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

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

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

- Cloud Infrastructure
- Enterprise Computing
- Integrated Systems
- SUSE
- Attachmate
- Novell
- NetIQ
SUSE® Linux Enterprise
How We Build It

OBS user submits source to OBS and gets a product
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
Product Support Lifecycle

**QUICK SEARCH**

SUSE Linux Enterprise Server 11
Start typing to find a product, then click to select

- SUSE
- Novell
- View Policy
- View Policy

**Choose a List**

- All Products
- Products under General Support
  - Products exiting General Support within 90 days
- Products under Extended Support
- Products exiting Extended Support within 90 days

**Product Support Lifecycle Details**

<table>
<thead>
<tr>
<th>PRODUCT RELEASE</th>
<th>GENERAL SUPPORT ENDS</th>
<th>EXTENDED SUPPORT ENDS</th>
<th>SELF-SUPPORT ENDS</th>
<th>CURRENT VERSION</th>
<th>REPLACEMENT PRODUCT</th>
</tr>
</thead>
</table>

**Service Pack Release**

<table>
<thead>
<tr>
<th>SERVICE PACK RELEASE</th>
<th>EES Date</th>
<th>General Ends</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUSE Linux Enterprise Server 11</td>
<td>24 Mar 2009</td>
<td>31 Dec 2010</td>
</tr>
<tr>
<td>SUSE Linux Enterprise Server 11 SP1</td>
<td>02 Jun 2010</td>
<td>31 Aug 2012</td>
</tr>
<tr>
<td>SUSE Linux Enterprise Server 11 SP2</td>
<td>29 Feb 2012</td>
<td>31 Jan 2014</td>
</tr>
<tr>
<td>SUSE Linux Enterprise Server 11 SP3</td>
<td>01 Jul 2013</td>
<td>TBD</td>
</tr>
</tbody>
</table>

[Read more](http://www.suse.com/lifecycle/)
Unique Tools Included

- **AppArmor Security Framework**
  Application confinement

- **Free** High Availability Extension
  Cluster Framework, Cluster FS, DRBD, GEO-cluster*

- **YaST2 systems management**
  Install, deploy, and configure every aspect of the server

- **Subscription Management Tool**
  Subscription and patch management, proxy/mirroring/staging

- **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

- Disk utilization
  \[12.2\, \text{GB} + 2 \times 0.9\, \text{GB} = 14 \, \text{GB}\]
Snapshots in SUSE® Linux Enterprise 11 SP3

YaST2 Management

### Snapshots

<table>
<thead>
<tr>
<th>ID</th>
<th>Type</th>
<th>Start Date</th>
<th>End Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Single</td>
<td>Wed 17 Aug 2011 04:30:01 PM CEST</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Selected Snapshot Overview

- 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.

```bash
--- /snapshots/10/snapshott/etc/cups/printers.conf2011-08-17
16:20:38.325347599 +0200
+++ /snapshots/11/snapshott/etc/cups/printers.conf2011-08-17
16:36:54.396184604 +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:
- 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!