NAME

dpkg - Debian Linux package maintenance utility

SYNOPSIS

dpkg

dpkg [-a --add] *package* <*device*> <*filesystem_type*> <*directory*>
[-u --upgrade] *package* <*device*> <*filesystem_type*> <*directory*>
[-r --rm] *package*
[-b --backup] [-o --original]
[-p --process] *device filesystem_type* <*directory*>

dpkg [-c --contents] [-d --describe] [-f --fix]
[-i --integrity] [-v --version] *package*
[-s --search] *file*

DESCRIPTION

dpkg is a flexible and powerful package maintenance utility. It allows the system administrator to easily install, track, upgrade and remove packages in Debian pkg (dpkg) format. *dpkg* may either be run interactively (to generate a list of packages to install as a batch, called the package selection mode) or from the command line (to process the list generated from the package selection mode, to manipulate individual packages or to obtain information about a package or specific files from an installed package).

INTERACTIVE PACKAGE SELECTION MODE

When invoked without arguments, *dpkg* enters package selection mode. The first menu describes the categories of packages that are available for the Debian Linux distribution (this will be customizable in future versions to allow other distributions to use the utility without significant changes to the source code). Entire categories may be selected from this menu, and every package available in that category will be installed onto the system. Certain categories default to one selected package each; for example, only one package each from the 'dict' and 'Xserver' categories will normally be installed per site.

If desired, a second menu for each category may be accessed that will describe each individual package within that category. Individual packages may be selected or deselected from this menu. For example, if the administrator wishes to install the entire 'devel' category, but does not wish to install the 'rcs' package within that category, he or she may deselect it from this menu. As another example, the administrator may wish to install more than one package from 'dict' or 'Xserver'.

When selecting packages from the second menu, you will notice that certain packages are marked '[REQ]' and that others are marked '[CHO]'. The former are packages that are REQuired to be installed from that category; the latter indicates that you have a CHOice and may choose to install one, some or all of the packages, but that you must choose at least one.

dpkg uses the information provided by the administrator in package selection mode to generate a batch list. Once the selection process is complete this list can be processed at any time by invoking the following from the command line:

```
# dpkg --process <device> <filesystem_type> <directory>
```

Refer to the description of the *-p,--process* option below for further details.

COMMAND LINE OPTIONS

package
The name of the package without the '.deb' extension. For example, if you want to install 'groff.deb' you would specify 'groff' as *package*.

device The full path of the installation device to use; for example, '/dev/fd0' or '/dev/hda1'. If omitted, *dpkg* does not attempt to access an unmounted device and will only search in mounted filesystems.

directory
: The directory containing the Debian pkg file(s). If omitted, *dpkg* searches the current directory (if *device* is not specified) or the root of the installation device (if *device* is specified).

file
: The full path of the file to locate (see *-s,--search*).

filesystem_type
: The filesystem of the installation device; for example, minix, ext2 or msdos. If not specified minix is assumed.

-a,--add
: Install the package *package*. If *device* is specified, then *dpkg* attempts to install from *device*; otherwise, it checks for the existence of *package* in *directory*, if specified, or the current directory if *directory* is not specified. Examples:

To install the package 'rcs' from the current directory:
    # dpkg -a rcs

To install the package 'rcs' from the directory '/var/tmp':
    # dpkg -a rcs /var/tmp

To install the package 'rcs' from the root directory of the unmounted
device '/dev/fd0' (minix filesystem):
    # dpkg -a rcs /dev/fd0 minix

To install the package 'rcs' from the directory '/debian/packages' of
the unmounted device '/dev/hda1' (MS-DOS filesystem):
    # dpkg -a rcs /dev/hda1 msdos /debian/packages

-b,--backup
: Copy the backup package lists (automatically created after *-p,--process*) into the master package lists used in the interactive selection process. This is useful for situations in which the master package lists are accidentally destroyed. It can also be used to "undo" *-b,--backup* and *-o,--original*.

-c,--contents
: Display the contents of the installed package *package* in *ls -adl* format. This is useful for determining which files on the system came from a certain package. For example:

```
# dpkg -c bc
-rwxr-xr-x   1 root   bin     46576 Jan 18 00:45 /usr/bin/bc
-r--r--r--   1 root   man     31471 Jan 21 00:44 /usr/man/man1/bc.1
-r--r--r--   1 root   root      110 Jan 24 10:51 /var/adm/dpkg/list/bc.list
-rw-r--r--   1 root   root      185 Jan 24 10:44 /var/adm/dpkg/perm/bc.perm
-r--r--r--   1 root   root        5 Jan 24 09:27 /var/adm/dpkg/ver/bc.ver
```

-d,--describe
: Describe the package *package*. This option can be used to obtain the descriptions of all available packages for the Debian Linux distribution (that your particular system knows about, anyway). It will also report whether or not that package is currently installed on the system. For example:

```
# dpkg -d bc

Package:      bc
Category:     util

Name:         GNU bc
Version:      1.02

Description:   An arbitrary precision calculator language
```

'bc' is currently installed on the system.

-f,--fix Change the permissions and ownerships of all files from the installed package *package* to their correct values.

-h,--help
Display a helpful message.

-i,--integrity
Check the integrity of the installed package *package*. This option checks to make sure that all files from *package* exist on the system and that their permissions and ownerships are correct.

-l,--list Display a list of all installed packages and their versions.

-o,--original
Copy the original (empty) package lists into the master package lists used in the interactive selection process. This is useful for situations in which the master package lists are accidentally destroyed or a "fresh start" is needed.

-p,--process
Process the list generated when *dpkg* is run interactively in package selection mode. This option installs any packages or categories of packages that have been selected to be installed as specified in the list and keeps a log of errors to allow for unattended operation. *device* and *filesystem_type* must be specified; *directory* is optional. For example:

```
# dpkg -p /dev/fd0 msdos
# dpkg -p /dev/hda8 ext2 /debian/packages
```

-r,--rm Remove the installed package *package*.

-s,--search
Determine from which package the file *file* came. For example:

```
# dpkg -s /usr/bin/ident
/usr/bin/ident is from the package 'rcs'.
```

-u,--upgrade
Upgrade the installed package *package*. If *device* is specified, then *dpkg* attempts to upgrade from *device*; otherwise, it checks for the existence of *package* in *directory*, if specified, or the current directory if *directory* is not specified.

-v,--version
Display the version of the package *package*.

NOTES

dpkg is nowhere near complete. I plan to add several features, including support for installation and tracking of packages from other distributions (SLS, Slackware, etc.) and 'independent' packages. I also plan to add a feature that will enable the administrator to update the package data files if he or she doesn't like where I put certain files and wants to move them around in the filesystem (though this is notably dangerous and will break certain binaries).

FILES

*.deb Debian Linux packages in gzipped cpio format.

/sbin/pkg
The **dpkg** script.

/sbin/fixperms
The **fixperms** executable.

/var/adm/dpkg/debian/
The directory containing the master category and package files.

/var/adm/dpkg/dep/
: The directory containing package dependency files. A package dependency occurs when one package’s operation is dependent on the presence of another package; for example, the ‘man’ package requires the existence of the ‘groff’ package to format man pages. The dependencies inform the administrator when a package’s removal will break another.

/var/adm/dpkg/desc/
: The directory containing package descriptions.

/var/adm/dpkg/inst/
: The directory containing temporary package installation scripts.

/var/adm/dpkg/list/
: The directory containing the package filelists.

/var/adm/dpkg/perm/
: The directory containing the package permlists.

/var/adm/dpkg/ver/
: The directory containing the package version information.

SEE ALSO

cpio(1), fixperms(8), gzip(1)

BUGS

fixperms doesn’t report incorrect ownerships when checking integrity.

This version is terribly slow. It needs to (and will) be rewritten in C. The functionality will remain the same.

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