

# PTXdist Application Note

## Maintaining Deployed Targets

PTXdist supports ipkg as a packet manager to maintain deployed targets. This application note describes how to use this packet manager on the target.



## The IPKG Tool

The `ipkg` command is intended to control target's software configuration. This tool helps to install new programs or data, remove or update them.

It bases on `ipkg` packages PTXdist builds when the command `ptxdist go` is running. We can find all project specific packages in the active project `images/` folder. When we create our root filesystem image these packages will be used to build the image.

We also can use these packages to change the software configuration on an already deployed target. To add a new package or to update an existing one, we only must ensure we can upload the `ipkg` package into our target.

So it might be a good idea to install at least an `ftp` daemon for the upload. Or - if security is an issue - using an `SSH` daemon instead. For remote maintainance we also need console access through something like `telnet` or - better - a secure shell.

But in both cases we should consider there is enough free space remaining on a local store for the `ipkg` packet and its contents. To add a new package we need twice the size of the package left on the local store: The `ipkg` package itself and while installing its contents also. After install is finished the `ipkg` package can be removed.

## Enabling IPKG

Navigate to **Disk and File Utilities** and enable **ipkg**. Enter `ipkg`'s submenu and check if the **install /etc/ipkg.conf** is enabled. To make `ipkg` work at runtime, this configuration file is required.

If we want `ipkg` to download requested packages by its own, we must enter a valid URL into the `ipkg.conf` file configuration. In this case we must also enable one of the possible `wget` implementations in PTXdist. One is part of **busybox (Shell & Console Tools, BusyBox, Networking Utilities)** the other is the native release (**Networking Tools**).



The `ipkg` can only be used in images created by `ptxdist images`. It's not fully working within the `root/` subdirectory used as NFS root filesystem.

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## Working with IPKG packages

When the preparation is done and `ipkg` is present on the target system, it can help to maintain the target's application configuration.

### What's Installed in the System

To get a list of already installed packages use the informational command `list_installed`:

```
~$ ipkg list_installed
busybox - 1.1.3 -
figlet - 222 -
gcclibs - 4.1.1 -
gdbserver - 6.4 -
glib - 2.8.6 -
glibc - 2.5 -
ipkg - 0.99.163 -
ixp-firmware - 1 -
kernel-modules - 2.6.18 -
libxml2 - 2.6.27 -
```

```
mc - 4.6.1 -
memedit - 0.7 -
ncurses - 5.5 -
pciutils - 2.2.1 -
pureftpd - 1.0.21 -
readline - 5.0 -
rootfs - 1.0.0 -
strace - 4.5.14-20061101 -
udev - 088 -
zlib - 1.2.3 -
Successfully terminated.
```

## Package's contents

To see what files are part of an installed package use the informational command *files*:

```
~$ ipkg files udev
Package udev (106) is installed on root and has the following files:
/etc/init.d/udev
/sbin/udevtrigger
/etc/udev/udev.conf
/etc/rc.d/S00_udev
/sbin/udev
/sbin/udevsettle
```

Successfully terminated.

## Adding a Package

To add a new package or replace an already installed one we need the ipkg package itself and we must run this command to add its contents into the system:

```
~$ ipkg install <package-name>.ipk
```

Note the trailing *.ipk*. This extension must be given, if the package file is already part of the filesystem. Otherwise *ipkg* tries to download it from the URL configured in */etc/ipkg.conf*

## Removing a Package

To remove the contents of a package from the running system, ensure that nothing from the package is currently in use. With:

```
~$ ipkg list
```

we can get the correct package name and with

```
~$ ipkg remove <package-name>
```

we will remove its contents from the running system.

## Upgrading a Package

To upgrade a package we first have to remove its current contents from our running system. In a second step we install the contents of the new ipkg package.

```
~$ ipkg list
~$ ipkg remove <package-name>
~$ ipkg install <package-name>[.ipk]
```

## Additional questions?

Below a list of locations where you can get help in case of trouble or questions how to do something special within PTXdist or general questions about Linux in the embedded world.

## Mailing Lists

### About PTXdist in special

This is an english language public mailing list for questions about PTXdist. See web site

[http://www.pengutronix.de/maillinglists/index\\_en.html](http://www.pengutronix.de/maillinglists/index_en.html)

how to subscribe to this list. If you want to search through the mailing list archive, visit

<http://www.mail-archive.com/>

and search for the list *ptxdist*.

### About embedded Linux in general

This is a german language public mailing list for general questions about Linux in embedded environments. See web site

[http://www.pengutronix.de/maillinglists/index\\_de.html](http://www.pengutronix.de/maillinglists/index_de.html)

how to subscribe to this list. Note: You also can send english language mails.

## News Groups

### About Linux in embedded environments

This is an english language news group for general questions about Linux in embedded environments.

**comp.os.linux.embedded**

### About general Unix/Linux questions

This is a german language news group for general questions about Unix/Linux programming.

**de.comp.os.unix.programming**

## Chat/IRC

### About PTXdist in special

**irc.freenode.net:6667**

Create a connection to the **irc.freenode.net:6667** server and enter the chat group **#ptxdist**. This is an english language group to answer questions about PTXdist. Best time to meet somebody in there is at european daytime.

## Miscellaneous

### Online Linux Kernel Cross Reference

A powerful cross reference to be used online.

<http://lxr.linux.no/blurb.html>

### U-Boot manual (partially)

Manual how to survive in an embedded environment and how to use the U-Boot on target's side

<http://www.denx.de/wiki/DULG>

## Commercial Support

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**Pengutronix**  
**Hannoversche Strasse 2**  
**D-31134 Hildesheim**  
**Germany**  
**Phone: +49 - 51 21 / 20 69 17 - 0**  
**Fax: +49 - 51 21 / 20 69 17 - 9**

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Pengutronix e.K.  
Hannoversche Strasse 2  
D-31134 Hildesheim  
Germany

Phone: +49 - 51 21 / 20 69 17 - 0  
Fax: +49 - 51 21 / 20 69 17 - 9

