

Solaris packages Creation and Administration

Abstract

In this paper I will explain how to create and manipulate Solaris packages. I will give a short introduction and summary of the System V package framework and principles along with relevant commands. I will demonstrate how to create a package using a step by step best practice or using an automatic script.

Introduction

System V packages is a comprehensive way of maintaining Solaris packages. System V package framework was developed by AT&T Bell laboratories.

You should use System V packages as a way to organize and distribute your software.

There are many reasons why to do so:

1. A clear way to organize your software within the OS.
2. Ability to maintain versions.
3. All your software is checked in the matter of -
 1. Directories layout and number of files verification.
 2. Files and directories permissions verification.
 3. Files content check summing ability within and after installation.
4. Ability to administer software installation update and removal with a few commands.

System V package format types

There are two types of package format:

Data Stream format package – this is a package which is built to be one stream file containing all the software.

File system format package – this is a package which is built in a directory hierarchy containing all the software.

System requirements

System V packages are the preferred way to administer Solaris packages in Sparc or x86/x64 platforms.

Useful commands

pkginfo – This will list all available installed packages on Solaris or package content in a directory.

pkginfo -l SFWtop - This will show detailed information on the package **SFWtop** provided that this package is installed on your Solaris system.

pkgchk SFWtop - This will check the status of the package SFWtop on your system. (if there is no problem – no output will be shown)

pkgchk -l SFWtop - This will check the status of the package SFWtop in more details on your system.

pkgchk -l SFWtop - This will list all the files installed in your system as part of the SFWtop installation on your system.

pkgadd -d . SFWtop - This will install the package SFWtop in the Solaris OS providing that SFWtop package resides in the current directory.

pkgrm SFWtop - This will remove the package SFWtop from your Solaris OS.

pkgmk - A command to create a package directory.

pktrans - A command to translate a package from file system(directory) organization to a datastream and vice-versa.

Translating file-system format package to be a data stream format package:

pkgtrans -s <SRC-DIR> <DEST-FILE> <PKG-LIST>

Translating a data stream format package to be a file-system format package:

pkgtrans <SRC-FILE> <DEST-DIR> <PKG-NAME>

Configuration files

/var/tmp/admin - a file that contains a pre-configured variables for the pkgadd command in order to automate package installation without user interaction.

/var/sadm/install/contents– this file holds all the packages installed in Solaris along with all the files that each package installs.

Best practice – Step by Step: Creating SysV packages

In This best practice I will demonstrate how to create a package called **SFWtop**.

Please change SFWtop with your designated package name. (where SFW is initials of your organization and top is the name of the software in the package.)

1. Before starting with this best practice please check that your software is organized in one directory and that there is no problem with any of your software binaries or configuration files. In our case the directory will be /opt.
2. Log in as root and list all the files in the designated directory where you want to install your software by typing:

```
cd /opt
```

```
find SFWtop > /tmp/SFWtop.files
```

3. Create a prototype in your top directory tree hierarchy file by typing:

```
cat /tmp/SFWtop.files | pkgproto > /opt/Prototype.SFWtop
```

4. Add the following line to the head of the **Prototype.SFWtop** file:

```
i pkginfo
```

5. You may want to add specific permissions to directories where SFWtop resides by adding the following lines into the **Prototype.SFWtop** file:

```
d none /usr 0755 root root
```

6. Finally you should create the pkginfo file in /opt, in order to tell how you want things actually to be called. Here is a sample pkginfo file:

```
PKG="GNUbison"
NAME="GNU bison 1.24"
VERSION="1.24"
ARCH="sparc"
CLASSES="none"
CATEGORY="utility"
VENDOR="GNU"
PSTAMP="4thSep95"
EMAIL="request@gnu.ai.mit.edu"
ISTATES="S s 1 2 3"
RSTATES="S s 1 2 3"
BASEDIR="/opt"
```

7. Now that everything is set up, you may create the package, issue the command:

```
cd /opt
```

```
pkgmk -o -r . -d /tmp -f Prototype.SFWtop
```

8. If you want to translate the package into a data stream format you may use the following command:

(providing that SFWtop resides in the current directory and is a file system format package).

```
cd /tmp
```

```
mkdir /tmp/datastream
```

```
pkgtrans -s /tmp /tmp/datastream/SFWtop SFWtop
```

```
pkgtrans -s <SRC-DIR> <DEST-FILE> <PKG-LIST>
```

SFWtop – should be a new file which should not exist !

9. After creating a streamed package you can check that your package can be installed using the command: **pkgadd -d SFWtop**