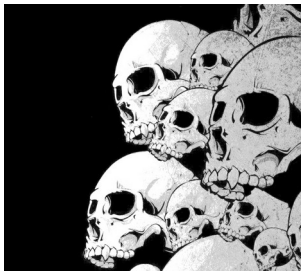
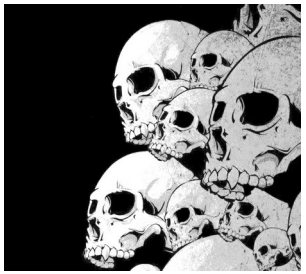


Packaging Debian

debian

Introduction au packaging Debian

Y. Collette



Objectifs

L’objectif du packaging :

Préserver le code source du paquet original + patches correctifs pour assurer le build

Masquer les différentes étapes du build du paquet et des dépendances

Référencer les différentes modifications

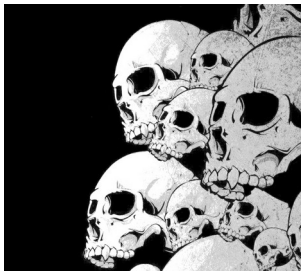
Faire des builds pour plusieurs architectures

Tout cela, encapsulé dans un simple fichier SPEC où dans une arborescence de packaging debian

Automatisation, répétabilité, documentation du build

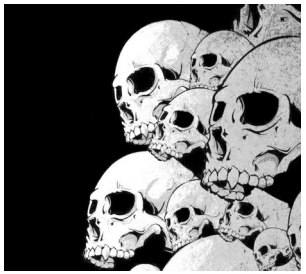
Définition :

Un container installable OS-spécifique ou distro-spécifique pour un software



Objectifs

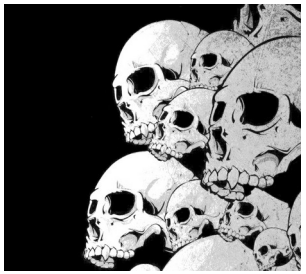
Standardiser le déploiement	→	Savoir ce qu'on a installé
Simplifier l'environnement	→	Une seule source de logiciels
Conformité aux normes	→	Uniformisation de l'installation
Gestion des risques	→	Des mises à jour centralisées
Reproductible	→	Fiabilité des builds



APT / DPKG

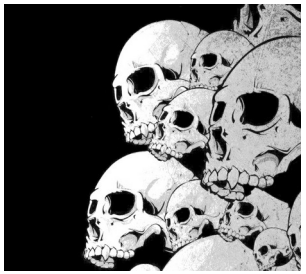
Les quelques commandes pour gérer les paquets sous Debian :

apt	Gestion des paquets (pour un utilisateur final)
apt-get, apt-cache, apt-file	Gestion des paquets (pour un script)
aptitude	Gestion des paquets - interface semi-graphique
dpkg	Gestion des paquets hors dépôts
deborphan	Trouver les paquets non utilisés, appelés orphelins
dselect (param DPKG)	Gestion des paquets - interface à dpkg
wajig	Outil d’administration simplifié pour apt, dpkg et dselect



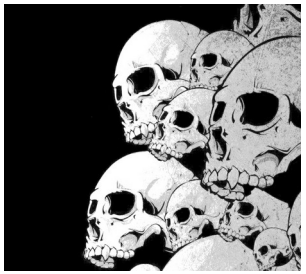
APT / DPKG

apt update
apt upgrade
apt install <package_name>
apt install <package_name>=<version_number>
apt remove <package_name>
apt purge <package_name>
    apt remove just removes the binaries of a package. It leaves residue configuration files.
    apt purge removes everything related to a package including the configuration files.
apt search <search term>
apt show <package_name>
apt list –upgradeable
apt list --installed
apt autoremove



APT / DPKG

dpkg -i <package_name>	install install
dpkg -l	list installed packages
dpkg -r <package_name>	remove
dpkg -p <package_name>	purge
dpkg -c <package_name>	show content
dpkg -s <package_name>	verify if installed
dpkg -L <package_name>	check the location of installed packages
dpkg –help	show version of dkpg

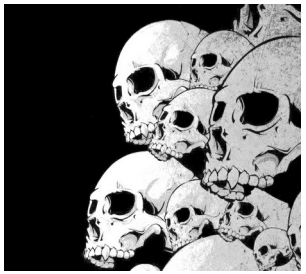


Configuration initiale

Avant de se lancer dans le packaging, il est nécessaire de configurer certaines variables d’environnement :

Ajouter dans ~/.bashrc

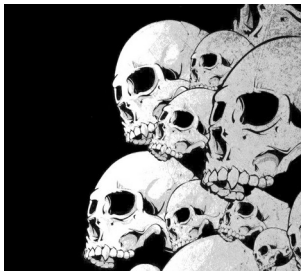
DEBEMAIL="<firstname>.<name>@email.org"
DEBFULLNAME="Yann Collette"
export DEBEMAIL DEBFULLNAME



La structure d’un paquet Debian

debian

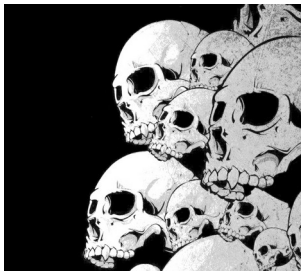
changelog	the changelog file of the package
compat	contains a version number. Don’t change this
control	a file which describes all the informations related to the package
copyright	the license of the package
install	a file which indicated which files are installed and where (optional)
rules	a ‘makefile’ which rules to execute various steps of the packaging
source	
format	a version number. Don’t change ths



Le fichier control

```
Source: greetings
Section: unknown
Priority: optional
Maintainer: Yann Collette <<firstname>.<name>@email.org>
Build-Depends: debhelper (>= 11)
Standards-Version: 4.1.3
Homepage: <insert the upstream URL, if relevant>
#Vcs-Browser: https://salsa.debian.org/debian/greetings
#Vcs-Git: https://salsa.debian.org/debian/greetings.git

Package: greetings
Architecture: any
Depends: ${shlibs:Depends}, ${misc:Depends}
Description: <insert up to 60 chars description>
 <insert long description, indented with spaces>
```



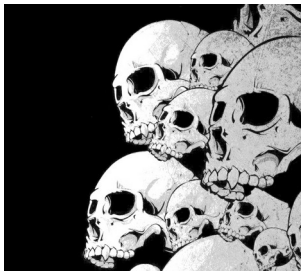
Générer un paquet

Before that, we need to install some required packages :
apt-get install debhelper dh-make devscripts
apt-get install autoconf automake autotools-dev
apt-get install fakeroot lintian
apt-get install patch patchutils pbuilder
apt-get install g++
apt-get install quilt

Then :

mkdir -p package/greetings-0.1
cd package/greetings-0.1/
vi hi.sh
chmod a+x hi.sh

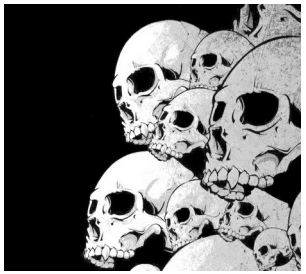
dh_make --indep --createorig	generate the debian repo with initial files
ls debian/	
rm debian/*.ex debian/*.EX	cleanup
vi debian/install	add ‘hi.sh /usr/bin’ to tell debian to install hi.sh
debuild -us -uc	start package building



Générer un paquet

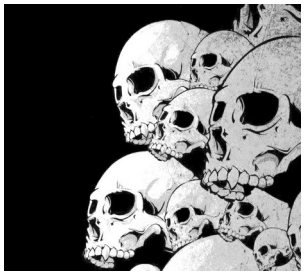
The files generated by debuild :

greetings-0.1/*
greetings_0.1-1_all.deb
greetings_0.1-1_amd64.build
greetings_0.1-1_amd64.buildinfo
greetings_0.1-1_amd64.changes
greetings_0.1-1.debian.tar.xz
greetings_0.1-1.dsc
greetings_0.1.orig.tar.xz



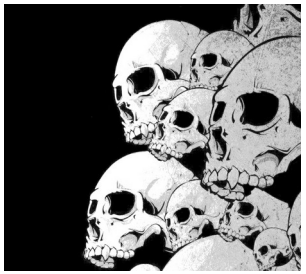
Patcher un paquet Quilt

Ajouter les patches au paquet :



pbuilder
Packager dans un chroot

```
/sbin/pbuilder --create
/sbin/pbuilder --build --basetgz
/var/cache/pbuilder/base.tgz
/home/artelys/package/greetings_0.1-1.dsc
```



Ressources

Guide du packageur :
https://www.debian.org/doc/manuals/maint-guide/dreq.fr.html

Utilisation de Quilt :
https://wiki.debian.org/UsingQuilt

Utilisation de pbuilder :
https://doc.ubuntu-fr.org/pbuilder

Configurer un dépôt local :
https://wiki.debian.org/DebianRepository/Setup
https://wiki.debian.org/DebianRepository/SetupWithReprepro

Configurer les dépôts :
https://linuxhint.com/how-to-add-a-package-repository-to-debian/