

PTXdist Application Note

Migration from previous PTXdist releases

Whenever Pengutronix announces a new release of its *Automatic Build System for Embedded Linux Projects* (called PTXdist) it's time for many people to think about migrating their projects to this new release.

This application note describes the migration process up to PTXdist-1.0.1.



Project Migration

This information should help to easily migrate projects from any older PTXdist release to the current release.

Basic steps to migrate

Here are the basics steps to do to migrate an existing project from a previous PTXdist to a current PTXdist of the same major release.

1. We should first examine the Changelog file of the new PTXdist release if a packet behaviour was changed and if this affects our project.
2. We open the `ptxconfig` file with our favourite editor and navigate to the variable definition `PTX-CONF.CONFIGFILE.VERSION`
3. We are replacing this revision definition by the current PTXdist revision we like to work with. We will get the current PTXdist revision by entering

```
$ ptxdist --version
```

If any packet behaviour was changed and it affects our project we should analyse carefully how to change the project configuration to get back the previous behaviour. This is the most important part, due to it can break our project.

For example: In previous releases many configuration files in `etc/` where only of a generic type. To get project specific files included it was necessary to generate an additional rule file to do the job. Newer PTXdist releases support this out of the box. So its time to decide to use this new feature and throw away the additional rule file, or to switch off the new feature and continue to use the additional rule file.

To get the new features we only run the menu and save the new configuration. Alternatively we could run a `ptxdist oldconfig` instead.

```
$ ptxdist menuconfig
```

You should examine carefully the resulting configuration. Due to variable name changes or packet version updates the old configuration may fail or misses something.

Simple migration

Migrate a configuration from 1.0.x To migrate from a previous `ptxdist-1.0.x` project to any `ptxdist` revision `1.0.(x+y)` we simply start the `menuconfig` step. This will adapt our current `ptxconfig` file to the new `ptxdist` release. As this releases are stable releases, no further user intervention is required.

Harder migration

Migrate a configuration from 0.10.6 To reuse a 0.10.6 configuration file only change the `PTX-CONF.CONFIGFILE.VERSION` to the newer 1.0.x release. `ptxdist-1.0.x` is at most a 0.10.6 release with bug fixes.

Migrate a configuration from prior 0.10.5 Kernel configuration variables names are changed. So every 0.10.4 project needs to be reconfigured, if user specific values are in use:

- kernel version
- kernel patch control file name
- kernel configuration file name
- kernel image type to build

If the defaults are in use, no modification is required.

Some generic methods to install configuration files were added. In previous revisions additional rule files to install some kind of local files into `etc/` where needed. Now PTXdist supports a switch for the most common configurations files. See menu `Root Filesystem, config files` if there is a generic way to install the specific files now. If so, we can remove the additional rule files.

Migrate a configuration from prior 0.10.1 To reuse a 0.10.0 configuration file two things have to be changed in this configuration file:

- change/add the variable `PTXCONF_CONFIGFILE_VERSION` to this configuration file like described in migrate from any other revision.
- replace any `$(VARIABLE)` (=parentheses) occurrence by `${VARIABLE}` (=curly brackets)

Hardest migration

The hardest update is from previous major releases. Over the time PTXdist changes project and toolchain handling, so it maybe makes sense to start with a new project and configure everything like the old project, than to import the old configuration file.

Migrate from PTXdist 0.7.x In this release the main managing concept was to combine a project and PTXdist itself into one directory. Also the rule file concept differs from the current release.

To migrate a 0.7.x project to a 0.10.x the following has to modify:

Rule files If you define any local rule file in your project, they must be replaced by a current one. If you remember what your old rule files did, you can search for a replacement in the current release. 0.10 also supports template generation for various kinds of rules files. Maybe one fits to your requirements, so generate and modify it, to be compatible to the old one.

Config file There is no way, to migrate the config file automatically. To many format and content changes are done on this file. So the only way is to open a new 0.10 project, also open the 0.7 project side by side and enable all the required features in the new 0.10 based project.

Project local files If your project contains local files like `/etc/fstab` to be copied into target's root filesystem you can use the basic features of 0.10.x to copy them. Walk through the menus, many entries support a *generic* or *user defined* file selection.

Project building The `make world` command is not valid anymore. Use the `ptxdist go` command instead. In most cases, replace any `make anything` command by the `ptxdist anything` counterpart.

Migrate from PTXdist 0.8.x There is only a very small chance that someone tries to migrate from a 0.8.x release to the current one. This is caused by the fact, the 0.8 release was only an internal release to go ahead and test new features.

Migrate from PTXdist 0.9.x In this release the main managing concept was to combine a project and PTXdist itself into one directory. Also the rule file concept differs from the current release.

To migrate a 0.9.x project to a 0.10.x the following has to modify:

Rule files If you define any local rule file in your project, they must be replaced by a current one. If you remember what your old rule files did, you can search for a replacement in the current release. 0.10 also supports template generation for various kinds of rules files. Maybe one fits to your requirements, so generate and modify it, to be compatible to the old one.

Config file There is no way, to migrate the config file automatically. To many format and content changes are done on this file. So the only way is to open a new 0.10 project, also open the 0.9 project side by side and enable all the required features in the new 0.10 based project.

Project local files If your project contains local files like `/etc/fstab` to be copied into target's root filesystem you can use the basic features of 0.10.x to copy them. Walk through the menus, many entries support a *generic* or *user defined* file selection.

Project building The `make world` command is not valid anymore. Use the `ptxdist go` command instead. In most cases, replace any `make anything` command by the `ptxdist anything` counterpart.

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

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

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

You can order immediate support through customer specific mailing lists, by telephone or also on site. Ask our sales representative for a price quotation for your special requirements.

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