libretools - Bug #791

Support cross-compiling for other architectures without need extra dependencies

2015-08-20 08:33 AM - Anonymous

Status:	fixed	**% Done:**	100%
Priority:	feature		
Assignee:	lukeshu		
Category:	ARM on x86		

Description

Add cross-compiling support to build multiple architectures without need extra dependencies

- support cross-compiling configuration
- no need extra dependencies like libretools-mips64el
- no need extra steps to build and upload packages
- easy to use libremakepkg/librestage/librerelease

https://labs.parabola.nu/issues/787

Related issues:

Related to dbscripts - Bug #808: Package [dbscripts] similarly to libretools ...	**fixed**	**2015-09-22**
Blocked by libretools - Porting #787: [librechroot] Support ARM chroots on x8...	**fixed**	**2015-08-19**

History

#1 - 2015-08-20 06:03 PM - Anonymous

- Related to Porting #787: [librechroot] Support ARM chroots on x86 via QEMU added

#2 - 2015-09-07 10:31 PM - Anonymous

coadde wrote:

> Add cross-compiling support to build multiple architectures without need extra dependencies
>
> - support cross-compiling configuration
> - no need extra dependencies like libretools-mips64el
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> https://labs.parabola.nu/issues/787

Add pacman flags, example:

- CC and CPP (for native-gcc, crosscompiling-gcc and clang support)
- TARCH (for package-tarball build [*-${TARCH}.pkg.tar.xz])
- CTARGET (for cross-compiling compilation):

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example - (crosscompiling_build-mips64el):

```
#########################################################################
# ARCHITECTURE, COMPILE FLAGS
#########################################################################
#
CC=mips64el-unknown-linux-gnu-gcc
CPP=mips64el-unknown-linux-gnu-g++
CARCH="x86_64"
TARCH="mips64el"
CHOST="x86_64-unknown-linux-gnu"
CTARGET="mips64el-unknown-linux-gnu"

#-- Compiler and Linker Flags
# -march (or -mcpu) builds exclusively for an architecture
# -mtune optimizes for an architecture, but builds for whole processor family
CPPFLAGS="-D_FORTIFY_SOURCE=2"
CFLAGS="-march=mips64el -mtune=generic -O2 -pipe -fstack-protector-strong --param=ssp-buffer-size=4"
```

```
CXXFLAGS="-march=mips64el -mtune=generic -O2 -pipe -fstack-protector-strong --param=ssp-buffer-size=4"
LDFLAGS="-Wl,-O1,--sort-common,--as-needed,-z,relro,--hash-style=gnu"
#-- Make Flags: change this for DistCC/SMP systems
MAKEFLAGS="-j4"
#-- Debugging flags
DEBUG_CFLAGS="-g -fvar-tracking-assignments"
DEBUG_CXXFLAGS="-g -fvar-tracking-assignments"
```

---

example - (native_build-x86_64):

```
########################################################################
# ARCHITECTURE, COMPILE FLAGS
########################################################################
#
CC=gcc
#CC=clang
CPP=g++
#CPP=clang++
CARCH="x86_64"
TARCH="${CARCH}"
CHOST="x86_64-unknown-linux-gnu"
CTARGET="${CHOST}"

#-- Compiler and Linker Flags
# -march (or -mcpu) builds exclusively for an architecture
# -mtune optimizes for an architecture, but builds for whole processor family
CPPFLAGS="-D_FORTIFY_SOURCE=2"
CFLAGS="-march=x86-64 -mtune=generic -O2 -pipe -fstack-protector-strong --param=ssp-buffer-size=4"
CXXFLAGS="-march=x86-64 -mtune=generic -O2 -pipe -fstack-protector-strong --param=ssp-buffer-size=4"
LDFLAGS="-Wl,-O1,--sort-common,--as-needed,-z,relro,--hash-style=gnu"
#-- Make Flags: change this for DistCC/SMP systems
MAKEFLAGS="-j4"
#-- Debugging flags
DEBUG_CFLAGS="-g -fvar-tracking-assignments"
DEBUG_CXXFLAGS="-g -fvar-tracking-assignments"
```

#3 - 2015-09-23 01:49 AM - Anonymous

- Related to Bug #807: [librechroot] Support using proot to call QEMU for foreign architectures added

#4 - 2015-09-23 01:50 AM - Anonymous

- Related to Bug #808: Package [dbscripts] similarly to libretools for easy use in Parabola server added

#5 - 2015-09-23 01:51 AM - Anonymous

- Related to Bug #790: Add support QEMU in chroot on nonnative architecture to build other systems without need to use cross-compiling added

#6 - 2016-04-15 11:14 PM - lukeshu

- Subject changed from Add cross-compiling support to build multiple architectures without need extra dependencies to Support cross-compiling for other architectures without need extra dependencies

I'm down with most of this, but I'm not sure about dropping having a libretools-cross-${CARCH} (or somesuch) for cross-compiling. For one, it'd be silly to require qemu be installed on an ARM device to cross-compile for ARM. Similarly, it'd be silly to require that qemu be installed on ARM devices to cross-compile for x86, since ARM devices are typically under-powered.

#7 - 2016-04-15 11:31 PM - lukeshu

- Related to deleted (Bug #807: [librechroot] Support using proot to call QEMU for foreign architectures)

#8 - 2016-04-15 11:37 PM - lukeshu

- Target version set to Better ARM support

- Category set to ARM on x86

#9 - 2016-04-15 11:49 PM - lukeshu

- Related to deleted (Bug #790: Add support QEMU in chroot on nonnative architecture to build other systems without need to use cross-compiling)

#10 - 2016-04-15 11:50 PM - lukeshu

- Related to deleted (Porting #787: [librechroot] Support ARM chroots on x86 via QEMU)

#11 - 2016-04-15 11:52 PM - lukeshu

- Blocked by Porting #787: [librechroot] Support ARM chroots on x86 via QEMU added

#12 - 2016-05-31 06:22 PM - lukeshu

- Status changed from open to info needed

So, this is added, except for extra dependencies.

Is everyone ok with having the optdepend binftm-qemu-static: To build ARM packages from x86?

#13 - 2016-06-01 07:04 PM - Anonymous

yes

#14 - 2016-06-02 08:40 PM - lukeshu

- % Done changed from 0 to 100

- Status changed from info needed to fixed

Alright then!