/round-rock/linux-open-source-software-senior-engineer/5787/9012216>
- Many more on <https://jobs.dell.com/>

A large, stylized white letter 'S' is positioned on the left side of the image. The interior of the 'S' is filled with a circular cutout of a nature scene, showing a forest of evergreen trees in the upper part and a rocky, mountainous landscape with a small body of water in the lower part. The background of the entire image is a solid blue color with a subtle gradient.

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