

Setting up the recommended build environment

Overview

The recommended OS to build OpenIndiana on will always be the latest development release at the time you are building. The exception to the OS rule is for bootstrapping OpenIndiana from OpenSolaris where you should have the latest development binary release (b134) installed which can be obtained from [Genunix](#). (In case you want to upgrade an older OpenSolaris install to osol-134, follow [How to upgrade to osol-134](#)).

Setup Compiler

The recommended build environment uses a patched Sun Studio 12 to compile along side a patched Sun Studio 12.1 to provide the lint. Both compilers are available to download as tarballs from here:



These links are no longer active. Oracle has removed these packages from public view.

- [Sun Studio 12](#) (choose the Sep 2009 version)
- [Sun Studio 12u1](#) (choose the February 2010 version)

Make sure your regular user account has "pkg install/uninstall" privilege in /etc/user_attr.

```
myregularaccount:::profiles=Primary Administrator;roles=root
```

Before beginning, make sure you don't have Sun Studio installed:

```
pkg info | grep sunstu
```

If they are installed, remove. Eg:

```
pfexec pkg uninstall -r pkg://opensolaris.org/developer/sunstudioexpress \  
    pkg://opensolaris.org/sunstudioexpress \  
    pkg://opensolaris.org/ss-dev \  
    pkg://opensolaris.org/developer/sunstudio12u1
```

Keep running "pkg info | grep sunstu" and uninstalling until nothing reports back.

Then double check there is nothing under /opt related to compilers, and remove as necessary, eg:

```
ls -l /opt  
pfexec rm -rf /opt/SUNWspro /opt/sunstudio12.1 /opt/onbld  
# etc
```

Then install the tarballs:

```
pfexec mkdir /opt/SUNWspro  
cd /opt/SUNWspro  
bzip2 -dc $DOWNLOAD_LOCATION/sunstudio12-patched-ii-2009Sep-sol-{x86,sparc}.tar.bz2 | pfexec tar xvf -  
cd /opt  
gzip -dc $DOWNLOAD_LOCATION/sunstudio12u1-patched-ii-2010Feb-sol-{x86,sparc}.tar.gz | pfexec tar xvf -  
pfexec ln -s ../sunstudio12.1 /opt/SUNWspro
```

Information of installed Sun Studio Compiler for x86 platform.

```

root@oi:/opt/SUNWspro# ls -lrt
total 904990
drwxr-xr-x  3 root sys      3 2008-06-03 12:15 inventory
drwxr-xr-x 12 root sys     13 2008-06-03 12:15 man
drwxr-xr-x  2 root sys      3 2008-06-03 12:16 docs
drwxr-xr-x 21 root sys     21 2008-06-03 12:17 prod
drwxr-xr-x  2 root sys      5 2008-06-03 12:17 include
drwxr-xr-x  5 root sys      5 2008-06-03 12:17 contrib
drwxr-xr-x  2 root sys      7 2008-06-03 12:17 examples
drwxr-xr-x  2 root sys     25 2008-06-03 12:17 READMEs
drwxr-xr-x  3 root sys     95 2008-06-03 12:18 bin
drwxr-xr-x  9 root sys     40 2008-06-03 12:18 lib
drwxr-xr-x  5 root sys      5 2008-06-03 12:18 sfw
lrwxrwxrwx  1 root root      9 2011-04-01 11:37 atd1 -> prod/atd1
lrwxrwxrwx  1 root root     15 2011-04-01 11:37 LEGAL-SS12 -> prod/LEGAL-SS12
lrwxrwxrwx  1 root root     16 2011-04-01 11:40 sunstudio12.1 -> ../sunstudio12.1
root@oi:/opt/SUNWspro#

root@oi:~# cc -V
cc: Sun C 5.9 SunOS_i386 Patch 124868-10 2009/04/30
usage: cc [ options] files. Use 'cc -flags' for details
root@oi:~# which cc
/opt/SUNWspro/bin/cc
root@oi:~#

```

Note: Sun Studio 12.2 is available but **has not been tested** so please do not use at this time.

Install some packages:

```

pfexec pkg install developer/gcc-3 \
  developer/opensolaris/pkg5 \
  developer/swig \
  developer/build/automake-110 \
  developer/build/autoconf \
  developer/versioning/subversion

```

Setup Common Build Environment

1. CBE(Common Build Environment) is a RPM based software build tool but it generate SVR4 package format for OpenSolaris, Solaris 10 and prior.
2. Get CBE 1.7.0

```

svn co svn+ssh://anon@svn.opensolaris.org/svn/jds/jds-cbe/trunk jds-cbe
or from http://dlc.sun.com/osol/jds/downloads/cbe/test/

```

3. Install CBE

- a. The ./cbe-install script is not meant to be run as root. It has to be run as user with "Software Installation" or "Primary Administrator" rights! (See /etc/user_attr).

```

<snipped>
Package SUNWgpc is not installed
* Would you like the CBE installer to install this package for you? [yes] no
* Would you like to skip all missing packages? [no]: yes
* Enter the base directory (prefix) of the cbe [/opt/dtblld]: enter for default
* Would you like to do this now? [no]: enter for default
* Would you like to configure more compilers for use with the Desktop CBE? [no]: enter for default
* Please select the default compiler [3]: enter for default

Answer 'no' to all remaining questions.

```

- b. Following log is the last part of install log.

```

<snipped>
Installation of <SFpkgbuild> was successful.
Building CBEenv
INFO: Copying %use'd or %include'd spec files to SPECS directory
INFO: Processing spec files
INFO: Installing package CBEenv

Summary:

              package |      status | details
-----+-----+-----
              CBEenv |  INSTALLED |

CBE setup complete
Run
. /opt/dtbld/bin/env.sh [environment]
or
source /opt/dtbld/bin/env.csh [environment]
depending on your shell, to use this build environment.
You can also run /opt/dtbld/bin/env.sh [environment] to start subshell.
Installation log saved in /tmp/desktop-cbe-install-2011-04-06-08:58.log
oi@openindiana:~/oi/src/jds-cbe$

```

c. Set the CBE build environment by env.sh

```

oi@openindiana:~/oi/src/jds-cbe$ . /opt/dtbld/bin/env.sh
Desktop CBE version 1.7.0 built on 2011-04-06 by oi@openindiana
Unsetting USER
Unsetting LANG
Using CC=/opt/SUNWspro/bin/cc
Using CXX=/opt/SUNWspro/bin/CC
Setting PATH=/opt/dtbld/bin:/opt/SUNWspro/bin:/usr/ccs/bin:/usr/gnu/bin:/usr/bin:/usr/sbin:/bin:/usr/sfw/bin
Setting CONFIG_SHELL=/bin/bash
Setting MAKESHELL=/bin/bash
Setting MAKE=/opt/dtbld/bin/make
Setting M4=/opt/dtbld/bin/m4
oi@openindiana:~/oi/src/jds-cbe$

```

Then remove gnu make, so that (the other) make is the default. Different consolidations require different make versions so **do not remove** any binaries you install while setting up your environment. Please pay close attention to the PATH variables that are set in each consolidations build instructions.

[CBE source browser](#)

Install GNU gettext-0.16.1:

- Get <http://ftp.gnu.org/pub/gnu/gettext/gettext-0.16.1.tar.gz>
- On oi_148, Install math header by "pkg install library/math/header-math"
- install it using: `./configure --prefix=/opt/dtbld && make && pfexec make install`

Alternative: You may use pkgbuild from CBE (above).

```

[18:04] <Meths> Otherwise, cd jds-cbe-dir; pkgbuild -bb CBEgettext.spec
[18:04] <Meths> cd ~/packages/PKGS/CBEgettext/reloc
[18:05] <Meths> tar cf - * | ( cd /opt/dtbld; pfexec tar xvpf - )

```

Once you've setup and installed the recommended build environment, the build process can/shall be entirely done as user.

References

1. http://blogs.sun.com/migi/entry/opensolaris_howto_install_sun_studio