Building self-contained PBIs from Ports (Automagically)

PBI Overview

What is a PBI?

A self-installing, self-contained software package for PC-BSD.

PBI Features

- Graphical and text based installers.

- Self-contained package, which reduces or eliminates problems with dependencies

- Self-contained directory structure allows programs to be installed to other locations on the system.

- Shell-scripting support for installation / removal routines.

- Variety of options for menu icon placement and settings.

From an end user perspective:

The PBI format – Technical Perspective

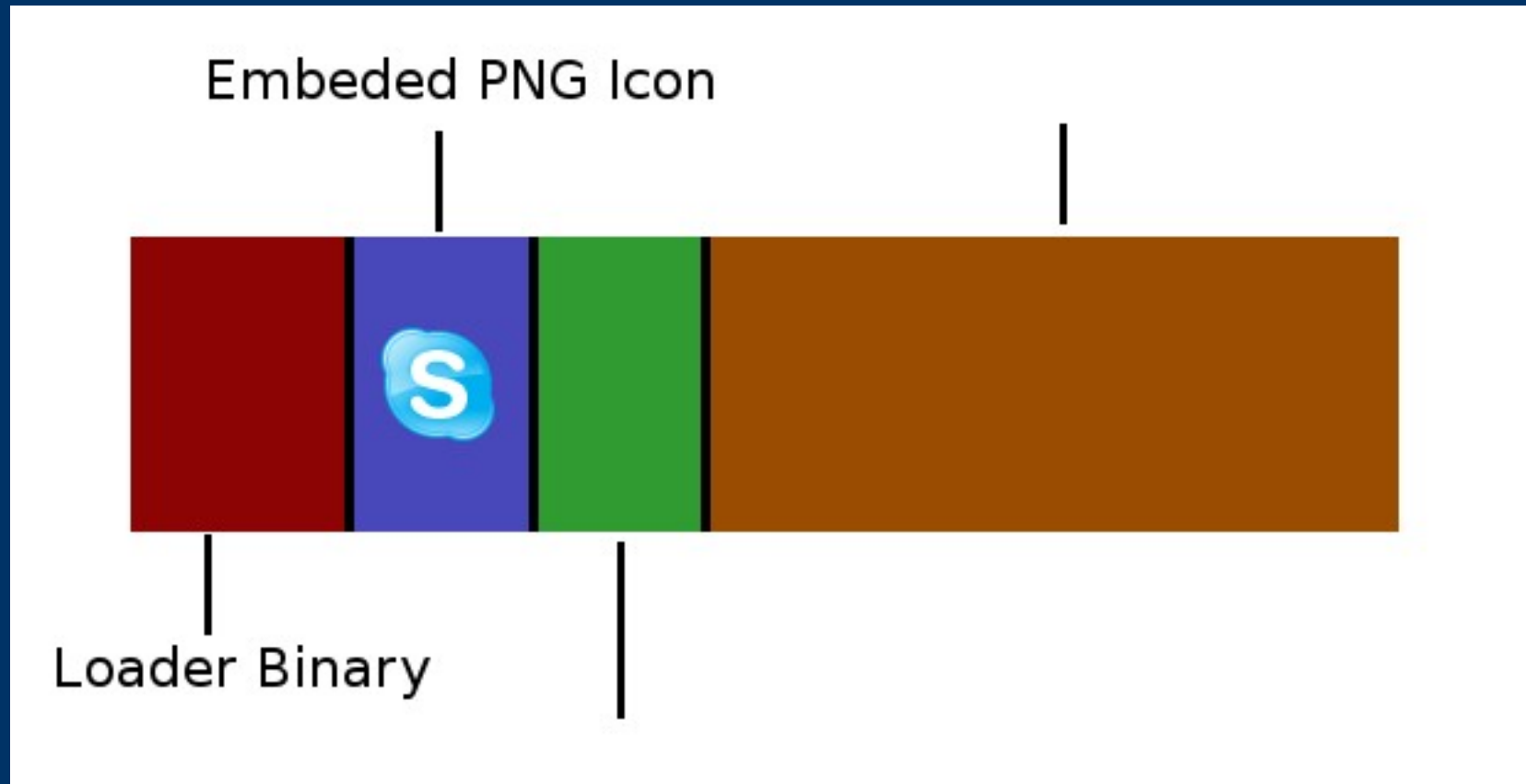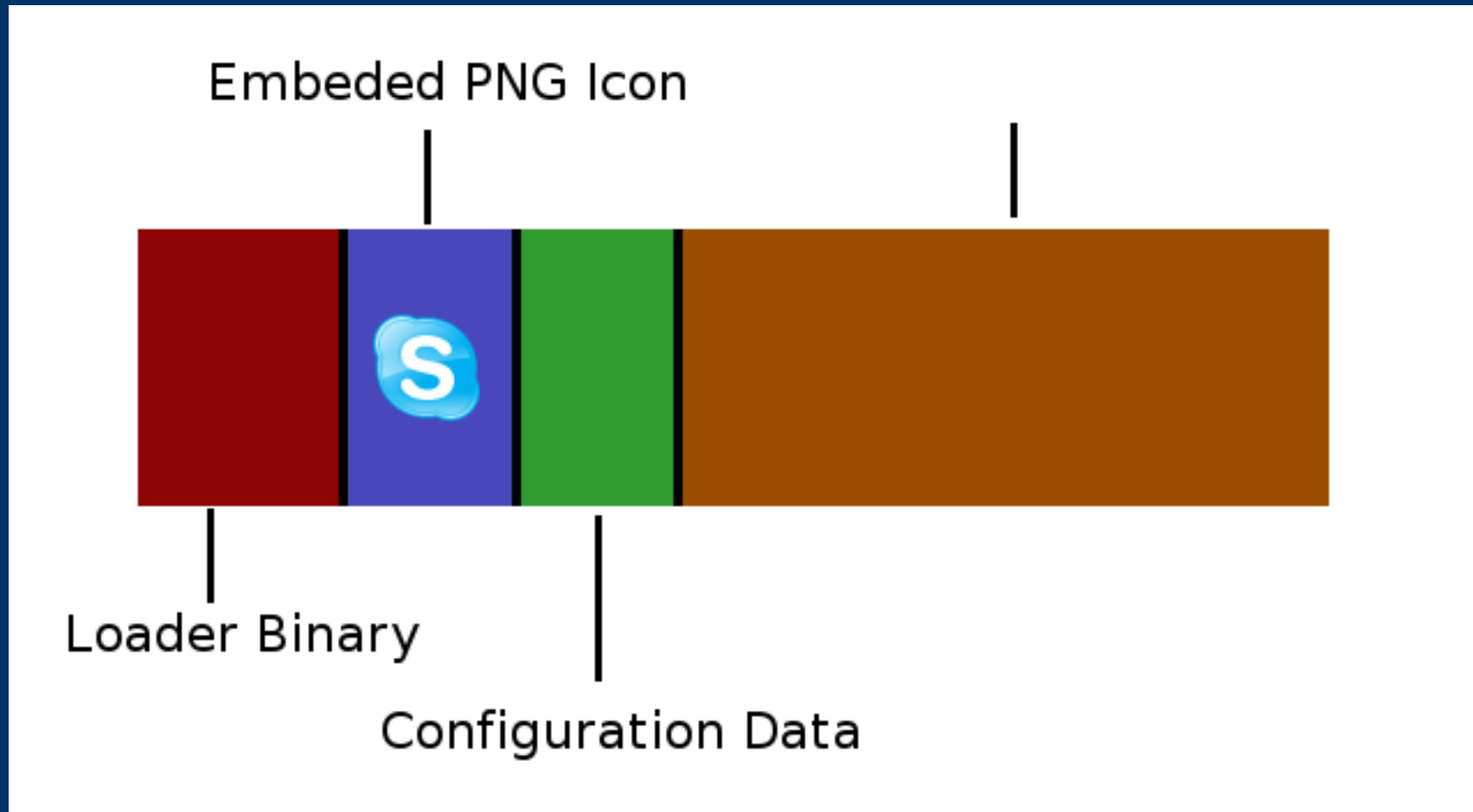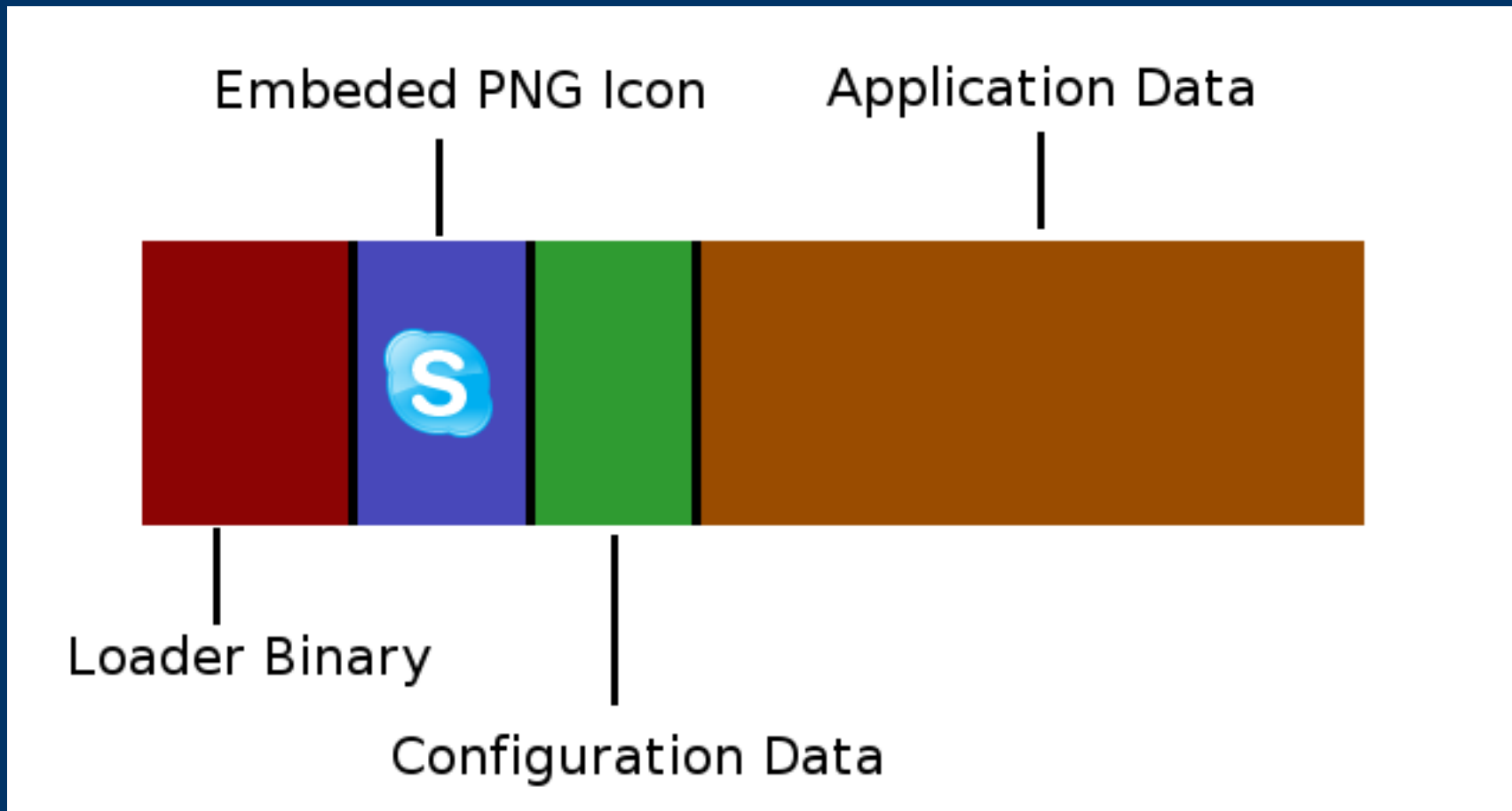# *The PBI format – Technical Perspective*

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The PBI Install Process

- PBI loader binary, written in C, parses flags and launches correct installer.

- Text based installer allows script installs of PBIs, including "-accept" flag to agree to license terms.

- At startup of PBI installer, checksum is calculated to confirm integrity of program data.

The PBI Install Process

- User selects particular options, then starts lzma decompression and installs application.

- PBI executes any included PBI scripts.

- Creation of any Menu / Desktop icons.

PBI Scripting Support

PBI.FirstRun.sh

- Executed before the PBI is installed.

- Allows halting of the installation.

- Often used for system or requirement checks.

PBI Scripting Support

PBI.SetupScript.sh

- Executed after the PBI is installed.

- Allows for post-install setup of application.

- Normally used to create sym-links for program binaries.

PBI Scripting Support

PBI.RemoveScript.sh

• Performs any additional cleanup required for deinstall.

• Often used to remove sym-links created with PBI.SetupScript.sh.

PBI Builder

PBI Builder - Overview

- Program which compiles a port and converts to a PBI file.

- Builds port in a "clean" chroot environment.

- Uses drop-in module configurations for the building of a specific port / PBI.

- Can monitor a port, triggering a rebuild whenever the port Makefile is updated.

PBI Builder - Installation

Download from www .pbidir.com -
Development – PBI Builder

 # tar xvpjf pbibuild-1.4.tbz
 # ln -s `pwd`/pbi-build /pbi-build

 # cd /pbi-build/cron
 # ./cvsup-nightly.sh (wait a while)

PBI Builder - Usage

• Download a module and place it in /pbi-build/modules/

• Modules can be obtained from subversion repository, or from examples/ directory.

 # cd /pbi-build
 # ./buildpbi.sh
or
 # ./buildpbi.sh <modulename>

PBI Builder - Usage

- (Wait a long time)

- (Wait VERY a long time)

- Finished PBI will appear in outgoing/<module>/

PBI Builder – Module Structure

pbi.conf - Main configuration file

copy-files - Listing of files to copy from installed port

build.sh – Script run after copying PBI files

preportmake.sh – Script run before building port

PBI Builder – Module Structure

kmenu-dir – Directory of menu entries

mime-dir – Directory of mime entries

overlay-dir – Files copied into PBI directory, location of scripts, graphics, and more.

PBI Builder – pbi.conf details

```
# Program Name
PROGNAME="Skype"

# Program Website
PROGWEB="http://www.skype.com/"

# Default Icon (Relative to overlay-dir)
PROGICON="SkypeBlue_48x48.png"

# Port we want to build
PBIPORT="/usr/ports/net/skype"

# Other Ports we need built (One per line)
OTHERPORT=""

# Enter your custom make options here
MAKEOPTS=""
```

PBI Builder – copy-files details

```
/usr/local/bin/skype*    bin/
/usr/local/share/skype*  share/
/compat/linux/lib/libas*      autolibs/
```

PBI Builder – Tricks

/pbi-build/pbisandbox – chroot environment of created PBI

/pbi-build/scripts/3.makepbi.sh – Can be run directly to rebuild a PBI without recompiling

   # ./3.makepbi.sh skype

PBI Autobuild Server

- Rebuilds ports that have been updated in CVS.

- Rebuilds PBIs flagged in SVN to rebuild.

- Uploads log & PBI to ftp .pcbsd.org

- Sends email notification to mailing list.

PBI Builder – Additional Info

www .pcbsd.org - Developer Docs

lists .pcbsd.org - Mailing lists for PBI devs and autobuild results.