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Category	■ FAQ □ SOP	Related OS	Linux
Abstract	How to compile PTPD for APAX-5522PELX		
Keyword	APAX-5522PELX, PTPD		
Related Product	APAX-5522PELX		

[Problem]

How to compile PTPD for APAX-5522PELX



[Solution]

The PTP daemon (PTPd) implements the Precision Time protocol (PTP) as defined by the relevant IEEE 1588 standard .

1. Install tool chain

Install cross compile tool, please copy it to the “/” folder, and then execute the following command to install it:

```
# tar jxvf arm-unknown-linux-gnueabi-4.2.2.tar.bz2
```

After the installation, the development environment will be established.

You may execute “arm-unknown-linux-gnueabi-gcc -v” to check the development environment is successfully installed if you can see a similar message as below:

```
adv@adv-desktop: ~  
File Edit View Terminal Help  
adv@adv-desktop:~$ arm-unknown-linux-gnueabi-gcc -v  
Using built-in specs.  
Target: arm-unknown-linux-gnueabi  
Configured with: /tmp/crosstool-ng/targets/src/gcc-4.2.2/configure --build=i686-build_pc-linux-gnu --host=i686-build_pc-linux-gnu --target=arm-unknown-linux-gnueabi --prefix=/usr/local --with-sysroot=/usr/local/arm-unknown-linux-gnueabi//sys-root --enable-languages=c,c++,java --disable-multilib --with-arch=armv5t --with-tune=xscale --with-float=soft --disable-sjlj-exceptions --enable-cxa_atexit --disable-libmudflap --enable-threads=posix --enable-target-optspace --with-local-prefix=/usr/local/arm-unknown-linux-gnueabi//sys-root --disable-nls --enable-symvers=gnu --enable-c99 --enable-long-long  
Thread model: posix  
gcc version 4.2.2  
adv@adv-desktop:~$
```

2. Download source code and decompression file

Please execute the following command.

```
# wget  
http://sourceforge.net/projects/ptpd/files/ptpd/2.3.1/ptpd-2.3.1-rc1.tar.gz/download
```

```
# tar zxvf download
```



3. Change work directory to ptpd-2.3.1-rc1

```
# cd ptpd-2.3.1-rc1
```

4. Install prerequisite library

According to "INSTALL" file in ptpd-2.3.1-rc1, we need to install GNU autotools (automake, autoconf, libtool).

```
# sudo apt-get install automake autoconf libtool
```

```

advlinux@advlinux-VirtualBox: ~
advlinux@advlinux-VirtualBox:~$ sudo apt-get install automake autoconf libtool
正在讀取套件清單... 完成
正在重建相依關係
正在讀取狀態資料... 完成
autoconf 已經是最新版本了。
automake 已經是最新版本了。
libtool 已經是最新版本了。
以下套件為自動安裝，並且已經無用：
  linux-headers-3.2.0-29 linux-headers-3.2.0-29-generic-pae
使用 'apt-get autoremove' 來將其移除。
升級 0 個，新安裝 0 個，移除 0 個，有 433 個未被升級。
advlinux@advlinux-VirtualBox:~$

```

5. Generate configure file

```
# autoreconf -vi
```

```

advlinux@advlinux-VirtualBox: ~/ptpd-2.3.1-rc1
advlinux@advlinux-VirtualBox:~/ptpd-2.3.1-rc1$ autoreconf -vi
autoreconf: Entering directory `.'
autoreconf: configure.ac: not using Gettext
autoreconf: running: aclocal -I m4
autoreconf: configure.ac: tracing
autoreconf: running: libtoolize --install --copy
libtoolize: `build-aux/config.guess' is newer: use `--force' to overwrite
libtoolize: `build-aux/config.sub' is newer: use `--force' to overwrite
libtoolize: `build-aux/install-sh' is newer: use `--force' to overwrite
autoreconf: running: /usr/bin/autoconf
autoreconf: running: /usr/bin/autoheader
autoreconf: running: automake --add-missing --copy --no-force
src/Makefile.am:25: compiling `dep/ipv4_acl.c' in subdir requires `AM_PROG_CC_C_0' in `configure.ac'
autoreconf: Leaving directory `.'
advlinux@advlinux-VirtualBox:~/ptpd-2.3.1-rc1$

```

6. Generate make file

```
# export ac_cv_func_malloc_0_nonnull=yes
```

./configure --host=arm-unknown-linux-gnueabi

```

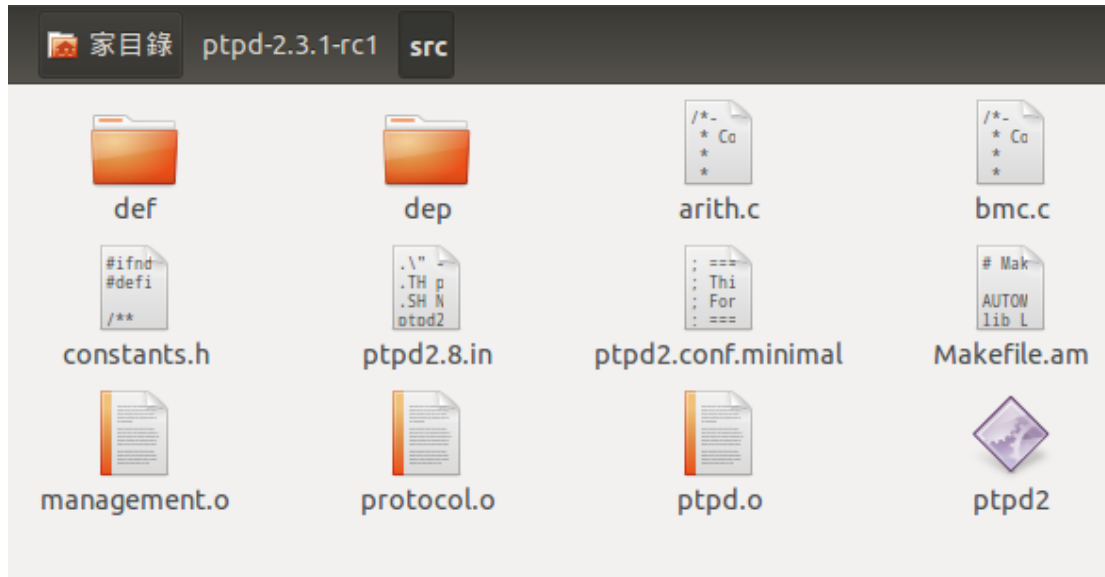
advlinux@advlinux-VirtualBox:~/ptpd-2.3.1-rc1$ ./configure --host=arm-unknown-li
linux-gnueabi
configure: WARNING: if you wanted to set the --build type, don't use --host.
If a cross compiler is detected then cross compile mode will be used
checking for a BSD-compatible install... /usr/bin/install -c
checking whether build environment is sane... yes
checking for arm-unknown-linux-gnueabi-strip... arm-unknown-linux-gnueabi-strip
checking for a thread-safe mkdir -p... /bin/mkdir -p
checking for gawk... no
checking for mawk... mawk
checking whether make sets $(MAKE)... yes
checking for gawk... (cached) mawk
checking for arm-unknown-linux-gnueabi-gcc... arm-unknown-linux-gnueabi-gcc
checking whether the C compiler works... yes
checking for C compiler default output file name... a.out
checking for suffix of executables...
checking whether we are cross compiling... yes
checking for suffix of object files... o
checking whether we are using the GNU C compiler... yes
checking whether arm-unknown-linux-gnueabi-gcc accepts -g... yes
checking for arm-unknown-linux-gnueabi-gcc option to accept ISO C89... none need
ed
checking for style of include used by make... GNU

```

7. Compile source code

make ARCH=arm

You'll find binary file under src directory



8. Note

If you meet the error condition when make process as below, you can refer the below steps

```

advlinux@advlinux-VirtualBox: ~/下載/ptpd-2.3.1-rc1
h.c &&\
mv -f $depbased.Tpo $depbased.Po
In file included from /usr/local/lib/gcc/arm-unknown-linux-gnueabi/4.2.2/../../../../arm-unknown-li
nux-gnueabi/include/asm/types.h:4,
    from /usr/src/linux-headers-3.2.0-49-generic-pae/include/linux/types.h:4,
    from /usr/src/linux-headers-3.2.0-49-generic-pae/include/linux/if_ether.h:24,
    from /usr/local/lib/gcc/arm-unknown-linux-gnueabi/4.2.2/../../../../arm-unknown-li
nux-gnueabi/include/net/ethernet.h:27,
    from ptpd.h:70,
    from arith.c:53:
/usr/src/linux-headers-3.2.0-49-generic-pae/include/asm-generic/int-ll64.h:11:29: error: asm/bitspe
rlong.h: No such file or directory
In file included from /usr/src/linux-headers-3.2.0-49-generic-pae/include/linux/if_ether.h:24,
    from /usr/local/lib/gcc/arm-unknown-linux-gnueabi/4.2.2/../../../../arm-unknown-li
nux-gnueabi/include/net/ethernet.h:27,
    from ptpd.h:70,
    from arith.c:53:
/usr/src/linux-headers-3.2.0-49-generic-pae/include/linux/types.h:13:2: warning: #warning "Attempt
to use kernel headers from user space, see http://kernelnewbies.org/KernelHeaders"
make[2]: *** [arith.o] Error 1
make[2]: Leaving directory `/home/advlinux/下載/ptpd-2.3.1-rc1/src'
make[1]: *** [all-recursive] Error 1
make[1]: Leaving directory `/home/advlinux/下載/ptpd-2.3.1-rc1'
make: *** [all] Error 2
advlinux@advlinux-VirtualBox:~/下載/ptpd-2.3.1-rc1$ export ac_cv_func_malloc_0_nonnull=yes
advlinux@advlinux-VirtualBox:~/下載/ptpd-2.3.1-rc1$ ./configure --host=arm-unknown-linux-gnueabi
configure: WARNING: if you wanted to set the --build type, don't use --host.

```

```

advlinux@advlinux-VirtualBox: ~
advlinux@advlinux-VirtualBox:~$ sudo vi /usr/src/linux-headers-`uname -r`/include/asm-generic/int-ll64.h

```

```

advlinux@advlinux-VirtualBox: ~
/*
 * asm-generic/int-ll64.h
 *
 * Integer declarations for architectures which use "long long"
 * for 64-bit types.
 */
#ifndef _ASM_GENERIC_INT_LL64_H
#define _ASM_GENERIC_INT_LL64_H

// #include <asm/bitsperlong.h>
#include <asm-generic/bitsperlong.h>

#ifndef __ASSEMBLY__
/*
 * __xx is ok: it doesn't pollute the POSIX namespace. Use these in the
 * header files exported to user space
 */
typedef __signed__ char __s8;
typedef unsigned char __u8;

typedef __signed__ short __s16;
-- 插入 --

```