



SUSE[®] Linux Enterprise Server 12 SP2

What's new?

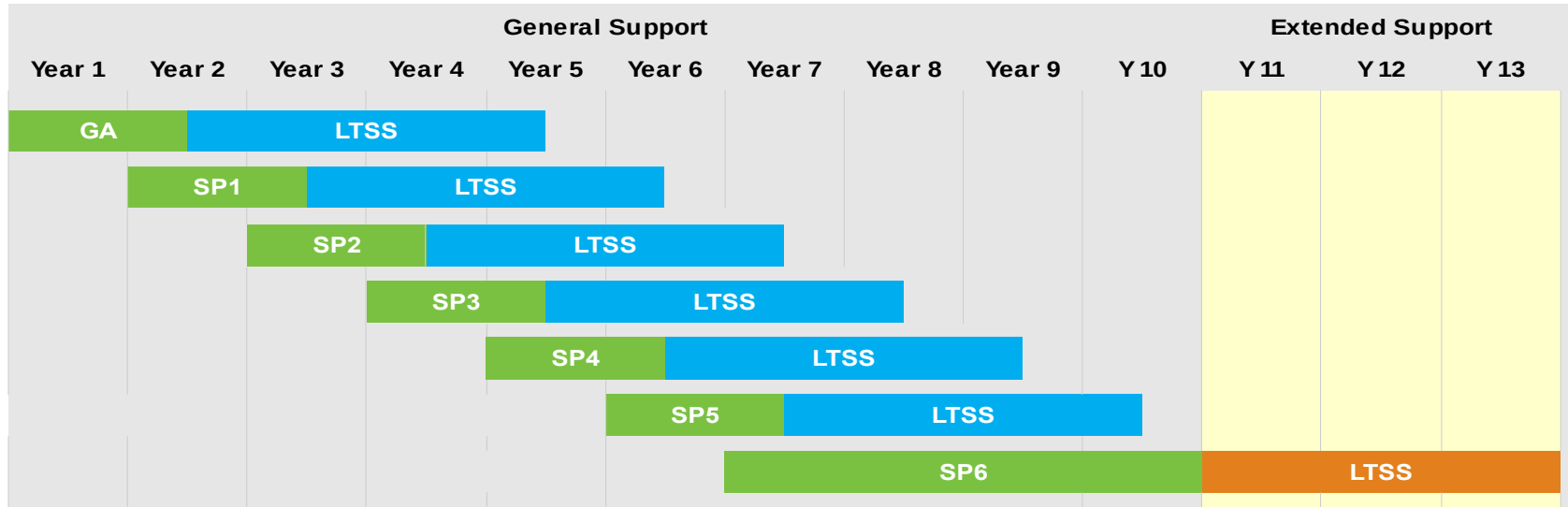
Stefan J. Behlert
Sr. Release Manager
behlert@suse.com

Agenda

- General Information
- Getting to SP2
- New and Improved Pieces of SP2
 - Key features
 - Upgrades and changes
- Looking Forward: SLES 12 SP3

General Information

SUSE® Linux Enterprise Server 12 Life Cycle



13-year lifecycle

- 10 years general support
- 3 years extended support

Long Term Service Pack Support (LTSS)

- Available for all versions, including GA
- Up to 3 years extended support

Different Lifecycle for Desktop and Modules. Not committed. Subject to change.

SUSE Linux Enterprise 12 SP2

Scope

Refresh release

- **Kernel version upgrade**
- Significant **Hardware Enablement**

Certifications

- ISV certifications remain
- Stability of userland APIs and ABIs: core libraries and system compiler remain backward compatible
- FIPS: do not touch certified security modules (except Kernel)

SUSE Linux Enterprise 12 SP2 Security Certification

- Remain compliant with **NIST SP 800-131a**
- Re-certify for **FIPS 140-2** on z System and Intel 64 / AMD64, at least for Kernel, OpenSSL, and OpenSSH
- Keep internal security standards and processes established for the **Common Criteria Certification of 12**



Getting To Service Pack 2

SUSE Linux Enterprise 12 SP2

Upgrade options

Offline upgrade (via media):

- SLES 11 SP4
- SLES 12 GA
- SLES 12 SP1

Online upgrade:

- SLES 12 GA
- SLES 12 SP1

Any other combination is unfortunately not supported.

An Upgrade with the packages from the Certification Module active requires manual interaction

SUSE Linux Enterprise 12 SP2

Online upgrade paths

One step migration (SP n → SP n+1)

- Standard online migration path supported since SLE 10.
- SP2 follows the standards.
- Option available via all tools (e.g. YaST2, zypper, SUSE Manager, etc.)

Skipping a Service Pack (SP n → SP n+2)



- Provide fully tested, supported and maintain migration path from SLE 12 GA to SLE 12 SP2.
- Exception: SLED
- Option available via all tools (e.g. YaST2, zypper, SUSE Manager, etc.)

New And Improved

SUSE Linux Enterprise 12 SP2

Key Features

Key features of SUSE Linux Enterprise 12 SP2:

- Kernel: 4.4 (includes backports from 4.5+)
- **New technologies:** NVDIMM, OmniPATH, Data Plane Development Kit with openVSwitch
- XEN 4.7 (included in kernel-default now)
- TPM 2.0
- Desktop Update: GNOME 3.20
- Hardware support following customer needs
- Driver Updates
- Stability of APIs and ABIs

NVDimm support

- **Libnvdimm** kernel subsystem, using NFIT tables provided by ACPI 6 compliant platforms
- **NFIT**: "nvdimm bus" with the core and registers memory devices
- Introduces several new drivers, e.g. PEM, BLK
- **DAX** supported with PEM, XFS as well as ext4
No BtrFS support
- **Nvml** library [suite] included to allow applications to access nvdimm infrastructure (via DAX)
- **Libndctl** as userspace management library
- **NOTE: While it looks good and stable, this is still a TechPreview!**

Intel OmniPath

- Next generation fabric
- General support added to the OFED packages
- Graphical Interface available (opa-fmgui)

Data Plane Development Kit

- libraries, drivers and APIs for user space fast packet processing
 - Reduce number of cpu cycles used for sending/receiving packets
- Required for SDN
 - Allows development of fast package capture tools
 - NOT a networking stack, but could be used to create one
- Integration into openVSwitch done

New platform: AArch64

- AArch64 supported for selected hardware
- Currently only available for OEMs
- Nearly on par with other platforms regarding supported packages

New Module: HPC

- Upcoming new module coming with SLE 12 SP2
- Contains packages useful for High Performance Scenarios
- Still growing
- No packages were removed from core media

Updates And Changes

SUSE Linux Enterprise 12 SP2

Upgrades (selection)

- **SystemD** upgraded to v228
 - We still use wicked, not systemd-networkd
 - Some changes in the handling of sysv-initscripts, mostly transparent; Exception: systemctl daemon-reload now required
- **glibc** upgraded to v2.22
 - Backward compatible
- **gcc runtime** libraries upgrade
 - gcc6 available in the Toolchain Module

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Upgrades (cont.)

- **Coreutils** upgrade to 8.25
 - Some behavior changes
- **Openssh** upgrade to 7.2
 - upstream default set-up more restrictive now, but for compatibility we relaxed this
- Other upgrades (selection):
Mesa (11.2), icewm (1.3.12), XVnc (1.6), cmake (3.5),
apache (2.4.20), Firefox (45.x), samba (4.4),
OFED packages,
...and everything close to the kernel (e.g. kdump, kexec-tools) where required
- Regcodes readable from USB-stick

Looking Forward

SUSE Linux Enterprise Server 12 SP3

Scope

Consolidation release

- Stability of APIs and ABIs
- No Kernel version change

Expand **leadership** areas of SUSE Linux Enterprise

Hardware support

- Follow customer needs
- Incremental, non-intrusive changes on all architectures
 - x86-64, IBM zSystems , IBM Power8, ARM

Selective Driver Updates

FCS Q3 2017

Tentative

SUSE Linux Enterprise 12 SPs

Public Betas

SUSE became even more **open** with SLE 12 SP2 by having public Betas

→ We are again planning **public betas** for
SUSE Linux Enterprise 12 SP3

→ If you want to join, have a look at

<https://www.suse.com/support/beta-program>



We adapt. You succeed.