



Current Status of OFED in SUSE Linux Enterprise Server

John Jolly
Senior Software Engineer
SUSE



Agenda



- About SUSE
- About SUSE Linux Enterprise Server
- OFED Integration into SLES
- Future Direction of OFED in SLES



SUSE and the Attachmate Group

- λ **SUSE**, headquartered in Nürnberg / Germany,
- λ is an independently operating business unit of
- λ The Attachmate Group, Inc.

- λ The Attachmate Group is a privately held
- λ 1 billion+ \$ revenue software company
- λ with four brands:



Novell®

 Attachmate

 NetIQ™



Cloud Infrastructure

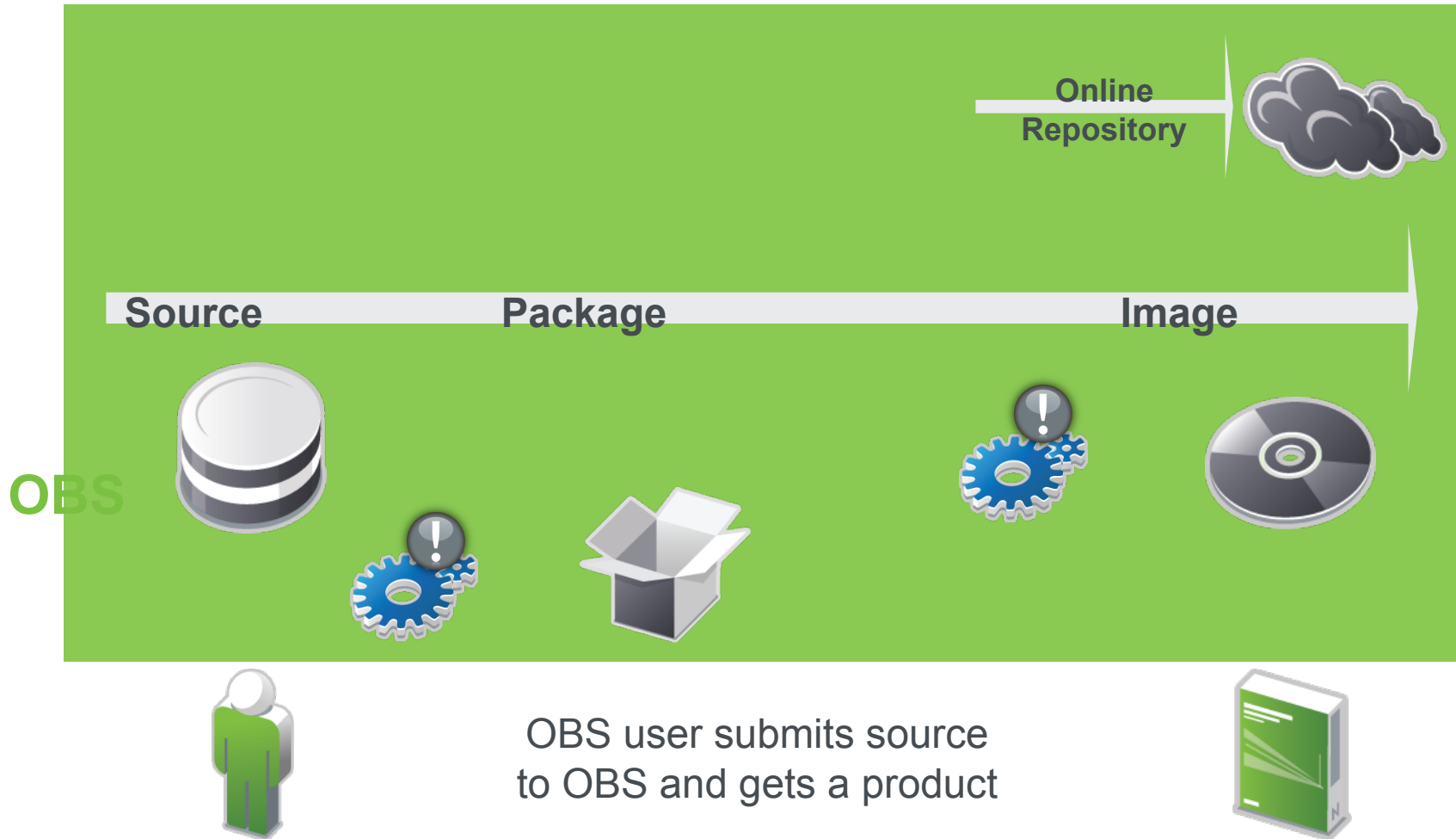


Enterprise Computing

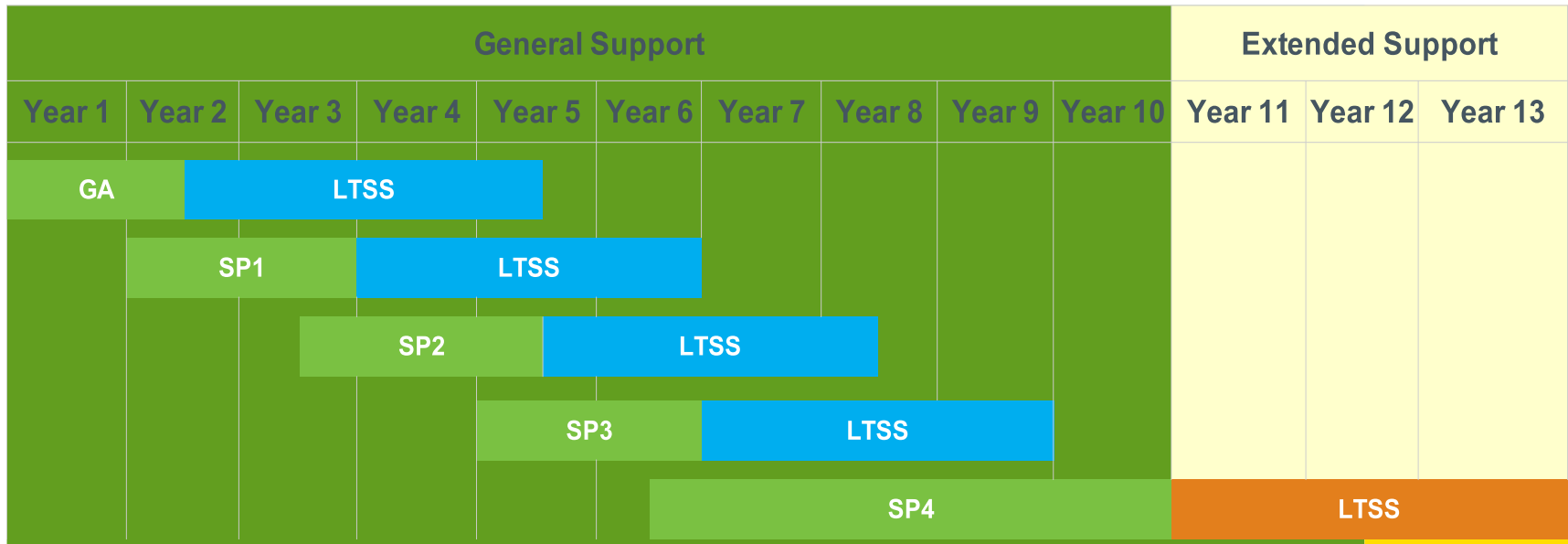


Integrated Systems

SUSE® Linux Enterprise How We Build It



SUSE® Linux Enterprise Server 12 Lifecycle Model



- .13-year lifecycle (10 years general support, 3 years extended support)
- .5-year lifecycle per Service Pack (2 years general + 3 years extended support)
- .Long Term Service Pack Support (LTSS) available for all versions, including GA



<http://www.suse.com/lifecycle/>



Product Support Lifecycle

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Start typing to find a product, then click to select

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Choose a List

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- [Products exiting General Support within 90 days](#)
- [Products under Extended Support](#)
- [Products exiting Extended Support within 90 days](#)

Product Support Lifecycle Details

PRODUCT RELEASE	GENERAL SUPPORT ENDS	EXTENDED SUPPORT ENDS	SELF-SUPPORT ENDS	CURRENT VERSION	REPLACEMENT PRODUCT
▶ SUSE Linux Enterprise Server 11	31 Mar 2019	31 Mar 2022	31 Mar 2022	SUSE Linux Enterprise Server 11 SP3	SUSE Linux Enterprise Server 11
Service Pack Release		FCS Date	General Ends		
SUSE Linux Enterprise Server 11		24 Mar 2009	31 Dec 2010		
SUSE Linux Enterprise Server 11 SP1		02 Jun 2010	31 Aug 2012		
SUSE Linux Enterprise Server 11 SP2		29 Feb 2012	31 Jan 2014		
SUSE Linux Enterprise Server 11 SP3		01 Jul 2013	TBD		

[Read more](#)

λ AppArmor Security Framework

.Application confinement



λ **Free** High Availability Extension

.Cluster Framework, Cluster FS, DRBD, GEO-cluster*

λ YaST2 systems management

.Install, deploy, and configure every aspect of the server

λ Subscription Management Tool

.Subscription and patch management, proxy/mirroring/staging

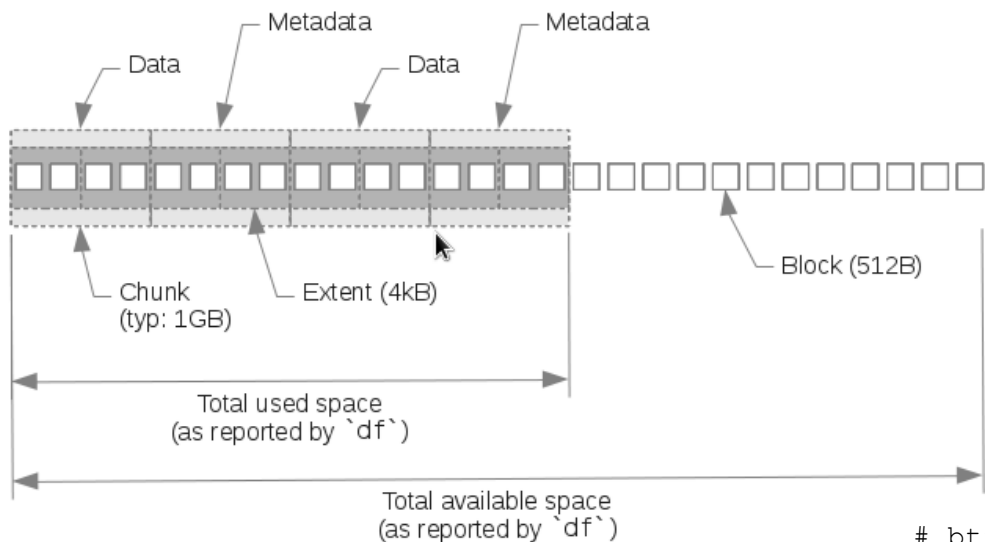
λ Starter System for System z

.A pre-built installation server, deployable with z/VM tools

Features of SLES 12

- Linux Kernel 3.12
 - Only 64-bit kernel
 - Support of 32-bit application through execution environment
 - YaST modules written in Ruby
 - OFED 3.12
 - Significant backport assistance from HCA vendors (Intel, Mellanox, etc.)
 - Installation default to btrfs
 - Provides snapshots, copy-on-write, subvolumes, scalable to 16EiB
-

Btrfs Disk Space And Extents



In case of a Btrfs filesystem on a single underlying block device

```
# btrfs filesystem df /
Data: total=14.50GB, used=12.20GB
System, DUP: total=8.00MB, used=12.00KB
System: total=4.00MB, used=0.00
Metadata, DUP: total=1.75GB, used=904.11MB
```

```
# df -h /
Filesystem      Size  Used Avail Use% Mounted on
/dev/sda7       20G   14G   4.3G   77% /
#
```

Disk utilization

$$12,2\text{GB} + 2 \times 0,9\text{GB} + = 14 \text{ GB}$$

Snapshots in SUSE® Linux Enterprise 11 SP3 YaST2 Management



The image shows two overlapping YaST2 windows. The background window is titled "Snapshots" and displays a table of system snapshots. The foreground window is titled "Selected Snapshot Overview" and shows a file tree with "printers.conf" selected, along with a diff view comparing two versions of the file.

ID	Type	Start Date	End Date	Description
1	Single	Wed 17 Aug 2011 04:30:01 PM CEST		timeline
2 - 3	Pre & Post	Wed 17 Aug 2011 04:31:54 PM CEST	Wed 17 Aug 2011 04:32:46 PM CEST	yast lan
4 - 5	Pre & Post	Wed 17 Aug 2011 04:32:48 PM CEST	Wed 17 Aug 2011 04:32:59 PM CEST	yast lan
6 - 7	Pre & Post	Wed 17 Aug 2011 04:32:59 PM CEST	Wed 17 Aug 2011 04:33:10 PM CEST	yast lan
8 - 9	Pre & Post	Wed 17 Aug 2011 04:33:10 PM CEST	Wed 17 Aug 2011 04:33:21 PM CEST	yast lan
10 - 11	Pre & Post	Wed 17 Aug 2011 04:33:21 PM CEST	Wed 17 Aug 2011 04:33:32 PM CEST	yast lan
12	Single	Wed 17 Aug 2011 04:33:32 PM CEST		
13	Single	Wed 17 Aug 2011 04:33:32 PM CEST		
14	Single	Wed 17 Aug 2011 04:33:32 PM CEST		
15	Single	Wed 17 Aug 2011 04:33:32 PM CEST		
16	Single	Wed 17 Aug 2011 04:33:32 PM CEST		
17	Single	Wed 17 Aug 2011 04:33:32 PM CEST		
18	Single	Wed 17 Aug 2011 04:33:32 PM CEST		
19	Single	Thu 18 Aug 2011 04:33:32 PM CEST		
20	Single	Thu 18 Aug 2011 04:33:32 PM CEST		

Selected Snapshot Overview

10 - 11

- etc
 - cups
 - printers.conf**
 - printers.conf.O
 - var

Show the difference between first and second snapshot
 Show the difference between first snapshot and current system
 Show the difference between second snapshot and current system

File content was modified.

```
--- /snapshots/10/snapshot/etc/cups/printers.conf 2011-08-17 16:20:38.325347599 +0200
+++ /snapshots/11/snapshot/etc/cups/printers.conf 2011-08-17 16:36:54.936184604 +0200
@@ -1,12 +1,12 @@
# Printer configuration file for CUPS v1.3.9
-# Written by cupsd on 2011-08-17 16:20
+# Written by cupsd on 2011-08-17 16:36

Info HP LaserJet 4050 Series Postscript (recommended)
```

Buttons: Show Changes, Help, Restore From First, Restore From Second, Cancel, Restore Selected

OFED 3.12



- Official Open-Source Distribution from The Openfabrics Alliance
- Up-to-date as of OFED 3.12-rc1
 - Initialization scripts package renamed to rdma
 - Library packages postfixed with -rdmav2
 - infinipath-psm v3.2
 - opensm v3.3.17

How you can help

- Report bugs

 - <http://bugzilla.novell.com>

- Participate in feature submission

 - <http://fate.suse.com>

- Use the Open Build Service

 - <https://build.opensuse.org>

 - SLES 10 and 11, openSUSE, Fedora, RHEL, Debian, Ubuntu
x86 and x86_64, powerpc, ppc64, armv5el, armv7l, armv7hl

 - Install and manage your own build service



Thank you!

