NPC on Solaris developer HOWTO

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This document explains how to install the **NetBSD package collection tools** (NPCT) on a Solaris machine **from the sources**. It's probably better to read the basic, binaries installation HOWTO before.

Each section details one compilation step. Hopefully they are independent from each other, so you can skip the specific sections where you prefer to use available binaries.

Please note that (almost) everything related to building stuff from `pkgsrc` can easily be performed only with root privileges: hence, it shouldn't be used on production machines.

Contents

1   Compiling the NPCT bootstrap kit

> **Note**
>
> The *binary kit* is just a somewhat strange synonym for the *compiled* bootstrap kit.

Download the `bootstrap-pkgsrc.tar.gz` source code, preferably from the solarpack site. The tarball from the solarpack site is generally more up-to-date, slightly patched by us, and well tested on Solaris.

TODO: release our bootstrap patches properly.

Then you need a working C compile chain. We recommend to install the linker `ld` from Solaris, GCC from the Solaris Companion CD and its dependencies, as detailed below, but you may succeed in alternate ways. For instance, you can use the linker from SFWgbin instead of SUNWtoo's `ld` if you are not afraid by fiddling with symbolic links. Or you can follow the instructions in `bootstrap-pkgsrc/README.Solaris`.

package name	description
SUNWtoo	Programming Tools (`ld`)
SFWgcc	GNU Compiler Collection
SFWgcmn	Common GNU package
SUNWsprot	Solaris Bundled tools (`make`, `as`,...)
SUNWarc	Archive Libraries
SUNWbtool	CCS tools bundled with SunOS (`nm`, `ar`,...)
SUNWhea	SunOS Header Files[1]

The SUNWxxx names identify packages from your base Solaris distribution. SFWxxx packages are located on the Companion CD. Companion CD packages can also be conveniently downloaded from most Sunfreeware's mirrors, in the `companioncd` subdirectory.

GCC from the Companion CD sits in `/opt/sfw/bin`:

```
# PATH=${PATH}:/opt/sfw/bin
```

Then follow the bootstrap instructions at NetBSD, using the following arguments to the bootstrap command:

```
# ./bootstrap --prefix=/usr/pkg --pkgdbdir=/usr/pkg/var/pkg
```

> **Important**
>
> If you decide to have your software be installed elsewhere (e.g., `--prefix=/opt`) then you will neither be able to install binaries from our repositories, nor to submit your binaries to Solarpack.

If something failed, you will have to run `./cleanup` before `./bootstrap` again. If you want to save this bootstrap kit to use it on other machines, do create a binary kit like this:

```
# cd /; tar cf /tmp/npct-SunOS-5.N-arch-date.tar /usr/pkg
```

After going through the following section, you'll have to start by building GCC from `pkgsrc` (because you don't want binaries to link with the bootstrap GCC's libraries), so that everything you build is built with the version of GCC that's inside the sandbox.

2 Getting pkgsrc

To build software, you will need those packages:

package name	description
SUNWbash	GNU Bourne-Again shell (bash)
SUNWgpch	The GNU Patch utility
SUNWsrh	Source Compatibility Header Files

```
# pkginfo SUNWbash SUNWgpch SUNWsrh
```

`pkgsrc` is a tree of Makefiles and patches that allow one to build a variety of packages from source, on many different platforms.

It's developed by the NetBSD team; we've branched off it because we need to modify it slightly in some places to make it work better on Solaris.

In the future, we will release `pkgsrc` tarballs here. For the moment, you'll have to fetch pkgsrc from Solarpack's CVS repository:

```
# cd <wherever>
# CVSROOT=:pserver:anonymous@cvs.sourceforge.net:/cvsroot/solarpack
# export CVSROOT
```

```
# cvs login
# cvs -z3 co solarpkgsrc
# ln -s <wherever>/solarpkgsrc /usr/solarpkgsrc
```

To understand `pkgsrc`, please read this [NetBSD introduction](#) or the lengthy [pkgsrc reference](#) (also available in `/usr/solarpkgsrc/Packages.txt`).

> **Note**
>
> Read `bmake` everywhere the documentation says `make` – under NetBSD, the BSD `make` utility is installed as `make`, whereas `make` on Solaris is different.

Once you've understood how things work, you can get started: an important step is to add the global `bmake` configuration file:

```
# ln -s /usr/solarpkgsrc/mk.conf /etc/mk.conf
```

Then, move to a package directory, and build it!

3   Hacks

Some shell scripts (including some of those in `pkgsrc`) use functionnality that doesn't exist in the POSIX flavor of the Bourne sheel, e.g. some of the nuts and bolts specific to GNU `bash`. Moreover, Sun's `/bin/sh` is not fully POSIX compliant – the POSIX shell is located in `/usr/xpg4/bin/sh`. For this reason, you should probably replace `/bin/sh` with `/bin/bash` or with `/usr/xpg4/bin/sh` either by linking or by replacing `/bin/sh`.

Sometimes even this doesn't work; for instance, we had to compile the `gnome-vfs` package with bmake `SH=/bin/ksh`...

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