Introducing the Linux Distributions Working Group

Elizabeth K. Joseph & Sarah Julia Kriesch

@pleia2 & @sjkriesch
To oversee the health and maintenance of the s390x port of various Linux distributions to ensure that the s390x port remains a supported architecture for them all.

To this end, the group will collaborate on shared challenges and successes, work together to nurture new contributors, and make sure they also have the infrastructure they need.
What is a Linux Distribution?

A collection of software, built around the Linux kernel and GNU tools, that comes together to create an operating system that can be used on desktops, servers, embedded devices... mainframes!

Lots of uses means lots of distributions.
How do they usually collaborate?

- Upstream, in software they all include in their distributions
- Shared security disclosure mailing lists
- Knowledge sharing at industry events, SIGs, and WGs
Collaboration System between Enterprise and Community

Enterprise Distributions: Red Hat, SUSE, Ubuntu

Community Distributions: Fedora, openSUSE, Debian

Upstream Development: KVM, GitHub
Why did we need another place to collaborate?

Architectures tend to have SIGs or WGs, and now we do, too!
How the group works

We largely collaborate via mailing list and monthly team meetings to discuss:

- Outstanding issues that may impact others
- Help with infrastructure requirements
- Porting efforts at IBM from the tools teams
Collaboration as a Benefit

- Upstream contributions available for all
- Lowering research & development costs (at IBM and in the community)
- Same solutions for all Linux distributions
- Sharing knowledge between communities
- Increasing innovation (diverse community ideas)
Results of (Cross-)Collaboration

- Better Performance:
  - Cooperative Behavior (one approach for all)
  - Sharing of work and solutions
  - Openness

- Heterogeneity of Participants:
  - Life-giving (maintenance together)
  - Cooperation as interaction
Inclusion

- Bringing communities and companies together
- Do not exclude any Linux distribution!
- Every Linux distribution can join (also Enterprise)
- Creation of open source diversity
- More ideas “how to improve”
At a meeting, Sarah Julia Kriesch of openSUSE brought up a build issue, Dan Horák of Fedora has a patch!

- Remote desktop xrdp client isn't building on openSUSE: https://build.opensuse.org/package/live_build_log/openSUSE:Factory:zSystems/xrdp/standard/s390x (the server is fine, which is the more common use case)
  - Ulrich checked - upstream claims to support it, a patch went in in March 2021
  - FYI Fedora patch: https://src.fedoraproject.org/rpms/xrdp/blob/rawhide/f/xrdp-0.9.16-arch.patch
Success!

Dan Horák of Fedora brings an issue with LDC to the group, and Ulrich of the tools team at IBM starts looking into it.

Ulrich Weigand wrote:

> seems the D language becomes a necessity in the Linux ecosystem. If I understand correctly, then the GNOME desktop project will rely on https://github.com/kimiori/appstream-generator which is an app written
> in D (using LDC [1]). There is a D language compiler available for s390x in the GCC toolchain, but D in GCC lacks a full ppc64le support
> [2]. LDC seems to support ppc64le, but lacks s390x. Ideally we want a single toolchain to be available across all supported arches. I am currently looking what bits are missing or what needs porting in LDC. Any help is welcome :-)
>

Thanks for pointing this out, Dan! I do think that ideally both ppc64le and s390x should be supported by both LDC and GCC; we'll have to see what we need to do to make this happen.

Peter - are you aware of the GCC bug mentioned above? I think your team should be involved in this discussion.

Andreas - what's the current status of D support in GCC on s390x? I seem to remember that something was working at some point, but I'm not sure whether we're regularly verifying this.

As to LDC support on s390x, from a quick glance at the source code it seems there's mainly some ABI support missing - that should be easy enough to add. I can have a look here.
Success!

Elizabeth K. Joseph of IBM learned via social media that Alpine Linux was at risk of dropping their s390x port due to issues with rustbuild, brought it up at a team meeting, and Ulrich's team jumped in.

Rust is increasingly a dependency for key Alpine components, and Rust does not work on s390x.

In addition, Alpine is not getting sufficient community interest to keep the port in good shape (I am pretty much the only one working on it these days), while there is no engineering support from IBM for the port.

As such, I would like to propose decommissioning the port, unless the TSC approves a plan to keep it going that involves IBM and other stakeholders.

Incidentally, a quick poll of known downstream consumers (e.g. Kubernetes Ingress) of Alpine s390x did not indicate that s390x support was terribly important to them.
Dan Horák of Fedora brought up a bug with openJDK, it was discussed at a meeting, and Tyler Steele of IBM wrote a patch that fixed it.

Hi all,

seems OpenJDK port for s390x needs some attention too, please see https://bugs.openjdk.org/browse/JDK-8288128 for details.

Thanks,

Dan
What's Next?

- Continue doing what we do!
- Recruit more distributions to collaborate
Resources

- Wiki: https://wiki.openmainframeproject.org/display/LinuxDistrosWG
- Mailing list: https://lists.openmainframeproject.org/g/wg-linux-distros
- #linux-distros-wg on OMP Slack
Questions?