



SUSE® Linux Enterprise 12

Modules, Cores and Build Services

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Customer Expectations



- Change slowly



We'll get back to this

- Stay current



Agenda

The world as we know it

- Customer Expectations
- SUSE Principals
- The problem

SLE 12 – a new approach

- Divide And Conquer
- Module deep dive

We want more packages

- openSUSE Build Service
- Solid Driver Program Build Service
- Backports project, aka PackageHub

The World As We Know It

Customer Expectations



- Stable interfaces
- Few bugs
- Targeted fixes
- No regressions
- Support many apps

- Latest hardware support
- Innovation
- New features
- Different form factors
- Stay current



Customer Expectations

- **Support**
 - Call, e-mail, fast response, bug fixes, security updates
- **Easy migration**
- **Fast updates**
 - Timely security fixes



SUSE Principles

For each distribution stream

APIs/ABIs stability

- Do not break existing APIs/ABIs
- APIs/ABIs may be added
- Feature enablement through backports
- Bug fixes through targeted changes

Everything is supported

- Some packages require special support agreements
- Even after upstream does no longer support it
- Support term is 13 years
 - More on this later

The SLE 12 Approach

Divide And Conquer

Define grouping of packages

- Base group
 - Packages are on base product ISO
 - Contains binaries shared by other groups
 - Not a pattern, but contains patterns
 - Roughly 3300 binary packages

“Logical” functionality groups

- Packages grouped by functional cohesion
- Provide functionality not in the base (exceptions apply)
- Do not have cross group dependencies
- Called “Modules”
 - We currently have 7 modules

Divide And Conquer

Same principals apply for Modules, but

- Lifecycle of packages varies across modules, differs from base
- Version changes can be expected
 - Conditions are defined

Module Definition

A module

- is a collection of software packages,
- has packages with logical functional cohesion
- packages have L3 support, possibly scope limited
- is independent of other modules,
- delivered as a repository,
- addition to a “base product” (SUSE Linux Enterprise Server),
- considered part of the distribution,
- may have different life-cycle than the core product
 - overall life-cycle
 - package life-cycle

Module - Implementation

- **Delivered as repository, add**
 - during installation or
 - to the installed system (YaST or SUSEConnect)
- **Available online**
 - Pool repository (state of packages at initial release)
 - Update repository
- **Not**
 - a pattern, but may provide patterns
 - a product with SKU for purchase

Modules - Overview

| Module Name | Content (examples) | Lifecycle |
|------------------------------------|--|----------------------------|
| Advanced Systems Management Module | The configuration management tools cfengine, puppet, salt, machinery | Continuous Integration |
| Container Module | Docker and container related functionality such as ECS integration | Continuous Integration |
| Legacy Module | Sendmail, old IMAP stack, old Java etc. | 3 years |
| Public Cloud Module | Instance initialization code, command line tools for management | Continuous Integration |
| Toolchain Module | GCC | Yearly delivery |
| Web and Scripting Module | “PHP”, “Python” | 3 years, 18 months overlap |
| Certifications Module | FIPS 140-2 | Frozen versions |

Lifecycle Details

- **Continuous Integration**

- Integration of new features through version upgrades
- Bug fixes possible through version upgrades
- Not “version of the day”, i.e. not a continuous stream
- Updates delivered through the update repository

- **Yearly**

- A new version is delivered once a year
- Once you start you need to keep moving

Advanced Systems Management Module

- **Continuous Integration**
- **Includes configuration management tools**
 - Not Chef → in Base used by other SUSE functionality
- **Dependencies unique to this module**



Container Module

- **Continuous Integration**
- **Container management tools**
- **Container integration tools**
- **Container images**



Legacy Module

- **3 year life-cycle, clock ticks from initial SLES 12 release**
 - Module (packages within) will no longer be supported after 3 years (EOL Q4 2017)
- **Provide packages**
 - to ease application migration
 - support “older” technology
 - functionality people should really not use anymore



Public Cloud Module

- **Continuous Integration**
- **Packages for**
 - instance initialization
 - Cloud management
 - CSPs
- **Dependencies unique to this module**



Toolchain Module

- **Yearly life-cycle**
 - Delivers a new version once a year
 - Does not replace system compiler, it is additional
 - Once you start using it you need to continue to move forward with every release
- Currently at gcc6



Web And Scripting Module

- **3 Years with 18 month overlap**
 - Works analogous to SLES life-cycle, just different timing
- Examples:
 - PHP5, recently extended with PHP7, will therefore get removed in about a year
 - nodejs

Certifications Module

- **FIPS 140-2 certified packages**
- **Frozen versions, will not get updated**

Why?

- **Bridge the gap between Turtle and Hare**
 - Certain parts of the distribution move fast
 - Other parts move very slowly
- **Provide new features faster**



We Want More Packages

The Open BuildService

- System to build packages and distributions
- Open source project sponsored by SUSE
- Anyone can run it
- SUSE operates 3 instances
- <https://github.com/openSUSE/open-build-service>



OpenSUSE BuildService (OBS)

- **Open to everyone**
- **Build packages for many distributions**
- **Used by openSUSE community to develop openSUSE**
 - Tumbleweed
 - Leap
- **Submission rules and quality are project dependent**
- **3 Tiered model**
 - Distribution project
 - Devel projects
 - Home projects
- **Community help**

SUSE Build Service (IBS)

- **Only accessible to SUSE employees**
- **Same functionality**
- **Linked with OBS**
- **Used to develop SUSE products**
 - SUSE Linux Enterprise
 - SUSE Manager
 - SUSE OpenStack Cloud
 - SUSE Enterprise Storage

Solid Driver BuildService

- Accessible to SUSE customers and Partners
- Build packages for SUSE Linux Enterprise
- Often used by partners to deliver kernel drivers
- Provides multiple repositories

Package Hub

- **Project in the openSUSE Build Service**
 - openSUSE:Backports:SLE-12-SP1
- **Controlled submissions**
 - Acceptance process similar to base Enterprise products
 - May not break supportability of base OS
 - Check-in approvals by SUSE
- **Provides additional packages**
 - Not a replacement for SLE packages, core, modules, or extensions
- **Packages expected to be in openSUSE:Factory**
- **Only for SLE 12 at this point**
- **Examples: KDE5, ...**

Putting It All Together

**Support
Commitment**

Package
Hub

Community Maintained
Community Help
SUSE Monitored

SDK

Maintained
Not supported

SLES

Web&
Script.

Legacy

Tool-
chain

Maintained Supported

Community

Enterprise

Modules

Solid Driver Program

Supported with
Partners

Summary

- **Base provides the stable foundation with the same compatibility and life-cycle promises made in previous SUSE Linux Enterprise distributions**
- **Modules provide an easy way to get updates for fast-changing components expanding the functionality of the base product**
- **Modules support life-cycle adjustments while providing fully supported functionality**
- **Solid Driver Build Service provides vendor supported enhancement/expansion of select functionality in SLE**
- **Package Hub provides additional functionality through community contributed packages for SLE**

Thank you; Questions?