



IPS Revisited

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IPS Packages – Quick Recap

- pkg install
 - > Add new packages to an image
- pkg uninstall
 - > Remove a package from the image
- pkg verify
 - > Validate a package contents
- pkg list
 - > Show information about packages in the image
- pkg image-update
 - > Update all packages in the image

Small Changes – User experience

- pkg search
 - > Now searches the repository by default
 - > Use `pkg search -l` to search the local system

```
jmf@indy-2:~$ pkg search -l SUNWtvnc
```

```
jmf@indy-2:~$ pkg search SUNWtvnc
```

INDEX	ACTION	VALUE	PACKAGE
basename	dir	opt/SUNWtvnc	pkg:/SUNWtvnc@0.4-0.99
basename	dir	opt/SUNWtvnc	pkg:/SUNWtvnc@0.4-0.93
basename	dir	opt/SUNWtvnc	pkg:/SUNWtvnc@0.4-0.96
basename	dir	opt/SUNWtvnc	pkg:/SUNWtvnc@0.4-0.91
basename	dir	opt/SUNWtvnc	pkg:/SUNWtvnc@0.4-0.100
basename	dir	opt/SUNWtvnc	pkg:/SUNWtvnc@0.4-0.101

New User Functions

- pkg fix
 - > Attempts to fix any errors reported by pkg verify
- pkg history
 - > Displays all pkg commands run in the image
 - > Use pkg purge-history to clear the log
- pkg set-publisher / pkg unset-publisher
 - > Adds and removes publisher information
 - > The replacement for set-authority / unset-authority
 - > (These will be removed in the future)

The Package Manager GUI

- Many changes behind the scenes
- Improved search system
 - > Can search all repositories
 - > Can filter results more readily
- Faster to startup
 - > Much improved local cache
 - > Also improves search performance

Repositories

- Release repo
 - > <http://pkg.opensolaris.org/release/>
- Dev repo
 - > <http://pkg.opensolaris.org/dev/>
- Contrib repo
 - > <http://pkg.opensolaris.org/contrib/>
- Pending repo
 - > <http://pkg.opensolaris.org/pending/>

Repositories

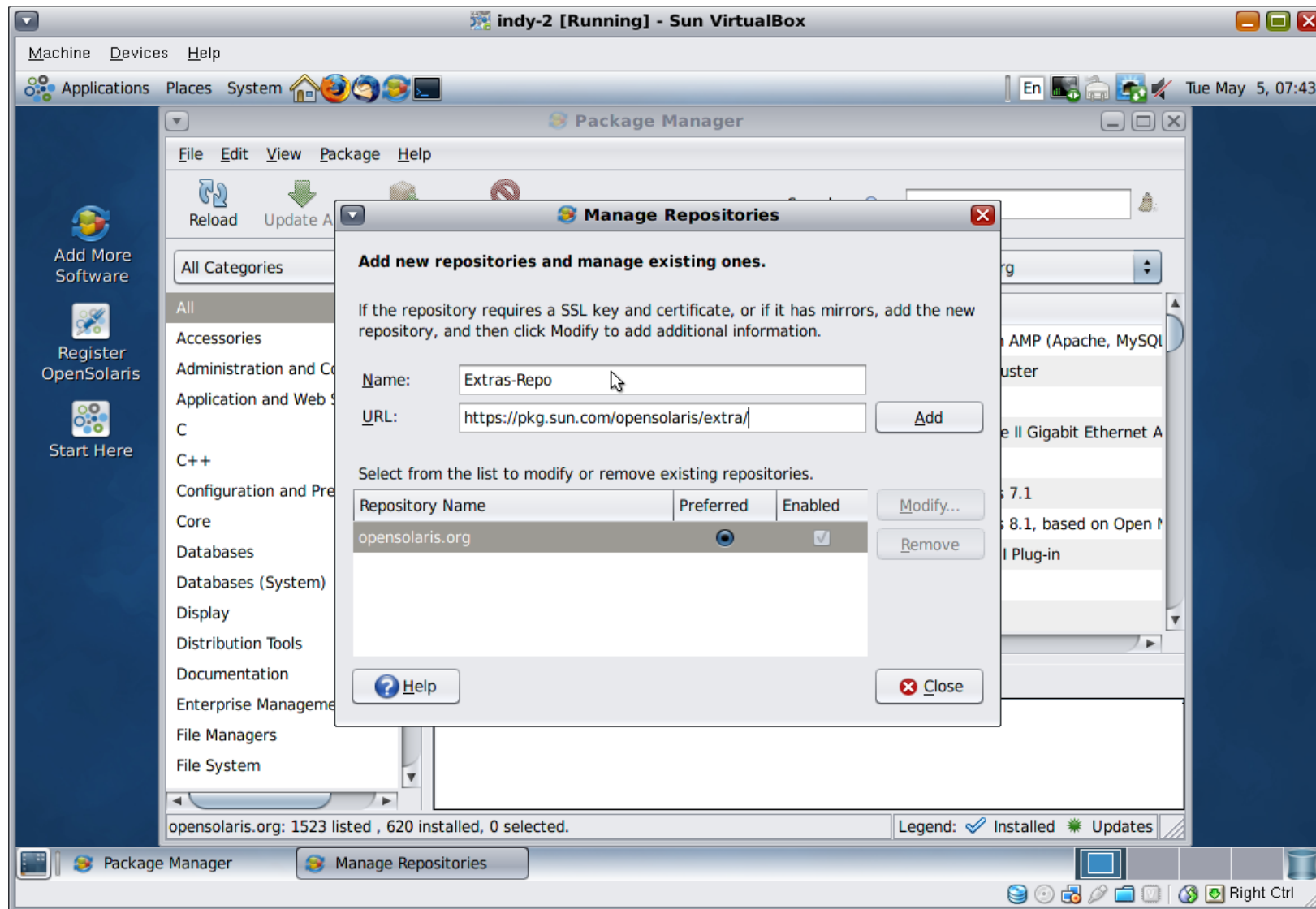
- Extras repo
 - > Requires an SSL key
 - > Contains encumbered packages
 - > <https://pkg.sun.com/opensolaris/extra>
- Support repo
 - > Requires a maintenance contract
 - > Requires an SSL key
 - > Contains “patches” for the release repo
 - > <https://pkg.sun.com/opensolaris/support>

Installing SSL Keys

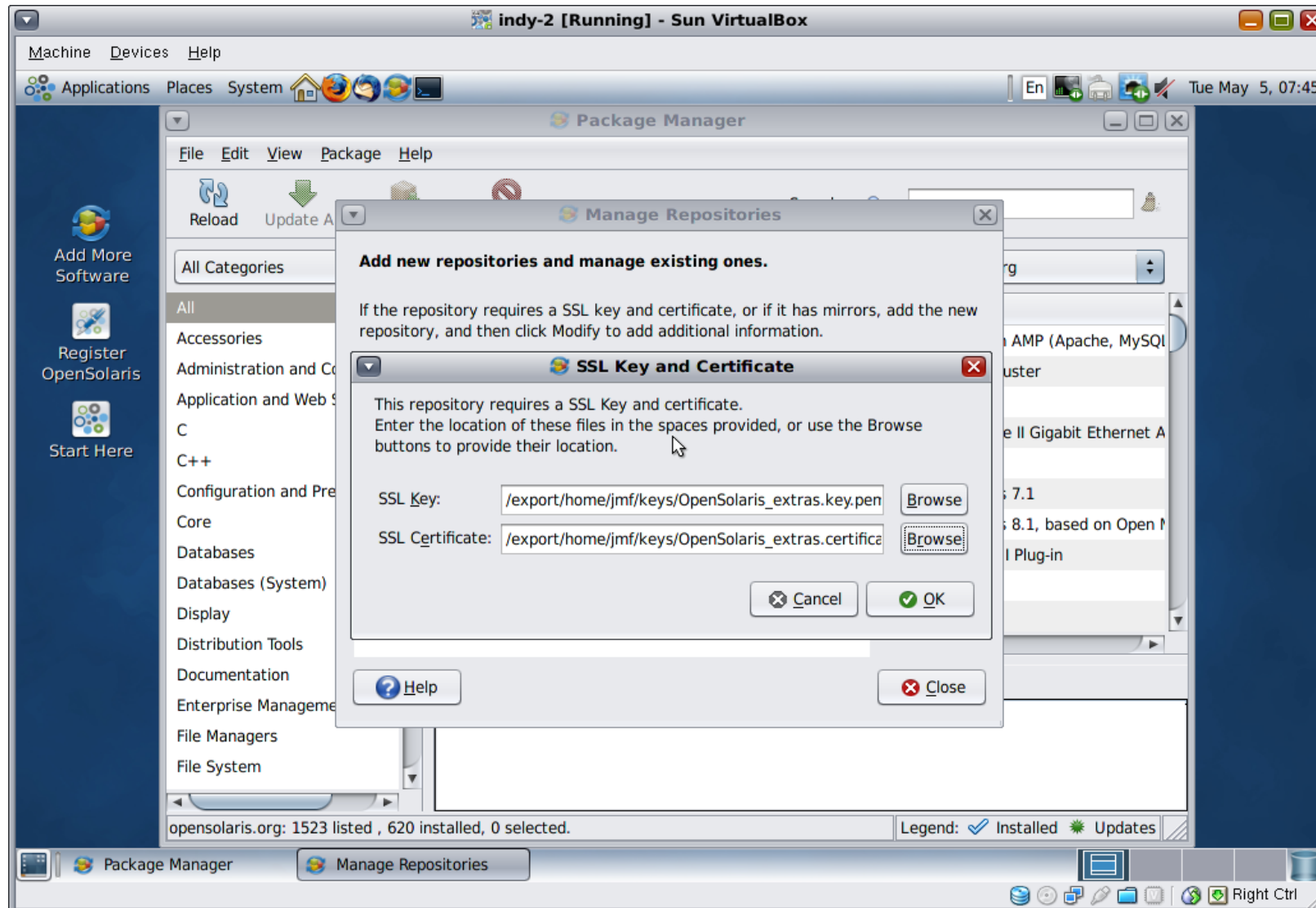
- Using pkg set-publisher

```
root@stomper-indy:/var/pkg/ssl# ls -l
-rw-r--r-- 1 root root 730 2009-05-08 11:34 OpenSolaris_extras.certificate.pem
-rw-r--r-- 1 root root 888 2009-05-08 11:34 OpenSolaris_extras.key.pem
root@stomper-indy:/var/pkg/ssl# pkg set-publisher \
-O https://pkg.sun.com/opensolaris/extra \
-k /var/pkg/ssl/OpenSolaris_extras.key.pem \
-c /var/pkg/ssl/OpenSolaris_extras.certificate.pem extras-repo
root@stomper-indy:/var/pkg/ssl# pkg publisher -H
extras-repo          origin  online  https://pkg.sun.com/opensolaris/extra/
opensolaris.org      origin  online  http://pkg.opensolaris.org/release/
opensolaris.org      mirror  online  http://ipkg.uk:90/
```


Installing SSL Keys



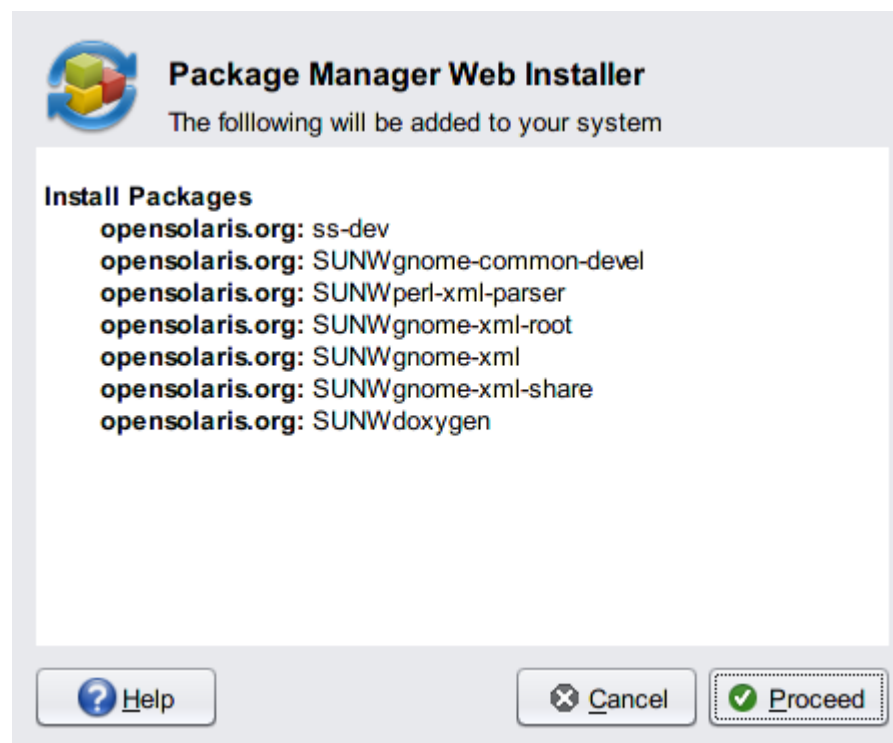
Installing SSL Keys



Package Webinstall

- Extension to packagemanager
 - > Opens a new dialogue window
 - > Must be a privileged user
 - > Need to click “Proceed”
- Can add packages, publishers and repositories
- Triggered by a “p5i” file
 - > Updates coming to allow packagemanager to save these
- Delivered from a web server
 - > Need to add the mime-type for the p5i files

Webinstall - Example



pkg.depotd Changes

- Mirroring of repos now possible
 - > Only mirrors the data – not the catalog info
 - > Copy the contents of /var/pkg/repo/file
 - > Start pkg.depotd with the –mirror flag
 - Can also set the pkg/mirror smf property
 - > Add to each client with pkg set-publisher -m
 - > Check with pkg publisher

pkg.depotd Changes

```
root@stomper-indy:/var/pkg/ssl# pkg publisher
local-repo          (preferred) origin  online  http://localhost:80/
dev-repo            origin  online  http://pkg.opensolaris.org/dev/
dev-repo            mirror  online  http://ipkg.uk:90/
extras-repo         origin  online  https://pkg.sun.com/opensolaris/extra/
opensolaris.org     origin  online  http://pkg.opensolaris.org/release/
opensolaris.org     mirror  online  http://ipkg.uk:90/
```

SVR4 Package Import

- Small change
 - > Need to open and close the pkgsend transaction
 - > New “import” sub-command

```
root@stomper-indy:/export/pkg/pkg# export  
PKG_REPO=http://localhost:80/
```

```
root@stomper-indy:/export/pkg/pkg# eval `pkgsend open SFWlynx@0.1`
```

```
root@stomper-indy:/export/pkg/pkg# echo $PKG_TRANS_ID
```

```
1241774388_pkg%3A%2FSFWlynx%400.1%2C5.11%3A20090508T091948Z
```

```
root@stomper-indy:/export/pkg/pkg# pkgsend import SFWlynx
```

```
root@stomper-indy:/export/pkg/pkg# pkgsend close
```

```
PUBLISHED
```

```
pkg:/SFWlynx@0.1,5.11:20090508T091948Z
```

Fat Packages

- Allows multiple variants in a single package
 - > eg SPARC and x86 binaries
- IPS only downloads the files it needs
 - > Won't download Gb's of SPARC files for a laptop
- Can have mutually exclusive options in the package
 - > Defined as actions
 - > Termed “Variants”

• Eg :

```
dir group=sys mode=0755 owner=root path=kernel/drv/amd64  
variant.arch=i386
```


SMF Integration

- New actions for file delivery / update / removal
 - > `disable_fmri` - “svcadm disable” before remove
 - > `refresh_fmri` - “svcadm refresh” after install, update or remove
 - > `restart_fmri` - “svcadm restart” after install update or remove
 - > `suspend_fmri` - “svcadm disable”, change then “svcadm enable”
- Call out to the appropriate SMF service
- Cannot directly enable a service
 - > Have to restart the manifest-import svc instead
- Use these instead of pre / post install scripts

SMF Integration - Example

```
set name=Description value="Test daemon pkg"  
dir group=sys mode=0755 owner=root path=/opt/test-daemon  
file daemon.sh owner=root group=sys mode=0755 path=/opt/test-daemon/  
daemon.sh  
file svc-testdaemon owner=root group=sys mode=0755  
path=/lib/svc/method/svc-testdaemon  
file testdaemon.xml owner=root group=sys mode=0444  
path=/var/svc/manifest/application/testdaemon.xml  
disable_fmri=svc:/application/test-daemon:default restart_fmri=svc:/system/  
manifest-import:default
```

More Information

- IPS Project site
 - > <http://opensolaris.org/os/project/pkg>
- OpenSolaris 2009.06 Docs
 - > <http://www.opensolaris.com/learn/>
- pkg-discuss alias
 - > <http://mail.opensolaris.org/mailman/listinfo/pkg-discuss>

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