OSCARonDebian: Contributions from the Google Summer of Code 2005 program

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Introduction

- SoC 2005 allows us to have a pretty good OoD version
- But
  - trunk has changed a lot and OoD is based on OSCAR 4.0
  - difficult to follow OSCAR developments based on RPMs
- So the SoC effort cannot be directly integrated into OSCAR, but gave us a good idea of tasks to do
OoD Issues

• Port to Debian, what are the issues?
  – different binary package format
  – different tools to manage these packages
  – notion of package repository
  – packages/services/file location are different

• What OSCAR parts have to be modified?
  – management of binary packages
  – prereqs
  – all Debian packages
Binary Package Management

• What's different from an RPM Linux distribution?
  – notion of online repository (based on *apt*): installation of a very basic system + online repository
  – different set of tools, difficult to match them to RPM tools: dpkg, dselect, apt
  – automatic management of dependencies
  – Debian users most of the time do not have the full CD set (14 CDs)
Binary Package Management (2)

• What are our solutions?
  – extend packman/depman in order to be able to use apt
    • transparent solution, extending Packman
    • PM_Detect framework (abstraction on top of Packman/Depman)
      • possible to use an online repository for the creation of an image
  – add mechanisms to set up a local repository for Debian packages for OPKG
    • Sanity_Check framework
    • PM_Detect framework
Binary Package Management (3)

- **Image Deployment / Configuration**
  - System Imager / System Configurator

- **Bootstrap Tool**
  - System Installer w/ Debian abstraction
  - Deboot

- **Dependencies Management**
  - apt
  - update-rpms / yume

- **Binary Package Management**
  - dpkg
  - rpm

- **Binary Packages**
  - .deb files
  - RPM files

- **Debian Based Systems**
- **RPM Based Systems**
Binary Package Management (4)

• For OSCAR packages
  – use of existing OSCAR packages
    • official Debian packages
    • from the DCC project (e.g. Torque)
  – creation of Debian packages
  – audit/update post/pre-installation scripts
Prereqs

• Problem
  – based on RPMs: creation of Debian packages
  – scripts based on rpm commands and RPMs based Linux distribution

• Solution
  – creation of an abstraction layer (integrated into the PM_Detect framework)
  – similar to generic-script
  – ease the port to new Linux distributions
OSCAR Packages

- OSCAR Packages has been ported to Debian
  - using official Debian packages
  - or creating new Debian packages
- Version different from the OSCAR trunk
- Maybe reused in the current effort
- Time consuming
  - focus on the core integration into trunk, no on OSCAR packages
OoD – Current Efforts

• Current developments based on the OSCAR trunk
  – direct integration
  – needs less contributors

• Current issues
  – lack of documentation (even if it is not any more so true)
  – lack of man power: focus only on the core
OoD – Current Efforts (2)

• Good points
  – Erich did a great job with *Rapt*
    • yume-like interface
    • will ease the SIS port to Debian
  – Erich did a great job with prereqs
    • generic management, ease the port to Debian
  – the documentation (for developers) get better and better
    • Trac Wiki
**Rapt**

**Image Deployment / Configuration**
- System Imager / System Configurator

**Bootstrap Tool**
- System Installer w/ Rapt abstraction
- System Installer w/ Yume abstraction

**Dependencies Management**
- Rapt
- apt / Deboot
- update-rpms / yume

**Binary Package Management**
- dpkg
- rpm

**Binary Packages**
- .deb files
- RPM files

Debian Based Systems

RPM Based Systems

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### SoC 2005 - Summary

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• **What did we learn?**
  - we can do it... but not that way!
  - not enough man power to not work using trunk
  - port of OSCAR package is time consuming