openSUSE / България

openSUSE/SUSE: Current State

An overview of the current state of openSUSE and SUSE and more ☺

Agenda

- SUSE Bulgaria
- openSUSE Worldwide
  - Board Elections
- openSUSE Bulgaria
  - Overview and Plan
- openSUSE Technical
  - openSUSE Leap 15.3 EOL
  - openSUSE MicroOS

SUSE Bulgaria

Latest News

Latest News

- The office was officially opened on 23.11.2022
- They continue to grow, and are looking for new teammates
- There are various open positions (Linux, Kubernetes, DevOps, etc.)
- So, check the job bulletins regularly ☺

openSUSE Worldwide

Board Elections

Board Elections

- Elections closed on 15.12.2022
- The newly (re-)elected members are
  - **Douglas Demaio**
    - https://en.opensuse.org/User:Ddemaio
  - **Gertjan Lettink**
    - https://en.opensuse.org/openSUSE:Board_election_2022_platform_Knurpht
  - **Neal Gompa**
    - https://en.opensuse.org/openSUSE:Board_election_2022_platform_-_Neal_Gompa
- More about the Board
  - https://en.opensuse.org/openSUSE:Board

https://en.opensuse.org/openSUSE:Board_election

openSUSE Bulgaria

Overview and Plan

Overview of 2022

- Events
  - All events part of IT Tour (Plovdiv, Veliko Tarnovo, Varna, Burgas, and Ruse)
  - TuxCon Plovdiv
  - OpenFest
  - OSCAL, Tirana, Albania
- Meetings
  - None (except for this one) ☹

Plan for 2023

- Events
  - Attend at least on the same set
  - Cover additional events if possible/applicable/invited
- Meetings
  - Aim for one (online) meeting per month
- Others
  - Execute the **SUSE Certified Administrator Journey**
  - Include also Rancher set of products

openSUSE Technical

Distributions and Something Else

Distributions Overview *

- **openSUSE Tumbleweed**
  - Current. Stable. Secure. Upstream for the rest of the distributions
- **openSUSE Leap**
  - Enterprise grade and predictable. Based on SUSE Linux Enterprise
- **openSUSE MicroOS**
  - Designed to host container workloads with automated administration & patching. Upstream for SUSE Linux Enterprise Micro
- **openSUSE Leap Micro**
  - Community version based on SUSE Linux Enterprise Micro

* These are the main ones. In addition, there are a few others

openSUSE Leap 15.3 EOL

- No more security and maintenance updates after 31.12.2022
- Do not hesitate but upgrade
  - Prepare the system

```
zypper refresh && zypper update
```

  - Update the repositories (if not using the $releasever variable)

```
sed -i 's/15.3/${releasever}/g' /etc/zypp/repos.d/*.repo
```

  - Refresh the new repositories

```
zypper --releasever=15.4 refresh
```

  - Do the upgrade

```
zypper --releasever=15.4 dup
```

EOL: https://news.opensuse.org/2022/12/12/leap-153-to-reach-eol/
Upgrade procedure: https://en.opensuse.org/SDB:System_upgrade

openSUSE MicroOS

- **Small**
  - Lightweight images designed to be deployed for a specific use case
- **Scalable**
  - Optimized for large deployments while capable as a single machine OS
- **Always up-to-date**
  - Updates are automatically applied without impacting the running system
- **Resilient**
  - In case of trouble the system automatically rolls back to last working state
- **Fast**
  - Doesn't ship with baggage that slows it down

https://microos.opensuse.org/

Adaptable Linux Platform (ALP) Intro

- The **Adaptable Linux Platform** (**ALP**) is a lightweight operating system
- Instead of applications distributed in traditional software packages, it runs containerized and virtualized workloads
- Benefits
  - High security of running workloads
  - Minimal maintenance with keeping the workloads up to date
  - Stable immutable base operating system that utilizes transactions when modifying the file system
  - Ability to roll back modifications on the file system in case the transaction result is undesirable

https://documentation.suse.com/alp/all/single-html/alp/index.html

Adaptable Linux Platform (ALP) Components

- Base operating system
  - The core of ALP which runs all required services
  - It is an immutable operating system with a **read-only root file system**
  - The file system is modified by transactional updates which utilize the **snapshotting feature** of **BTRFS**
- Transactional updates
  - The **transactional-update** command performs changes on the file system
  - You can use it to install software, update existing workloads, or apply software patches
  - Because it uses file system snapshots, applied changes can be easily rolled back

https://documentation.suse.com/alp/all/single-html/alp/index.html

Adaptable Linux Platform (ALP) Components

- Container orchestration
  - ALP runs **containerized workloads** instead of applications packed in software packages
  - The default container orchestrator in ALP is **Podman** which is responsible for managing containers and container images
- Containerized workloads
  - Contain all software dependencies required to run a specific application/tool
- Cockpit
  - A Web-based graphical interface to administer single or multiple ALP workloads from one place
  - It helps you manage, for example, user accounts, network settings, or container orchestration

https://documentation.suse.com/alp/all/single-html/alp/index.html

Adaptable Linux Platform (ALP) Installation

- Installation/deployment methods
  - D-Installer
    - Offers a graphical user-friendly interface to walk you through the system configuration and deployment
  - RAW disk image
    - On first boot, you can configure basic system options using a **ncurses** user interface
    - You can fine-tune the deployment setup with Combustion and Ignition tools
- Requirements
  - AMD64/Intel 64 (x86_64-v2) and AArch64 CPU
  - At least 1 GB RAM for the OS
  - At least 12 GB (recommended 20 GB) of disk space for the OS

https://documentation.suse.com/alp/all/single-html/alp/index.html

The Game of Micro-Architectures

- So far, Tumbleweed supported both **x86_32** and **x86_64** (v1 – v4)
- This leads to packages that do not utilize the newer CPU instructions
- Thus, there were plans to go for x86_64-v3 for both Tumbleweed and ALP
- After reevaluation, it was decided to play safe and go for x86_64-v2
- And **ALP** went for it (**x86_64-v2**)
- Tumbleweed was about to follow the same path (x86_64-v2)
- But after more discussions , it was decided to stick to **x86_64-v1** and utilize further the **hwcaps** feature in **glibc**
- The x86_32 edition will be demoted to a port (maintainers needed)

Source1: https://www.phoronix.com/news/openSUSE-Tumbleweed-x86-64-v2
Source 2: https://www.theregister.com/2022/12/16/tumbleweed_reverses_x864v2_plan/

A Word on Micro Architectures

- x86-64 covers CPUs produced for almost 20 years
- Creating and maintaining software that runs on all of them is an issue
- In 2020, through a collaboration between AMD, Intel, Red Hat, and SUSE, three microarchitecture levels on top of the x86-64 baseline were defined
  - x86-64 (v1) (all x86-64 CPUs)
  - x86-64-v2 (Intel Nehalem+ and AMD Jaguar+)
    - CMPXCHG16B, LAHF-SAHF, POPCNT, SSE3, SSE4_1, SSE4_2, SSSE3
  - x86-64-v3 (Intel Haswell+ and AMD Excavator+)
    - AVX, AVX2, BMI1, BMI2, F16C, FMA, LZCNT, MOVBE, OSXSAVE
  - x86-64-v4
    - AVX512F, AVX512BW, AVX512CD, AVX512DQ, AVX512VL

https://en.wikipedia.org/wiki/X86-64#Microarchitecture_levels

Downloads

https://get.opensuse.org/

- **tumbleweed**
- **leap**
- **microos**
- **leapmicro**

Demo Time

Short Demo

Closing

Any Questions? ☺

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https://www.facebook.com/openSUSEBulgaria

See You Soon ☺

Most recent version can be downloaded from **https://github.com/shekeriev/opensuse-bg-meetings**

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