



# pkg (5)

Image Packaging System

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# Agenda

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- Introduction to the IPS
  - Overview
  - pkg(5) Components
  - Package FMRI and versions
  - repositories
- How to set up an IPS server
- How to create / publish own packages
- How to get involved?
- Q&A

# Introduction to the IPS

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- Overview
- pkg (5) components
- Package FMRI and versions
- Example usage of pkg (1)
- How does image-update work?
- pkg authorities

# Overview

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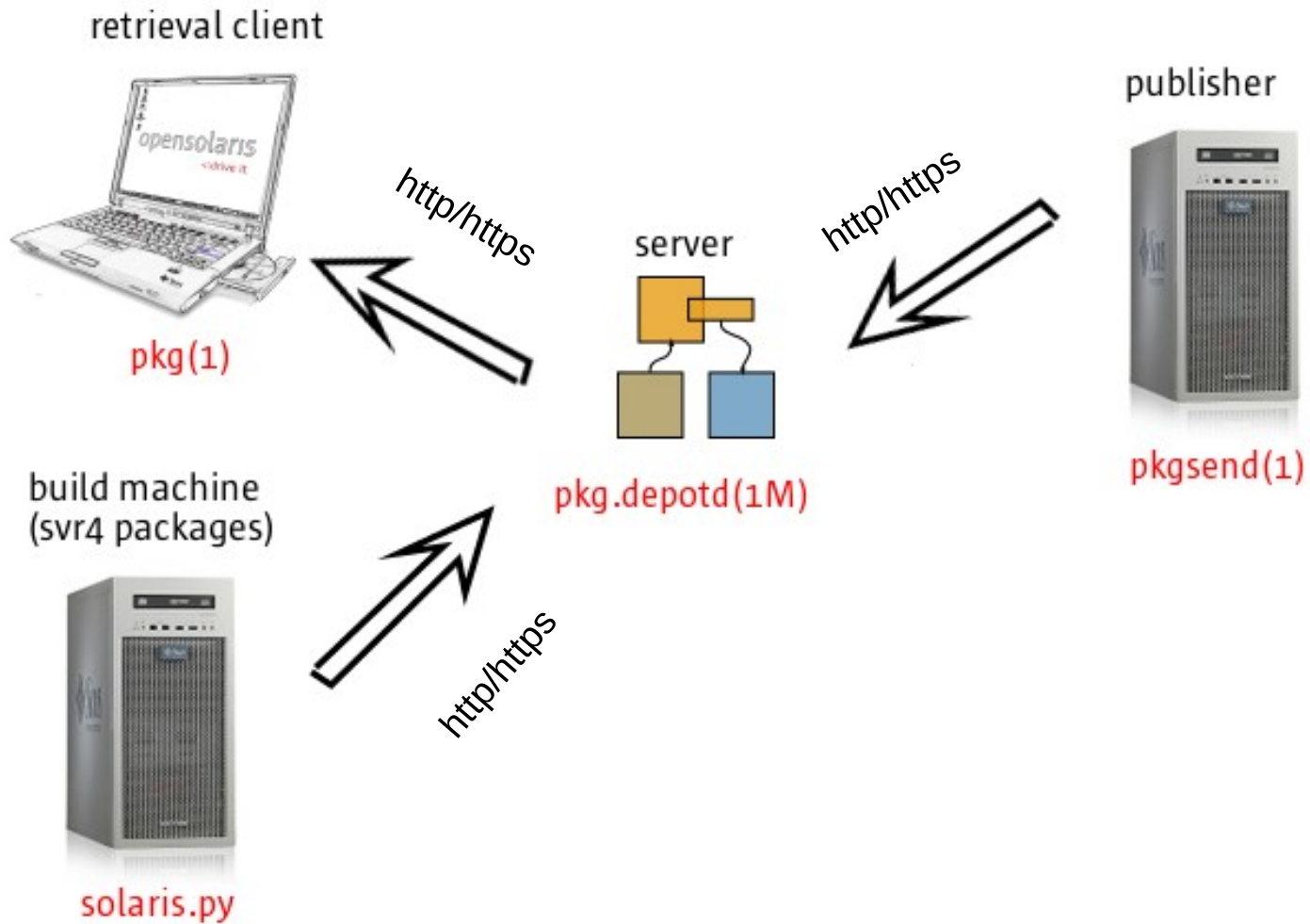
- IPS is a packaging system used by OpenSolaris 2009.\* releases
- The IPS software is a network-centric packaging system written in Python
- IPS enables you to install and manage packages on your system
- Both IPS and Svr4 packages (Used in prior versions) are supported in OpenSolaris
- Packages are identified by FMRI
- Support for different kind of images (user image, full image)

# Overview

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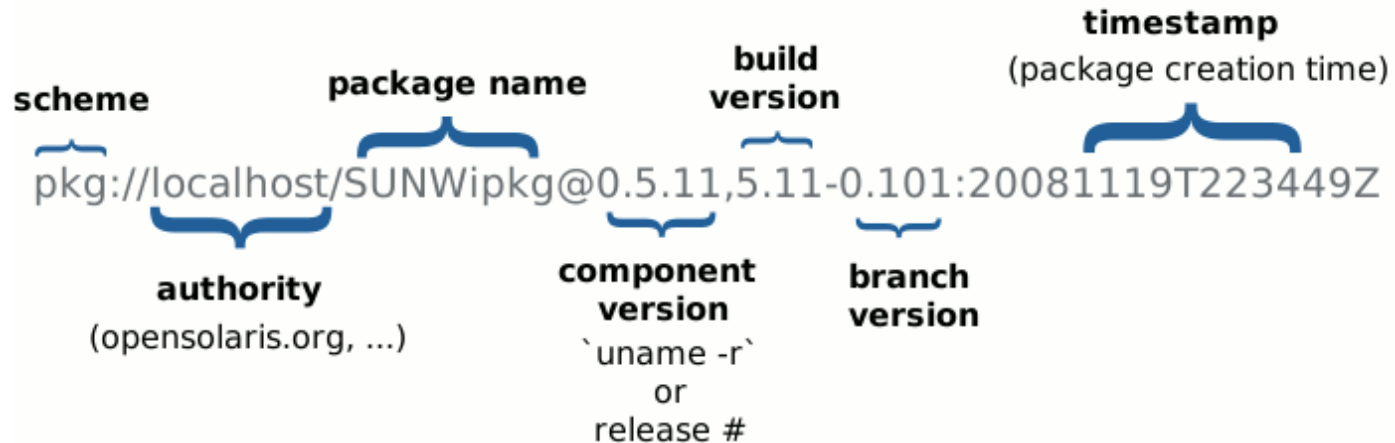
- Scripting free (checkinstall, preinstall, postinstall ...)
- Network repository support :-)
- Default authority is set to pkg.opensolaris.org
- Not all packages are installed by default (caused by live cd capacity)
- Solving dependencies
- Branded zone support (create -t SUNWipkg)

# pkg (5) components



# FMRI - Fault Management Resource Identifier

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# Example usage of pkg (1)

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## Install / Update package

```
$ pfexec pkg install package_FMRI
```

*This will take all the dependencies and get latest software*

## Uninstall package

```
$ pfexec pkg uninstall package_FMRI
```

# Example usage of pkg (1)

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**Search for file in local (installed) / remote package**

```
$ pkg search [-lr] ggrep  
<show output in terminal>
```

**Get package information**

```
$ pkg info [-lr] package_FMRI  
<show output in terminal>
```

# Example usage of pkg (1)

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## Show contents of the package

```
$ pkg contents -t dir,file,link,hardlink -o  
action.name,mode,pkg.size,path,target SUNWzfs
```

*<show output in terminal>*

**\$ see man -s 1 pkg for more information and examples**

# How does image-update work?

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- pfexec pkg image-update will update the whole full image defined by `$PKG_IMAGE`.
- New boot environment is created
  - zfs snapshot && clone of whole root + new entry in bootloader
- New BE is updated except the current one
- You can choose which be to choose on the bootloader screen

# How does image-update work?

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- How much space is this all taking?
  - Only the space used by new files + <1M info about clone and snapshot
- Nightmare from the unsuccessful update is gone. You always have a place to return back.
- If the update is unsuccessful. Just remove the new BE and wait for a newer release before updating.

# pkg authorities

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- <http://pkg.opensolaris.org>
  - Base packages /dev && /release
- <https://pkg.sun.com/opensolaris/extra/>
  - Flash ... TrueType fonts ...
- <http://blastwave.network.com:10000>
  - Lots of GNU packages
- <http://pkg.sunfreeware.com:9000>
  - The Companion project (companion dvd)
- <http://ips.homeunix.com:10906/>
  - Useful multimedia packages

# How to manage pkg authorities?

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- Authorities can be managed via `pkg(1)` command

- Listing authorities

```
$ pkg authority
```

- Adding authority

```
# pkg set-authority [-P] -O http://... Name
```

- Remove authority

```
#pkg unset-authority Name
```

# How to setup an IPS server

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- via SMF services
- via pkg.depotd(1)

# How to set up an IPS server (smf way)

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- How to set up pkg server via smf services?
- # svcadm enable application/pkg/server
  
- By default port is set to 80 and the server directory is /var/pkg
  
- Often used options
  - pkg/port
  - pkg/inst\_root

# How to set up an IPS server (the next one)

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- You can also run
- `$ /usr/lib/pkg.depotd`
- By default port is set to 80 and the server directory is `/var/pkg/repo`
- Server could be started by normal user using this way
- Often used options
  - `-p [ port number ]`
  - `-d [ server directory ]`
  - `-s [ number of threads for requests ]` Def. 10

# How to publish package to IPS server

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- pkgsend syntax & attributes
- Things to know before demo
- Demo

# pkgsend syntax

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- pkgsend open [-en] package\_FMRI
- pkgesend add action arguments
- pkgsend import [-T] pattern
  - (pattern such as a SV4 package)

# pkgsend add actions

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depend

dir

driver

file

group

hardlink

legacy

license

link

set

user

# Things to know before demo

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- Authority attribute is needed when we are working with authority different from **http://localhost:10000**

- Opening a transaction in different shells

## *In Bourne like shells*

```
eval` pkgsend [-s authority] open package_fmri`
```

## *In C like shells*

```
$ pkgsend [-s authority ] open package_fmri
```

```
export PKG_TRANS_ID=1228122616_pkg%3A%2Ftest  
%401.0.0%2C5.11%3A20081201T091016Z
```

```
$ setenv PKG_TRANS_ID 1228.....
```

# How to publish package to IPS server

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PKG publication demo  
Both SVr4 and IPS

# How to get involved?

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## Get more information

<http://www.opensolaris.org/os/project/pkg/>

## Get the source

```
hg clone --ssh "ssh -C"  
ssh://anon@hg.opensolaris.org/hg/pkg/gate
```

*Join the discuss list, report bugs or contribute :-)*

# Q&A

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Any questions?



**Thank you**

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Get this material from  
[blog.setuid.cc](http://blog.setuid.cc) or [opensolaris.cz](http://opensolaris.cz)

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