Debian Configuration Packages

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Outline

Debian Configuration Packages

- Debian configuration files
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- Replacing a config file
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- Transforming files
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Debian configuration files

There are two classes of configuration files in Debian:

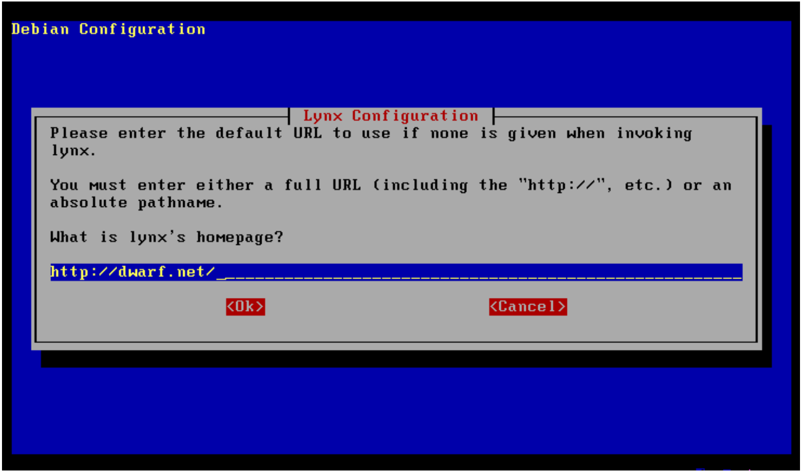
- Debian "conffiles", shipped in `.deb`, handled by `dpkg`
- Generated configuration files: with `debconf`, `ucf`, or ad hoc

Debian configuration files: conffiles

```
Setting up debathena-kerberos-config (1.0debathena5~debian4.0) .

Configuration file `/etc/krb5.conf.debathena'
 ==> Modified (by you or by a script) since installation.
 ==> Package distributor has shipped an updated version.
   What would you like to do about it ?  Your options are:
    Y or I  : install the package maintainer's version
    N or O  : keep your currently-installed version
      D     : show the differences between the versions
      Z     : background this process to examine the situation
 The default action is to keep your current version.
*** krb5.conf.debathena (Y/I/N/O/D/Z) [default=N] ? Y
Installing new version of config file /etc/krb5.conf.debathena .
```

Debian configuration files: debconf



Please enter the default URL to use if none is given when invoking lynx.

You must enter either a full URL (including the "http://", etc.) or an absolute pathname.

What is lynx's homepage?

http://dwarf.net/

Ways to do site configuration

- Preseed files (debconf-get-selections)
- Private apt repository with modified upstream packages
- cfengine, systemimager, bcfg2, puppet, etc.
- Configuration packages (this talk)

Replacing a config file: `dpkg-divert`

- First try: just ship the new file.
- That gets clobbered when the original package is upgraded.
- Solution: “divert” the file, renaming it for other packages.
- So if we diverted dpkg to dpkg.divert, whenever we get a new version of dpkg, it gets installed at dpkg.divert.
- Designed for use in the /etc/alternatives system
- Only changes for unpacking, not for maintainer scripts
- `DEB_DIVERT_FILES`, `DEB_TRANSFORM_FILES`

Replacing a config file: diverting /etc/ldap/ldap.conf

```
$ dpkg-divert --list | grep ldap
diversion of /etc/ldap/ldap.conf to
 /etc/ldap/ldap.conf.debathena-orig
 by debathena-ldap-config

$ ls -l /etc/ldap/* | sed 's,.*/,/,'
/ldap.conf -> ldap.conf.debathena
/ldap.conf.debathena
/ldap.conf.debathena-orig
```

On install,

- `ldap.conf` was moved to `...debathena-orig`
- `ldap.conf.debathena` was unpacked
- the symlink was added

dpkg-divert problems with generated config files

- dpkg-divert works great for conffiles
- For debconf/etc packages, less clear.

dpkg-divert problems with generated config files

Debian Policy, Section 10.7.3

Configuration file handling must conform to the following behavior:

- local changes must be preserved during a package upgrade
- configuration files must be preserved when the package is removed, and only deleted when the package is purged.

...

dpkg-divert problems with generated config files

```
$ cat /var/lib/dpkg/info/libhesiod0.postinst
if [ ! -f $hesconf ]; then
  ...
else
  sed -e "s/^lhs=.*/lhs=$lhs/" \
      -e "s/^rhs=.*/rhs=$rhs/" \
      -e "s/^classes=.*/classes=$classes/" \
      < $hesconf > $hesconf.new
  mv -f $hesconf.new $hesconf
fi
```

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- Have to install modified configuration file

Example: debathena-ldap-config

$ cat debian/rules

```
#!/usr/bin/make -f

DEB_AUTO_UPDATE_DEBIAN_CONTROL = 1
DEB_DIVERT_EXTENSION = .debathena
DEB_TRANSFORM_FILES_debathena-ldap-config += \
        /etc/ldap/ldap.conf.debathena
include /usr/share/cdbs/1/rules/debhelper.mk
include /usr/share/cdbs/1/rules/config-package.mk
```

$ cat debian/transform_ldap.conf.debathena

```
#!/usr/bin/perl -0p
s/^#BASE.*$/BASE\tdc=mit, dc=edu/m or die;
s/^#URI.*$/URI\tldap:\/\/ldap.mit.edu\nTLS_CACERT\t\/usr\/share\
```