Native Installer in OpenOffice.org 2.0

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Agenda

- The Sun installation team
- What are native installer?
- The packing process to create native installation sets
  - Comparing old and new packing process
  - The Perl Packer and EPM
  - Description of the new CVS modules
  - Integrating new platforms
- The native installation process
  - The native installer
  - Changes in the installation process
  - Debian support, Root privileges, Language packs
- Summary

The Sun Installation Team

- Christof Pintaske, *team leader Base Technology*
- Oliver Braun, *Unix Systemintegration*
- Ingo Schmidt, *Product definition and packing process*
- Dirk Völzke, *old setup application*
- Jörg Barfurth, *Configuration*

What are Native Installer?

Native installer are the operating system specific installation programs or processes.

Examples:

- Windows -> Windows Installer Service
- Solaris -> Solaris packages
- Linux -> RPM (?)

Advantages of using native installer:

- No own setup application required
- Consistent install experience
- Open architecture for system administrators
- Full support of the operating system (user privileges)
- Takes care to omit unknown system states

The Packing Process

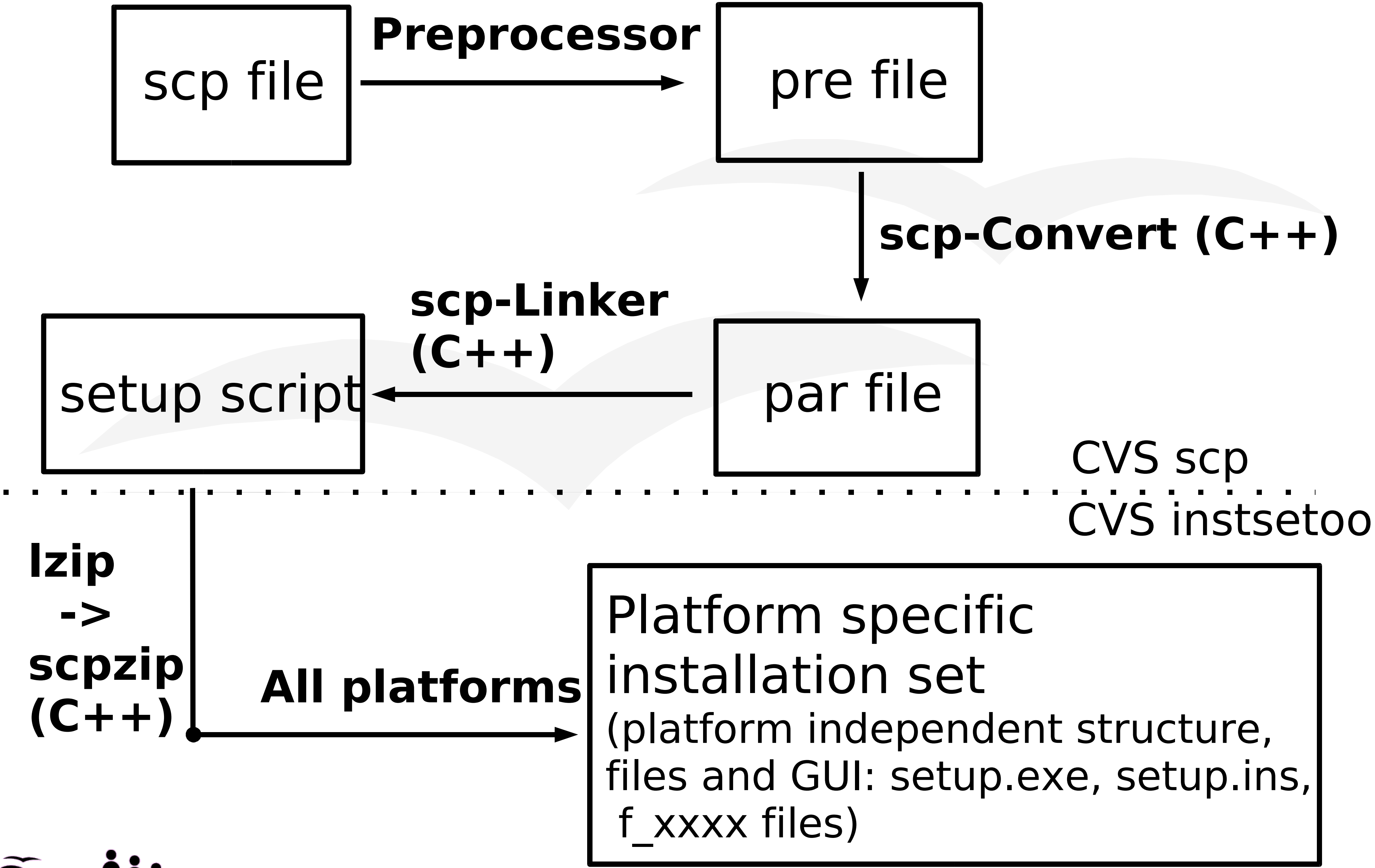
Contains:

- A platform independent product description language
- Platform independent, flexible product description files: scp files
- Tools to create the platform and product specific product description file: setup script (setup.ins, setup.inf)
- Tools to create the platform, product and language specific installation sets from this setup script

The Old Packing Process

- Used the product description language *scp* -> setup script. Setup scripts can be found in OOo 1.x installation sets. (CVS: scp)
- Used scp tooling (C++) based on the setup library to create the setup script -> Concatenation of script creation and installation (CVS: scptools)
- Using lzip and scpzip OOo installation sets were created:
  - Uniform packing process for all platforms
  - Similar installation sets for all platforms
  - scpzip also uses setup library -> Concatenation of packing and installation

The Old Packing Process



scp file

Preprocessor

pre file

scp-Convert (C++)

par file

scp-Linker (C++)

setup script

CVS scp

CVS instsetoo

lzip -> scpzip (C++)

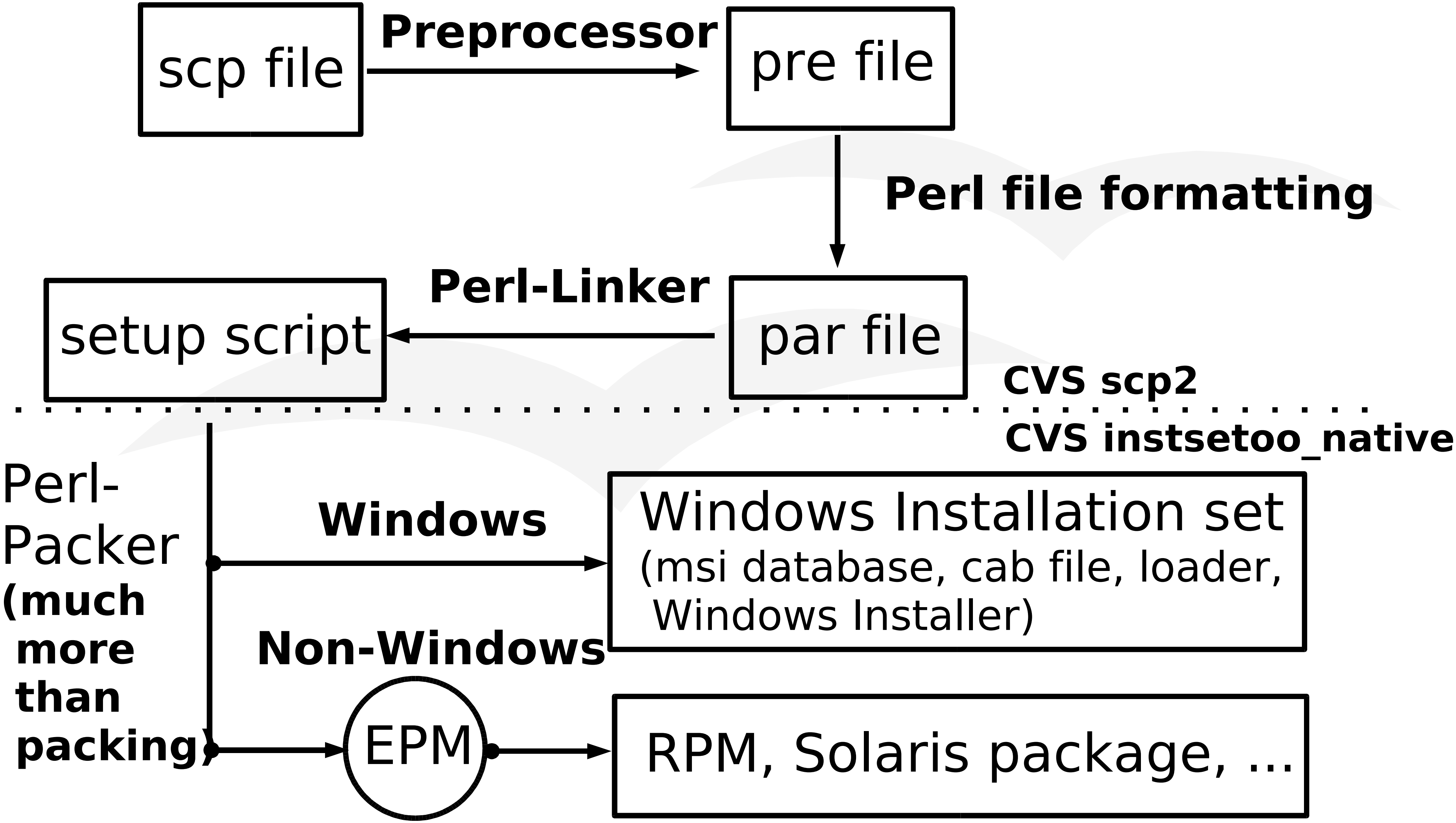
All platforms

Platform specific installation set (platform independent structure, files and GUI: setup.exe, setup.ins, f_xxxx files)

The New Packing Process

- *scp* was modernized (CVS scp2)
  - build process is much faster now
  - new functionality was included
  - complete module is much clearer
- *scptools* substituted by Perl programs located in solenv/bin/modules. Created is still a setup script, but more flexibility for introducing new functionality (Decoupling of packing and installation)
- The packing process, in which installation sets based on native installer are created, was completely new written in Perl (*Perl-Packer*).

The New Packing Process



scp file

Preprocessor

pre file

Perl file formatting

par file

Perl-Linker

setup script

CVS scp2

CVS instsetoo_native

Perl-Packer **(much more than packing)**

Windows

Windows Installation set (msi database, cab file, loader, Windows Installer)

Non-Windows

EPM

RPM, Solaris package, ...

The Perl Packer

- Located in solenv/bin/make_installer.pl plus modules in solenv/bin/modules/installer
- Uses the setup scripts (setup.ins, setup.inf)
- Platform specific packing process
- Two big differences: Windows <-> Non-Windows
  - Windows: A windows installer database is created -> Windows Installer SDK is required
  - Non-Windows: Usage of EPM. A EPM list file is created (kind of Linux spec file or Solaris prototype file). EPM generates from this list file the native installer for many different platforms.

The Perl Packer / EPM

- EPM: *Easy Software Products Package Manager*
- EPM from www.easysw.com/epm
- EPM is free and under GPL published program
- Creates from platform independent EPM list files native installer for *MacOS, AIX, FreeBSD, NetBSD, OpenBSD, HP-UX, Debian, IRIX, MaxOS X, Tru64*
- We provide an EPM patch for Solaris and Linux (rpm) to change the spec file or prototype file that is created by EPM ->
    - Packages and RPMs become relocatable (BASEDIR, Prefix)
    - Linux (RPM): Setting the release number in spec file, the "_topdir" directory and "AutoReqProv: no"

New Tasks for the Perl Packer

- Generating the services.rdb
- Unzipping zip files and register every single file included in this files in the databases or list files
- Evaluation of scp flags (in the past done by the setup). Native installer know nothing about scp
- strippen of unstripped libraries
- Working with CustomActions (Windows) or Shell scripts (Unix), that replace the basic scripts from old setup
- Making systems specific calls for Windows Installer SDK, pkgmk, rpm or EPM

Changes in CVS Modules

Removed

- scptools *(incl. lzip and scpzip for packing)*
- scp
- setup2
- instsetoo

New

- solenv *(new Perl based packing program and scptools)*
- scp2
- setup_native
- instsetoo_native

Content of New Modules

scp2 contains

- the product description

setup_native contains

- scripts for RPM and package installation without root privileges
- Windows Installer custom actions

instsetoo_native contains

- the build instructions for native installation sets
- the shell scripts for the Unix packages
- the package list, which defines the Unix packages!
- some template tables for the Windows Installer database

scp Description Language

One small example for scp:

```
File gid_File_Lib_I18npool
    TXT_FILE_BODY;
    Styles = (PACKED,UNO_COMPONENT,SETUPZIP);
    RegistryID = gid_Starregistry_Services_Rdb;
    Dir = gid_Dir_Program;
  #ifdef UNX
    Name = STRING(CONCAT2(i18npool.uno,UNXSUFFIX));
  #else
    Name = STRING(CONCAT2(i18npool.uno,.dll));
  #endif
End
```

More info about the new scp is available at:

http://installation.openoffice.org/How_to_scp_in_ooo.html

Package List

Package list are used for non-Windows platforms, to define the packages (Linux RPMs, Solaris packages)

-> ToDo for adding platforms!

Sample:

```
module = "gid_Module_Prg_Wrt"
script = "shellscripts_writer.txt"
solarispackagename = "OOOopenoffice-writer"
packagename = "openoffice-writer"
requires = "openoffice-core"
description = "Writer module for OpenOffice.org 1.9.54"
destpath = "/opt/openoffice1.9.54"
```

Integrating New Platforms

There are platforms that are not supported (tested) yet by the new packaging process:

MacOS X, Debian, ...

ToDos:

- Packing program in “solenv/bin” has to be adapted
- Package lists in “instsetoo_native”
- Shell scripts in “instsetoo_native”
- New Parameter for packing program (?) -> instsetoo_native/util/makefile
- Additional platform stuff to “setup_native”

Many problems solved by usage of “EPM”

The Native Installation Process

Installation sets can be built for Windows, Solaris and Linux (RPM). Additional platforms with (small) changes in the Perl-Packer possible.

Solaris:

- Root privileges are required -> “pkgadd” and “pkgrm”

Linux (RPM):

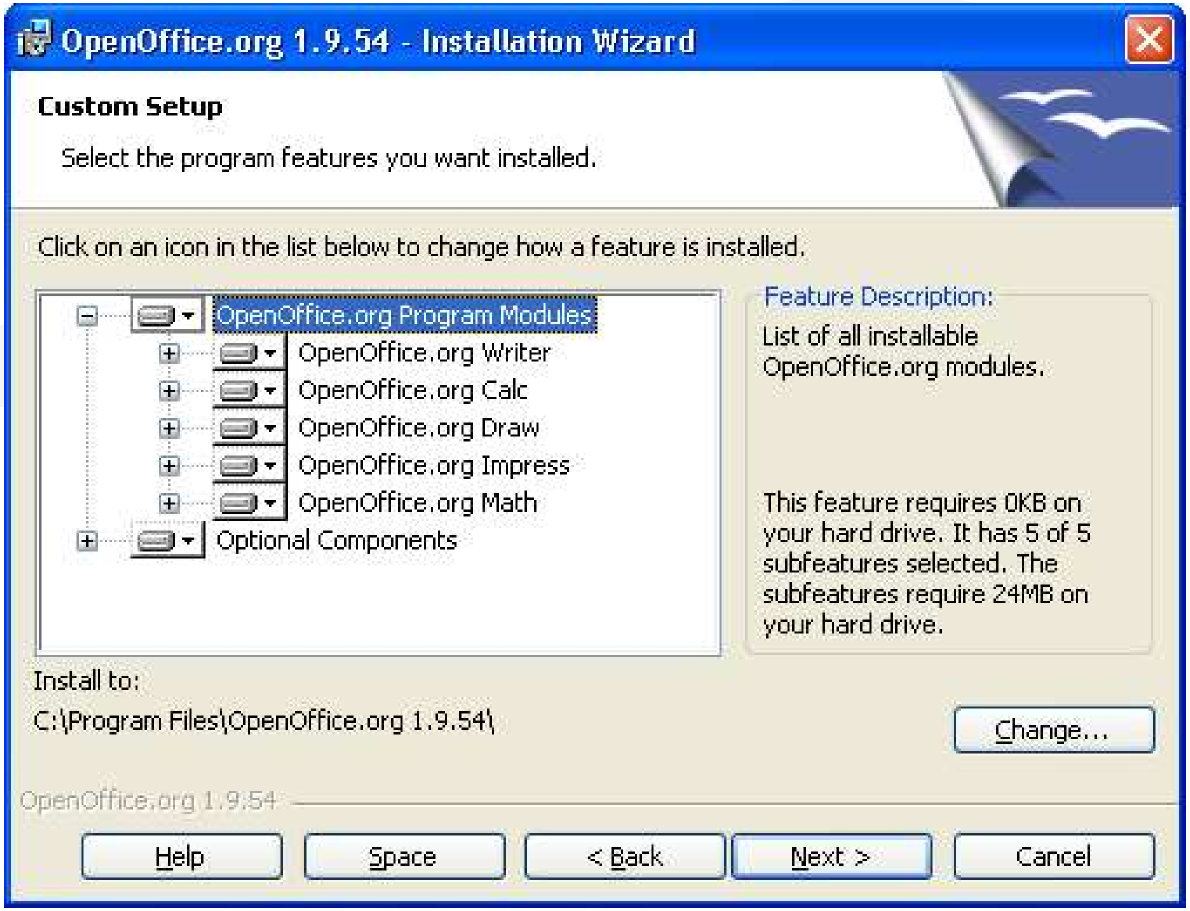
- Root privileges are required -> “rpm -i” and “rpm -u” (without epm patch: “rpm -i --nodeps”)

Windows:

- Installation and deinstallation with GUI installer
- Deinstallation via Add-Remove-Program applet

Windows Installer GUI

OpenOffice.org Custom Setup dialog using the Windows Installer:



OpenOffice.org 1.9.54 - Installation Wizard

Custom Setup

Select the program features you want installed.

Click on an icon in the list below to change how a feature is installed.

- OpenOffice.org Program Modules
  - OpenOffice.org Writer
  - OpenOffice.org Calc
  - OpenOffice.org Draw
  - OpenOffice.org Impress
  - OpenOffice.org Math
- Optional Components

Feature Description:

List of all installable OpenOffice.org modules.

This feature requires 0KB on your hard drive. It has 5 of 5 subfeatures selected. The subfeatures require 24MB on your hard drive.

Install to:

C:\Program Files\OpenOffice.org 1.9.54\

Changes in Installation Process

- No more GUI for Unix installations
- No more user installation
- Installation is comparable with old network installation plus system integration
- Windows: Systemintegration for current user or for all users at the computer
- Unix: systemwide system integration
- Installation of RPMs and Solaris packages requires root privileges
- User data are copied into user directory at first office start (path in bootstrap file)
- License agreement at first soffice start

Debian Support

Probem: Linux does not use only RPM

-> how to support additional distributions ?

EPM supports also Debian

-> instsetoo_native (parameter “-debian”, m57 (?))

-> in current packing process packages and shell scripts have to be defined

Building RPMs and converting them via “alien”

Problem for “tar.gz” installation sets

-> execution of **shell scripts**. Installation is more than copying files!

OpenOffice.org Shell Scripts

Shell scripts are needed at the moment for:

- configimport (configuration)
- pkgchk (configuration)
- Unix system integration

An installation set as “tar.gz” would require a script that is executed after unpacking

Installation Without Root Privileges

The standard Unix installation process <u>requires root privileges</u> because:

- Changes in the <u>installation database</u>
- Installation into <u>/opt</u>

-> not good to handle for development and QA

Scripts are available (in setup_native) to make an installation without root privileges (available for Solaris and Linux (RPM)):

- <u>shifting the system root</u>
- creating local <u>installation databases</u>
- let the system think root is installing (Solaris)

Language Packs

Creation of language packs with native installer:

The language dependent part of the product describing setup script file is packed into a special file -> **Language pack**

- Installation is possible into an installed OpenOffice.org 2.0
- Configimport at the end of the installation takes care of the correct configuration
- Starting OpenOffice.org the “soffice” detects the new language -> available at “Tools->Options->Lang.Set.”
- Installation with shell script or Windows Installer -> detecting existing OpenOffice.org installation

Language Packs

Creation of Language Packs in CVS module "instsetoo_native":

In the util directory there is a new target "ooolanguagepack":

dmake ooolanguagepack_fr

results in installation sets:

- "OOOopenoffice-fr.sh"
- "openoffice-fr-1.9.51-1.i586.rpm"
- Windows installation set (more than one language possible)

Summary

- OpenOffice.org 2.0 installation is done by native installer
- A new process was created from product description scp to native installation sets
- The new programs are written in Perl and have greater functionality than old lzip and scpzip
- EPM is included in the non Windows packing process
- The packing process can easily be expanded to further operating systems
- Big changes in Unix install: root privileges, no GUI
- Scripts for non-root installation available
- Language packs will be supported to add languages into an installed OpenOffice.org