OPENFABRICS ALLIANCE

Issues update to SUSE Linux Enterprise Distribution (SLES) with regards to OFS

#OFADevWorkshop

ANNUAL INTERNATIONAL OPENFABRICS SOFTWARE DEVELOPERS' WORKSHOP

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SUSE®
We adapt. You succeed.

Agenda

- Explain SUSE and Our Enterprise Product
- Describe Our Development Process
- How You Can Participate

What is SUSE

- “System und Software Entwerklung”
  - Started in 1992 by three Mathematicians and a Software Engineer
- Two Linux Distributions:
  - openSUSE : Community-supported free distribution
  - SLES : SUSE-supported Enterprise Distribution
- Several Products
  - SUSE Cloud – OpenStack based cloud platform
  - SUSE Manager – Linux Server Management
  - SUSE Studio – System Image Build Tools
  - Open Build Service – Multi-architecture build and packaging system

openSUSE : The Free SUSE Distribution

- Community Driven
  - Five member board of directors, but does not direct engineering
- All work done in the Open Build Service
  - A Revision Control System that builds your binary packages
  - Any user can easily branch a package and make changes
  - Changes can be “submitted” back to parent for acceptance
  - Builds for multiple distribution
    - SLES, openSUSE, RHEL, Fedora, Arch, Scientific, CentOS, Debian
  - Final binary package available from public repository
- Not official supported by SUSE

SLES: SUSE Linux Enterprise Server

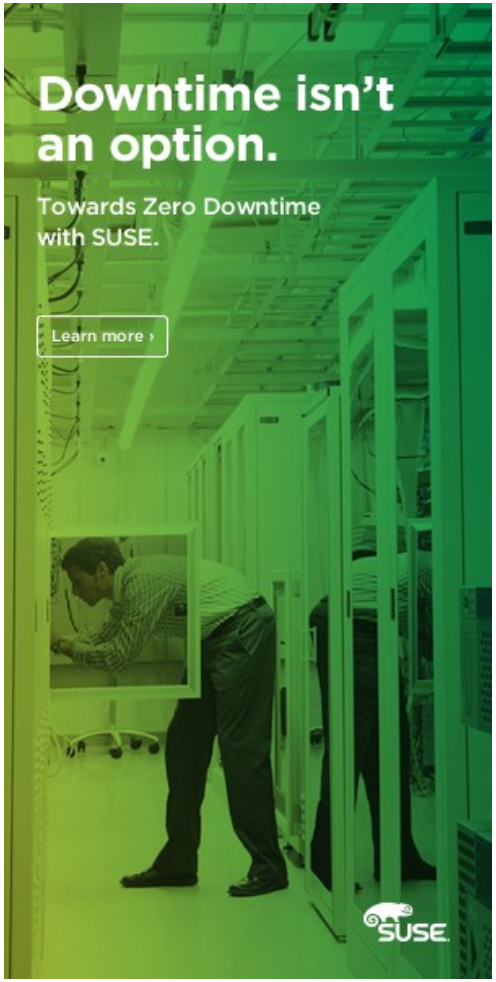
- Originally created in 2000 for IBM S/390
  - Intel first supported in 2001
- Based heavily on innovation found in openSUSE
- Mature and Stable
  - Not easy to make non-upstream changes
  - Rigorous feature-vetting process for each major and minor release
  - Close cooperation with partners to properly backport features as necessary
- Major Security Updates Happen Here, First
  - openSUSE follows soon after

SLES Kernel Build Process

- Kernel Source Maintained in GIT Repository
  - Separate repository for openSUSE and SLES kernels
  - Base Linux kernel with many patches applied in order
  - Patch order specified by series.conf file
  - Linux kernel and patches regularly compressed and submitted to build service
- Rigorous Quality Control with Kernel Development
  - Patch headers must be complete with bugzilla references, upstream commit IDs, and include proper Signed-off or Acked-by
  - KABI breaks cause the build to fail and must either be fixed or approved
  - Strict upstream-only policy except in well-defined circumstances

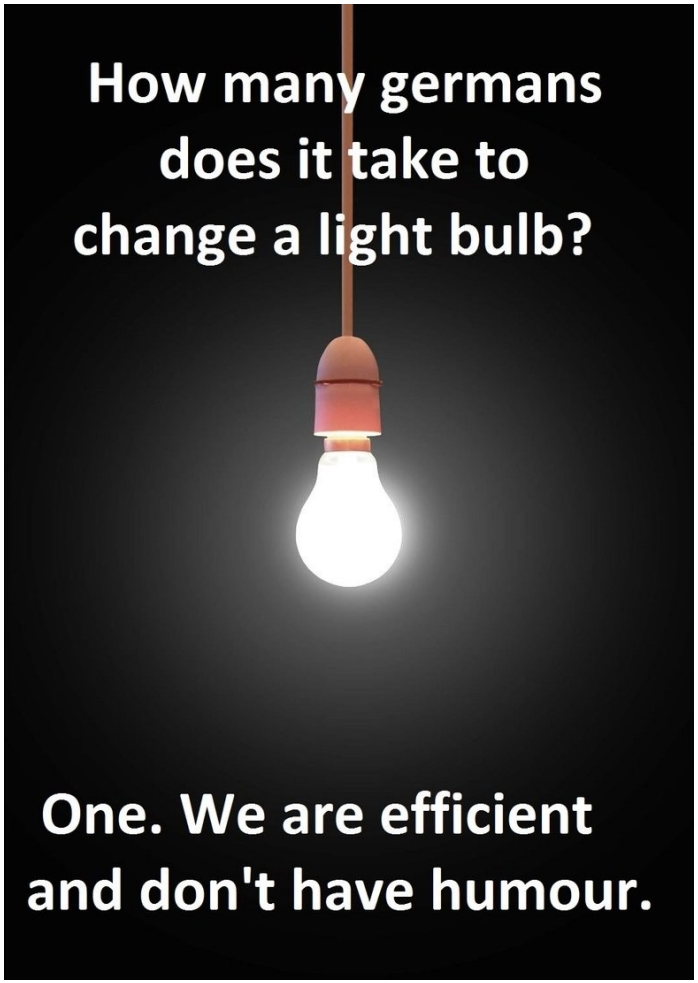
Why All This Effort?

- Stabilität, Stabilität, Stabilität
  - The Enterprise Distribution is expected to not cause problems
  - Our Goal is “Toward Zero Downtime”
  - And, as we all know...



The Real Reason...

- German Engineering is Legendary



Now, How Does This Affect You?

- RDMA and High-Performance Networking is Important to Us
  - Customers are asking for better Infiniband, RoCE, and iWarp integration, and we're a business intent on keeping our customers happy
  - I, personally, feel a sense of satisfaction when a user comes to me and says, “That was easy. Thanks.”
- We Need Your Expertise
  - I don't have the resources (or the ability) to configure a 160k node test system
  - You know best how you want to see this work

What's Been Done Right

- We've see huge improvements in:
  - Upstream kernel submissions
  - Better userspace integration with mainline kernel
  - Patch quality
  - Participation in the feature acceptance process by vendors
  - Communication with the OFA

What Can I Do To Help You?

- The Openfabrics Alliance
  - Provide input through regular participation in working groups
  - Money? That would be nice, wouldn't it?
- The HCA Vendors
  - Provide space for and testing utilization of a hardware lab
  - Help ease your participation in the feature acceptance process
- The RDMA Users
  - Integrate the software you want
  - Make those packages easy to install and easy to use

How you can help us

- The Openfabrics Alliance
  - Continue to encourage upstream participation
  - Find ways to minimize OFED fragmentation
- The HCA Vendors
  - Participate in the feature selection process
  - Help identify specific updates and fixes you want to see in our distribution
- The RDMA Users
  - Make use of the freely available resources that we make available : Open Build Service, Bugzilla, SUSE Studio
  - Tell us your experience – good or bad, and how we can improve

Example: libfabric

- Hosted on Github
  - Easy integration with Open Build Service
  - Just a few minutes to create a package
- Publicly available on x86_64 for SLES 12 and openSUSE 13.2
  - Simply add the appropriate repo to zypper
    - SLES 12
      - http://download.opensuse.org/repositories/home:/jjolly:/rdma/SLE_12/
    - openSUSE 13.2
      - http://download.opensuse.org/repositories/home:/jjolly:/rdma/openSUSE_13.2/
    - Yes, those are colons in the path. Don't judge me.

Talk To Us!

- John Jolly – RDMA Kernel Engineer
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- Philipp Thomas – RDMA Userspace Engineer
  - pth@suse.com
- Ihno Krumreich – TPM OFED and RDMA
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- Philip Oswald – OFED Partner Engineering
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Thank You

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