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open

USE IMPROVE EVANGELIZE

Image Packaging System

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Agenda

- **14:30-14:45** - Setting up
- **14:45-14:55** - Introduction to the tutorial
- **14:55-15:10** - Common Build Environment - introduction and first sample package
- **15:10-15:20** - Break
- **15:20-15:50** - CBE - your first own svr4 package
- **15:50-16:00** - IPS - introduction
- **16:00-16:10** - Break
- **16:10-16:25** - IPS - setting up repository
- **16:25-16:45** - IPS - creating and sending package using pkgsend(1)
- **16:45-17:00** - IPS - creating and sending package from svr4 package
- **17:00-17:10** - Break
- **17:10-17:30** - Using pkg(1) and packagemanager to install packages in different images

What you will need:

- Patience and good humour
- Internet Access

- Operating system:
  - OpenSolaris 2008.05
  - Sun Studio
  - Common Build Environment (CBE)

OR:

- VirtualBox

Installing CBE

Follow up the instructions in the materials:

3. Setting up environment

Common Build Environment #1

pkgtool
will do everything for us!

so just switch to CBE environment
and
rock&roll

Common Build Environment #2

- http_proxy needed?
- Flags:
  -- download (this will download sources)
  build (this will build and install package)

  build-only (if you want only build packages, without installing, note, that it is easier to install packages, because other ones might depend on that package)

Common Build Environment #3

This is the default folder, where the packages are builded in svr4 format. It will be used in next parts of this presentation, so keep it in mind!

~/packages/PKGS

Break

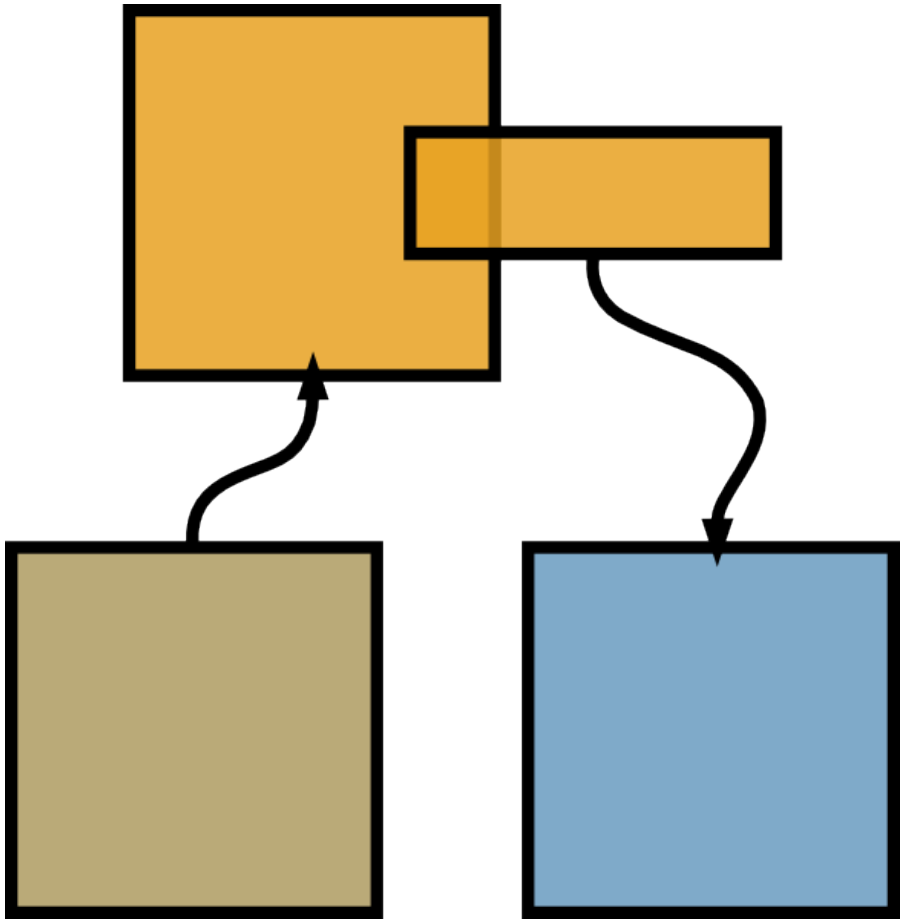
CBE - your first own svr4 package

Follow up the instructions in the materials:

4b. My first own svr4 package


How can I get some software?

Image Packaging System



pkg (5)

IPS overview #1

IPS - Project is under development

- Multi-platform
- Multi-install
- Non-root install
- Handling ELF dependencies
- Content filtering
- Virtualization-ready
- ZFS aware
- Filters

Three things that need to be clarified

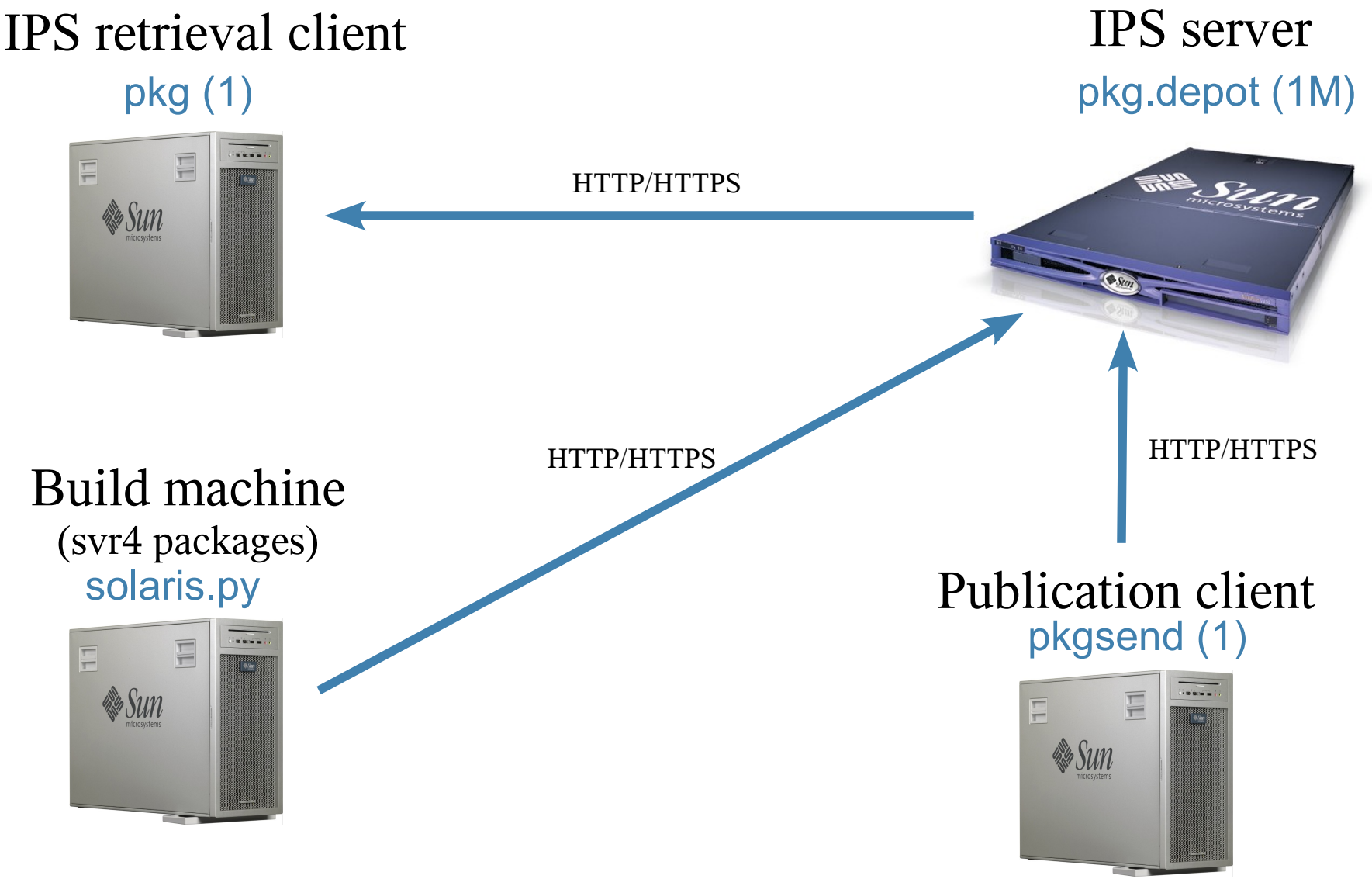
- It is not a build environment
- Network based software lifecycle management
- No scripting

FMRI (Fault Management Resource Identifier)

pkg://opensolaris.org/library/libc@5.11,5.11-0.75:20071001T163427Z

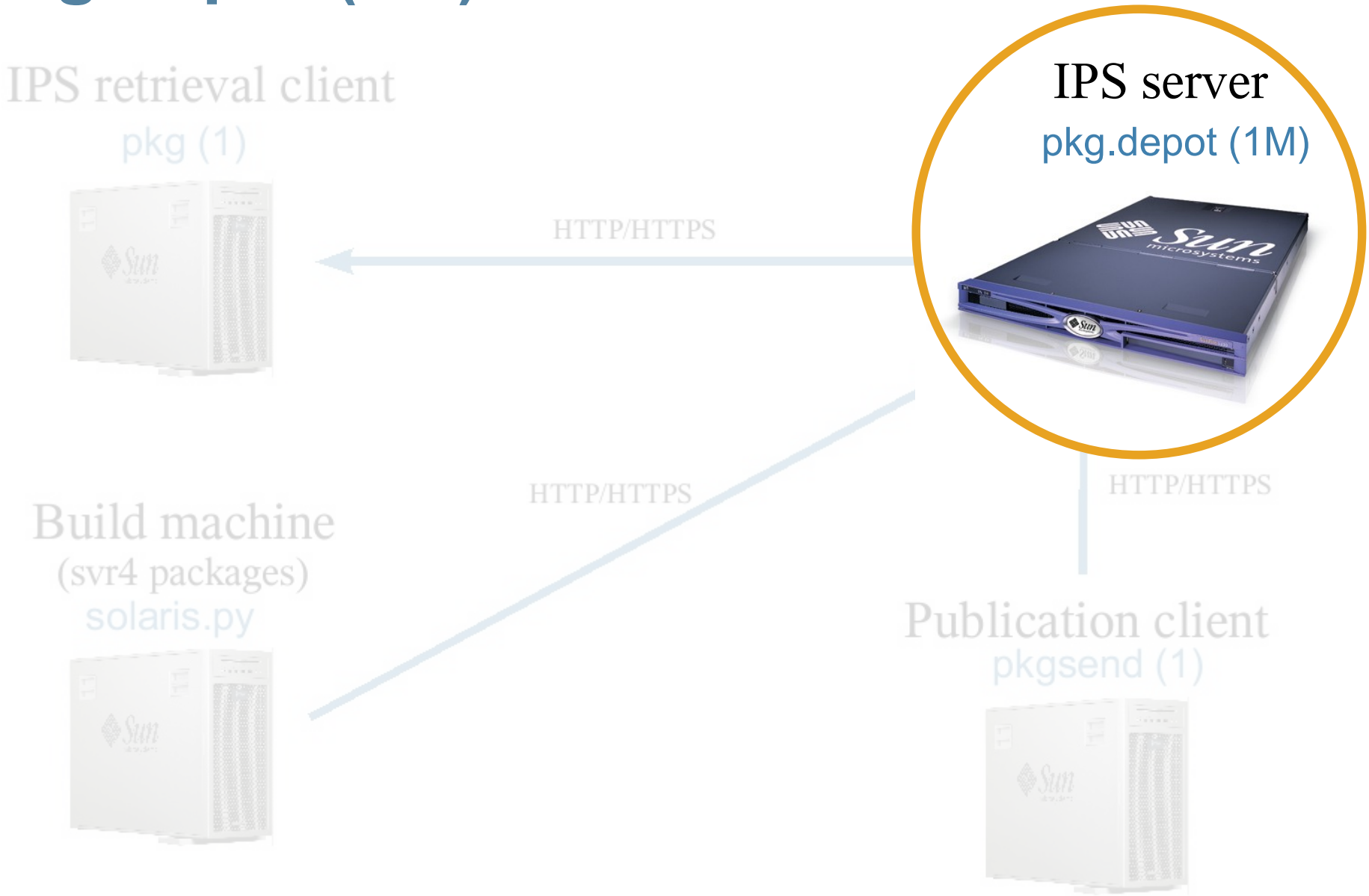
- scheme: pkg:
- authority: opensolaris.org
- package name: library/libc
- component version ('uname -r' or release number): 5.11
- build version: 5.11
- branch version: 0.75
- timestamp (when package was published): 20071001T163427Z

pkg (5) in parts




Break
joshme17
SOME RIGHTS RESERVED

pkg.depot (1M)


IPS retrieval client
pkg (1)
HTTP/HTTPS
IPS server
pkg.depot (1M)
HTTP/HTTPS
HTTP/HTTPS
Build machine
(svr4 packages)
solaris.py
Publication client
pkgsend (1)

Setting up IPS repository

using
/usr/lib/pkg.depotd

using smf service
svc:/application/pkg/server

/usr/lib/pkg.depotd

- Possible options:

  -d – server directory

  -p – server port

  --readonly

  --rebuild

pkg.depot (1M)

- HTTP/HTTPS session
- SHA-1 hash for each file
- Default /var/pkg/repo
- May be run by normal user

svc:/application/pkg/server

- Possible options:

  pkg/port

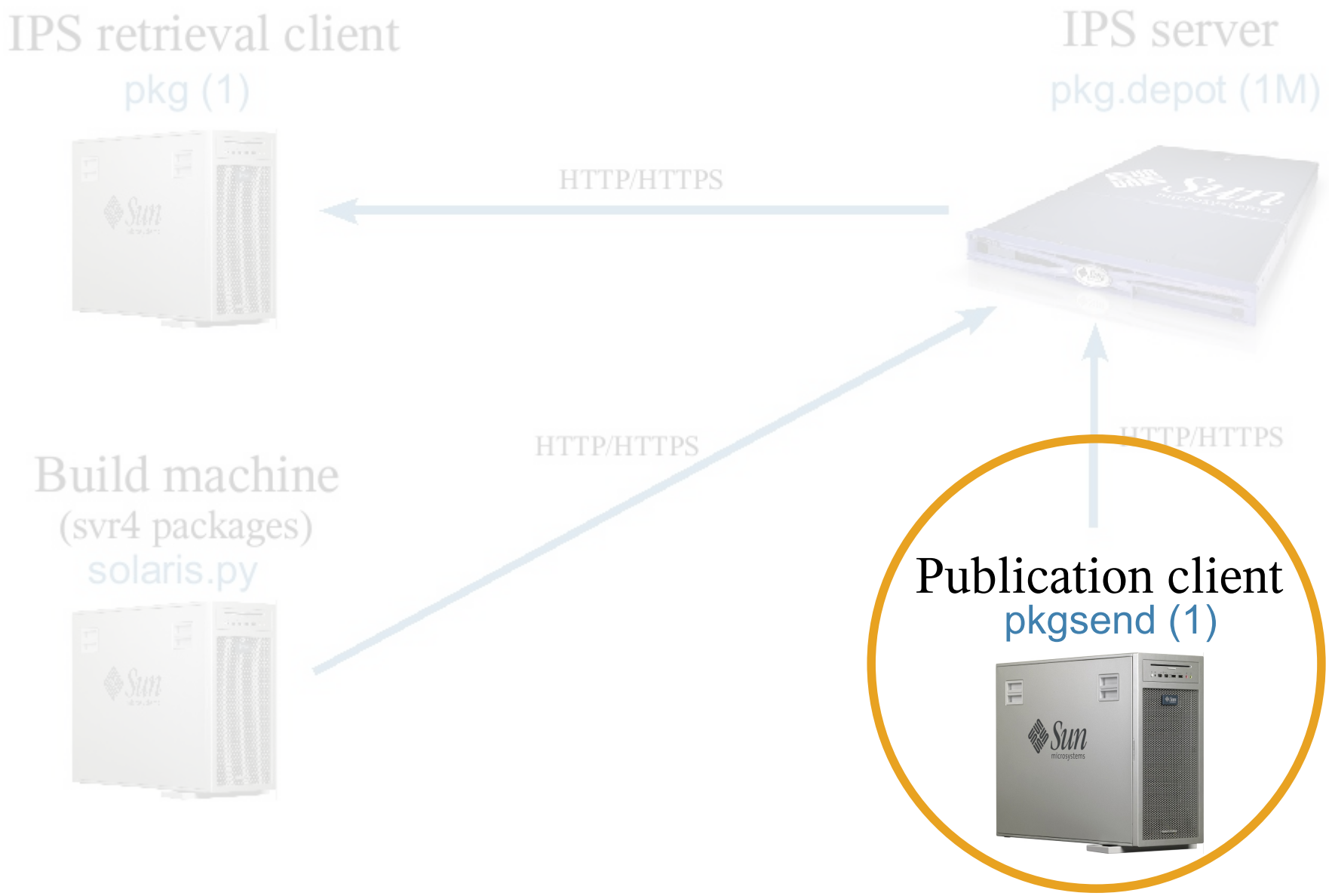
  pkg/inst_root

Your task!

- Set up your local repository :-)

5a. Setting up IPS repository

pkgsend (1)


IPS retrieval client
pkg (1)
IPS server
pkg.depot (1M)
HTTP/HTTPS
HTTP/HTTPS
HTTP/HTTPS
Build machine
(svr4 packages)
solaris.py
Publication client
pkgsend (1)

pkgsend (1)

- Allows publication of new packages
- Each publication is structured as a transaction

pkgsend (1)

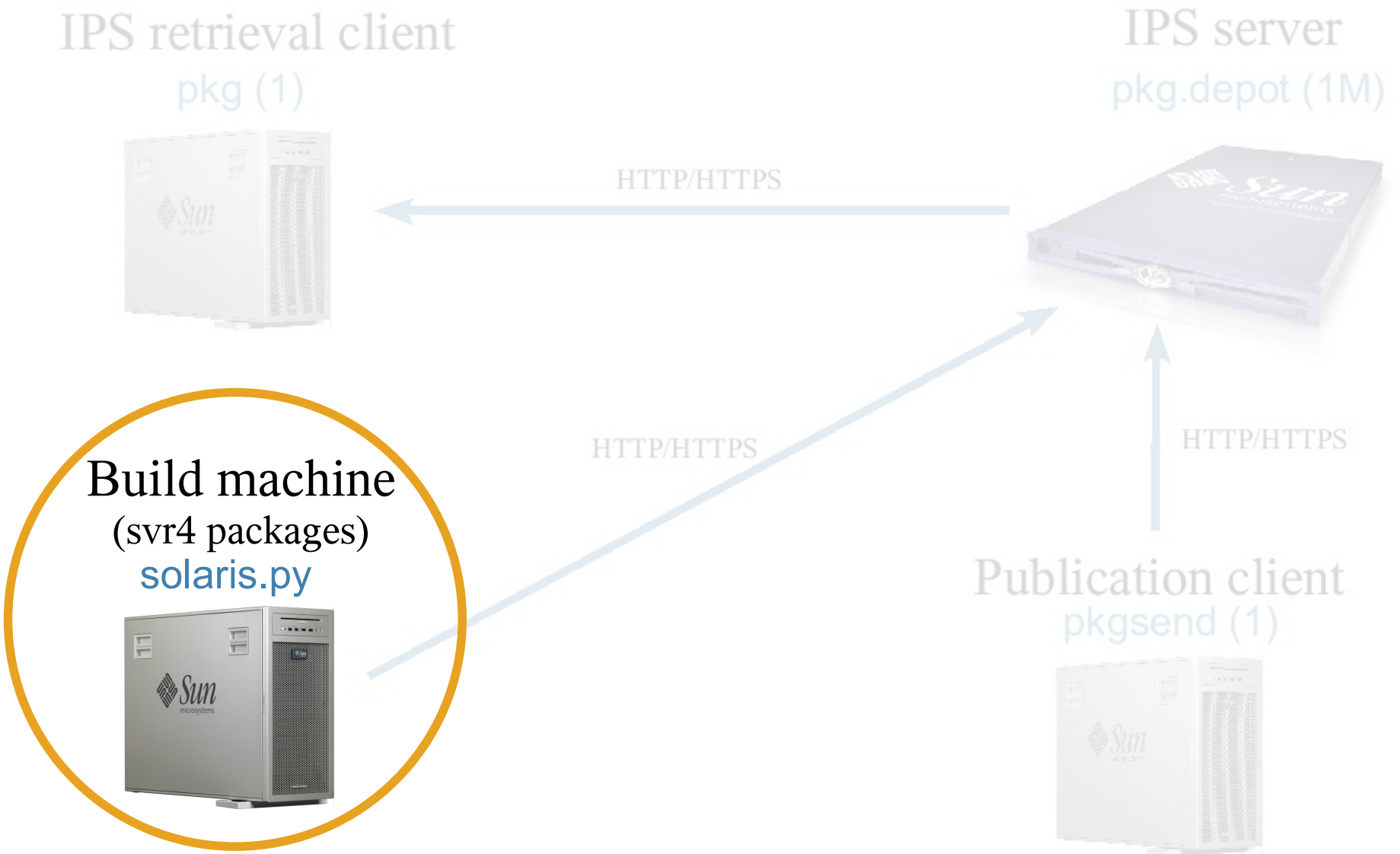
Task

Your task!

- Create sample package in your repository!

5b. Creating and sending package using pkgsend(1)

svr4 → IPS server



svr4 → IPS server

solaris.py

↓

handling ELF components

↓

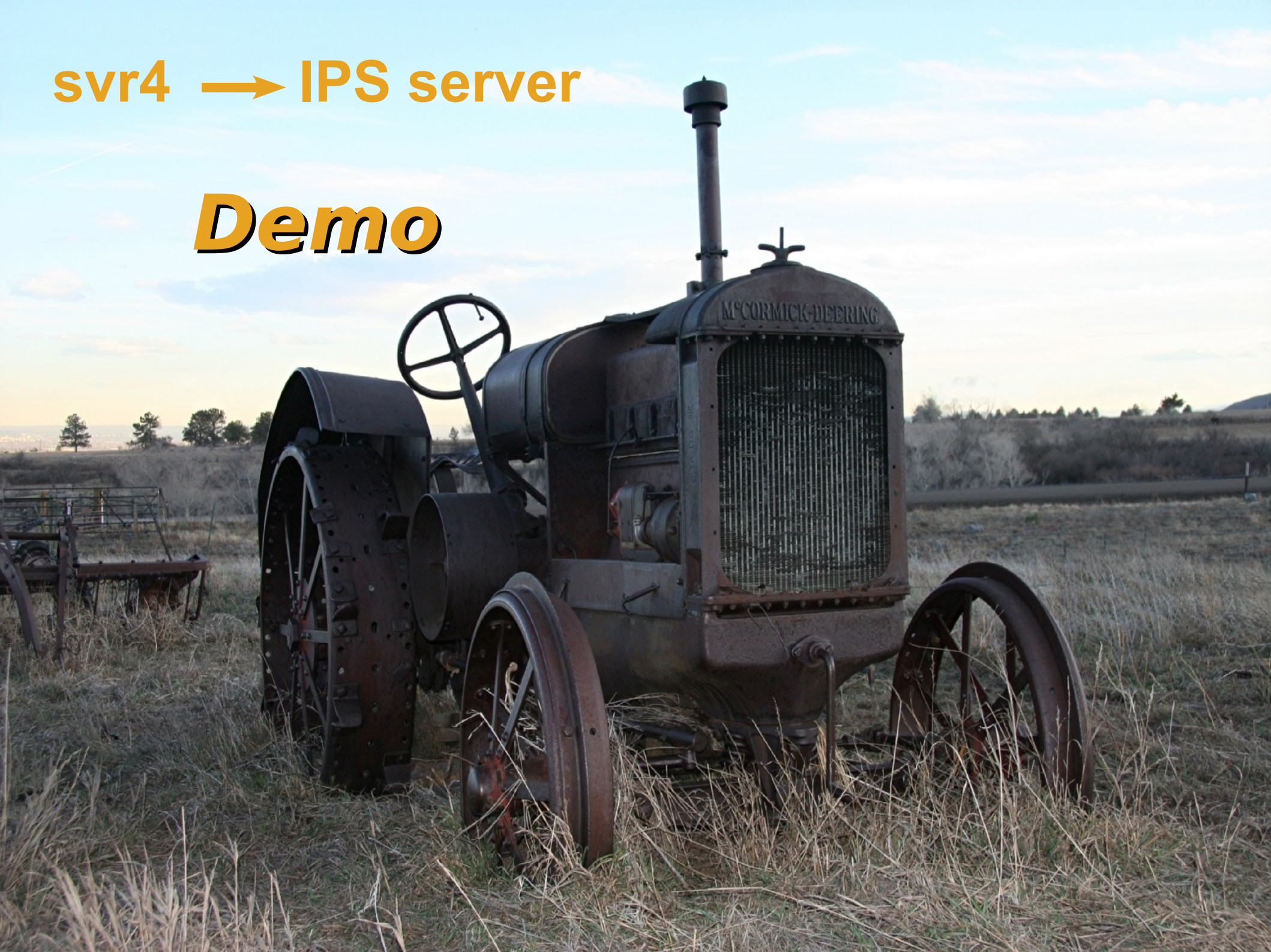
finding package dependencies

↓

publishing

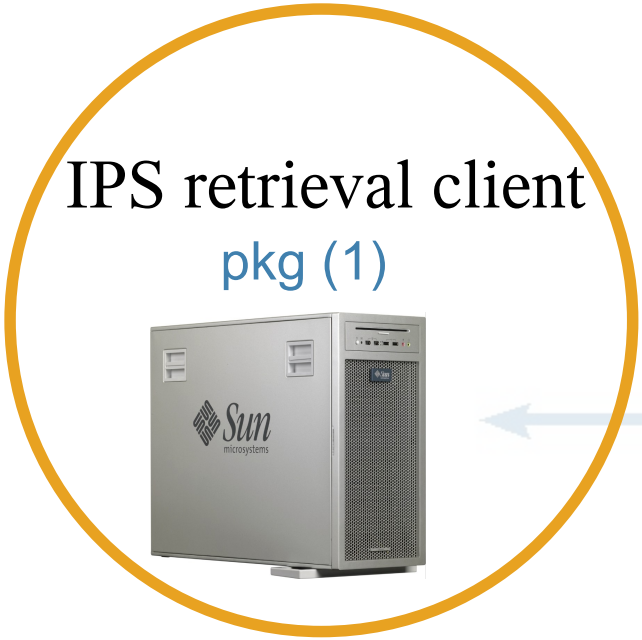
svr4 → IPS server

Demo



Break

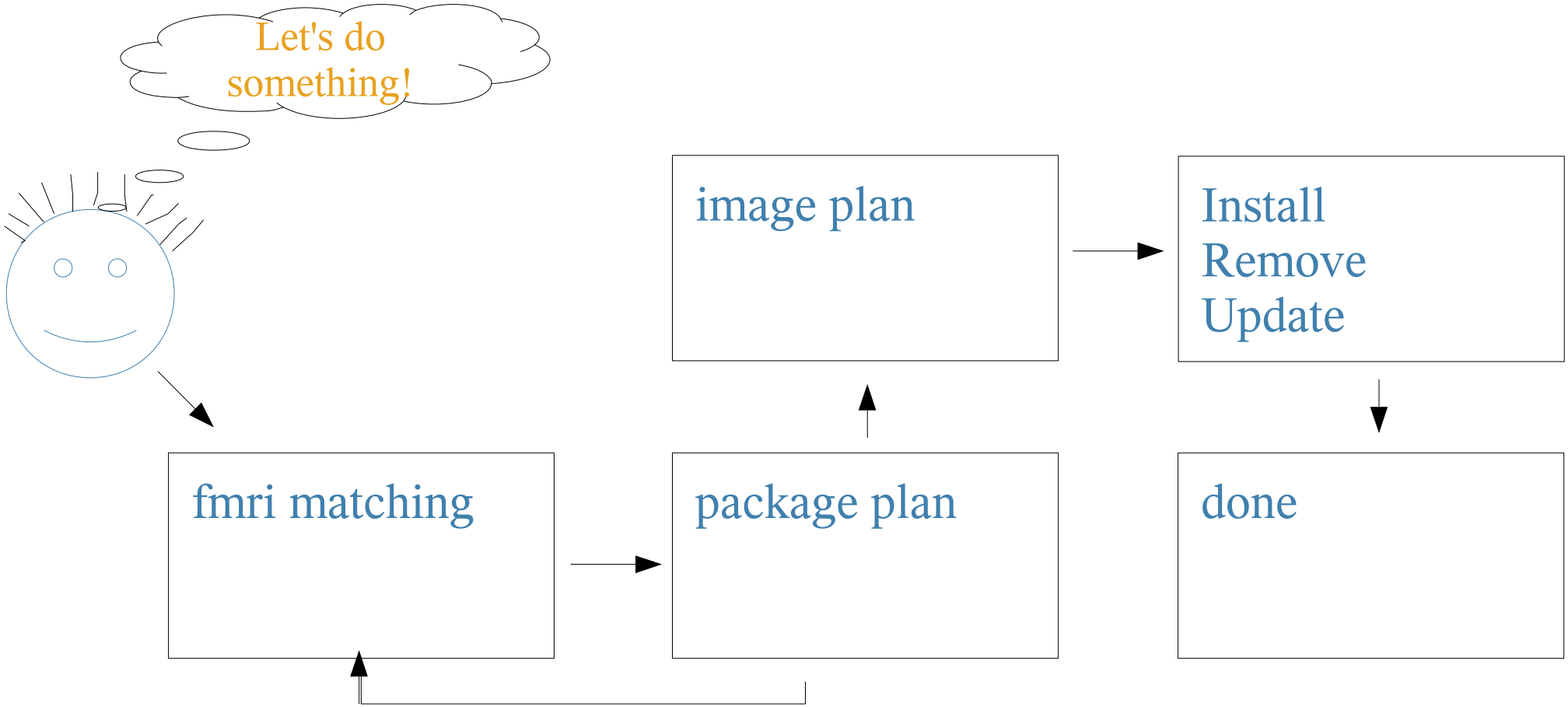
pkg (1)


IPS retrieval client
pkg (1)
IPS server
pkg.depot (1M)
HTTP/HTTPS
HTTP/HTTPS
HTTP/HTTPS
Build machine
(svr4 packages)
solaris.py
Publication client
pkgsend (1)

pkg (1)

```
ips@opensolaris:~$ pkg
Usage:
        pkg [options] command [cmd_options] [operands]

Basic subcommands:
        pkg install [-nvq] package...
        pkg uninstall [-nrvq] package...
        pkg list [-aHsuv] [package...]
        pkg image-update [-nvq]
        pkg refresh [--full]
        pkg version
        pkg help

Advanced subcommands:
        pkg info [-lr] [--license] [pkg_fmri_pattern ...]
        pkg search [-lr] [-s server] token
        pkg verify [-fHqv] [pkg_fmri_pattern ...]
        pkg contents [-Hmr] [-o attribute ...] [-s sort_key] [-t action_type ...
 ]
            pkg_fmri_pattern [...]
        pkg image-create [-FPUz] [--full|--partial|--user] [--zone]
            [-k ssl_key] [-c ssl_cert] -a <prefix>=<url> dir

        pkg set-authority [-P] [-k ssl_key] [-c ssl_cert]
            [-O origin_url] authority
        pkg unset-authority authority ...
        pkg authority [-H] [authname]

Options:
        -R dir

Environment:
        PKG_IMAGE
ips@opensolaris:~$
```

pkg (1)


Let's do something!
image plan
Install
Remove
Update
fmri matching
package plan
done


pkg (1)
TASK

GUI tool – Package Manager

"One picture tells a thousand words"

Package Manager - revision 1

File Edit Package Help

Reload Update All Install/Update Remove

Repository: opensolaris.org

All

Show: All Packages Search:

All
Internet
Communication
GNOME
Mail
Localization
Sound & Video
Universal Access
Core
Graphics
Accessories
Developer Tools
System Tools
Games
Social Software
GTK
Viewer
RasterGraphics
2DGraphics

Name	Installed Version	Latest Version	Description
FSWxorg-devel-docs		0.5.11-0.90:0604	
FSWxorg-fonts	0.5.11-0.86	0.5.11-0.90:0604	X.Org Foundation X11 fonts
FSWxorg-headers		0.5.11-0.90:0604	
FSWxwpft		0.5.11-0.90:0604	

FSWxorg-fonts
X.Org Foundation X11 fonts

General Info | Files Details | Dependencies

Information for installed package:

Description: X Window System font files based on X.Org Foundation open source release
Name: FSWxorg-fonts
FMRI: pkg:/FSWxorg-fonts@0.5.11,5.11-0.86:20080426T172611Z
Version: 0.5.11-0.86
Packaged: 2008-04-26 17:26:11

1193 packages listed, 525 installed, 0 selected, 0 broken.

IPS GUI

TASK

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வெளிப்படை

open

USE IMPROVE EVANGELIZE

Thank you!

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“open” artwork and icons by chandan:
http://blogs.sun.com/chandan