



EDF

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OSCAR on Debian the EDF Experience

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Outline

OSCARonDebian

- › Introduction
- › Port Issues
 - *OSCAR scripts*
 - *OSCAR prereqs*
 - *OSCAR Packages*

EDF Approach

- › A solution : Bootable CD/DVD
- › Proposition to integrate Oscar in an almost automatized Installation

OSCARonDebian - Introduction

OSCAR initially developed for RPM Linux distributions

OSCAR based on

- › general scripts/libs
- › prereqs
- › OSCAR packages

Since OSCAR 3.0, development of PackMan/DepMan

- › Virtualization of the binary package format

OSCAR Port to Debian

Goals

- › Port to the Debian *Sarge* Linux distribution
- › Port compatible with the “official” OSCAR suite

Issue

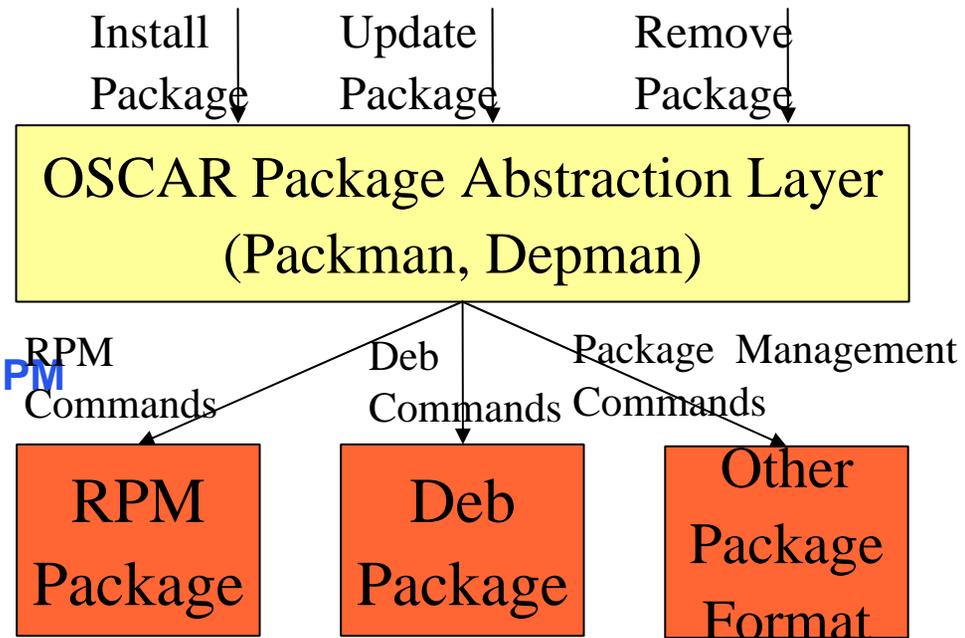
- › new binary package format (.deb vs. .rpm) with new tools to manage binary packages (apt, dpkg)
- › new filesystem organization
- › different organization of configuration files

PackMan / DepMan

Simplify the port on new binary packages formats

- ›no longer depending on RPM packages
- ›have to create a new “backend” for Debian

Some scripts and libs are still rely on RPM packages



OSCAR Scripts and Libraries

Scripts and libs: some of them are RPM based

Source audit

- › find RPM based commands
- › create a new abstraction API to replace RPM based commands for more generic commands (extending or creating OSCAR libs)

Port to have a “generic” code (not depending on a specific binary package format)

OSCAR Prereqs

OSCAR prereqs are

- › Basic software components needed by OSCAR
- › Installed during the OSCAR initialization step

Problems

- › some prereqs are available as RPM packages
- › scripts based on RPM commands

Port on Debian

- › Creation of Debian packages
- › Scripts modification using more generic commands

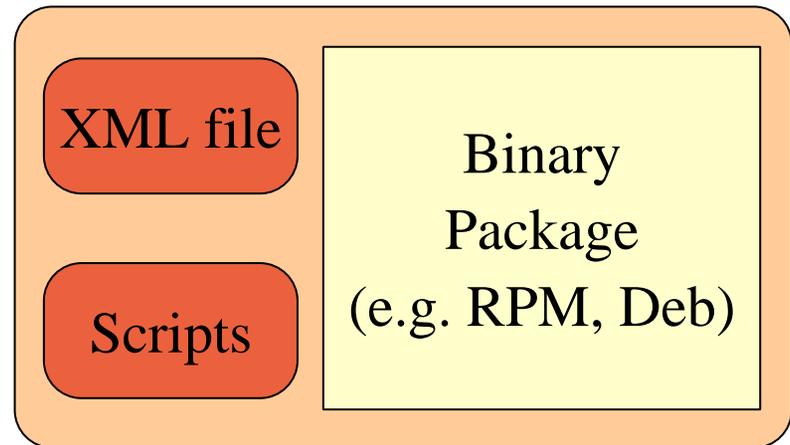
OSCAR Packages

OSCAR packages' structure

- ›XML meta-file
- ›scripts
- ›binary packages

Port to the Debian distro

- ›Create Deb packages or use existing packages
- ›Adapt the XML file
- ›Adapt scripts



Use of Debian Tools

Debian has a specific approach to manage packages

- › based on Advanced Package Tool (APT)
- › SIS for Debian based on Deboot and APT
 - *Deboot to create a basic system, using an online repository*
 - *APT to install other package into the image, using a local or an online repository*

Current solution

- › Image created using online repository
- › OSCAR packages managed with a local repository

OSCARonDebian – Current State

A development version available

- › allows to install a cluster
- › compatible with RPM based distributions
- › closed to OSCAR 4.1 (simple modifications)

Issue

- › some OSCAR Packages are not “stable” (Debian packages not compliant with Debian rules)
- › still need to be tested
- › what is the best way to integrate modifications in OSCAR (current discussions)

Proposal for an OscarOnDebian Installation

How to have a Debian-based environment for Oscar?

- › Hand made installation of the master node
 - *Long, boring, unreproducible, non industrial solution, ...*

- › Network Installation
 - *Network infrastructure is needed*
 - *Environment dependancies (pxe, dhcp, floppy, cd, ..)*
 - *Installation server is needed*

- › Bootable CD/DVD containing everything
 - *Fully independant from environment constraint*

Bootable CD/DVD

Goal

- › Provide a Debian environment for OSCAR tools

Contains (at least)

- › Boot loader : Grub
 - *Kernel's choice (x86, x86-64, ...)*
- › Packages .deb
 - *Personalized Debian Mirror*
- › Installation Server
 - *FAI embeded server to preinstall the master node*
 - *Configure the master node as an Oscar server and/or FAI server*

Standard Master Node Configuration

Hardware :

- ›2 network interfaces

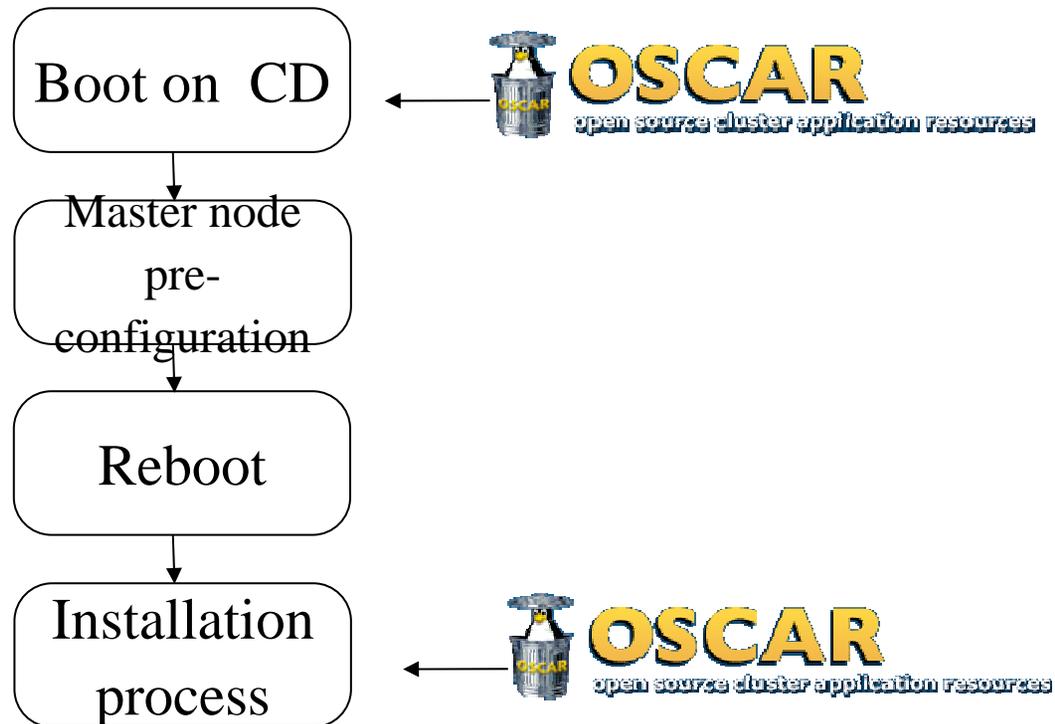
Environment softwares

- ›DHCP Server
- ›Installation server for the nodes (Oscar, FAI, ...)
- ›User management Authentication (NIS Master/Slave, LDAP, ..)
- ›NFS Server needed by FAI
- ›FTP Server for the Debian Mirror

Clustering softwares

- ›PBS/Torque server
- ›Maui server

How to use Oscar tools ? (Or where to plug OSCAR in this process ?)



Easier to integrate