Solaris 11 for Developers Webinar Series

Modern Software Packaging For Enterprise Developers

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Oracle Systems ISV Engineering
# Solaris 11 for Developers Webinar Series

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<td>Simplify Your Development Environment with Zones, ZFS &amp; More*</td>
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<td>- Record breaking compilers, powerful analysis tools, remote development</td>
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“Tell Them What You’re Going to Say”

- **Unique challenges** of software delivery, installation and maintenance in today’s Enterprise
- **Solaris features and technologies** to address these challenges
- **Useful, real-world advantages** of Solaris software packaging
- Solaris packaging and **Enterprise Developers**
The Ubiquity of Software Packaging

- Almost every user of computers deals with software packages – software must be delivered and installed.
- Huge differences between Consumer experience and Enterprise user experience.

From Ruest & Kelly 2005
Expectations of Today’s Enterprise Packaging

• Administrators want a packaging system that spans the Software Lifecycle and simplifies provisioning
• Everyone wants a packaging system that ‘just works’ and ‘does the right things’
• Heard most from our Customers: don’t make OS updating harder!
• Developers require a packaging system that allows for robust, complete and intuitive delivery and updating of software
• Packaging should not significantly add to planned or unplanned system downtime
“The Image Packaging System (IPS) is a new network-based package management system included in Oracle Solaris 11. It provides a framework for complete software lifecycle management such as installation, upgrade and removal of software packages.”

What This Means To You:

✓ Allows for network-based collections of packages (“repositories”)
✓ Package dependencies are now automatically enforced
✓ Systems interact with repositories -- not files – via industry-standard protocols
✓ Robust set of CLI and GUI tools for working with packages and repositories
IPS: High-Level Features

• Safe system upgrades with ZFS boot environments
  ➢ Multiple bootable environments possible
  ➢ No ‘broken, partial upgrades’

• Package ‘repositories’ of software
  ➢ Collections of packages can live on the internet, within the intranet, on a local filesystem, or on local optical media

• Automatic dependency checking
  ➢ ‘One-button’ package actions

• Extensive package publishing tools
  ➢ Command-line or GUI
IPS: Concepts

• **Actions** – the atomic unit of software delivery
  - One of: filesystem object, user, group or driver

• **Actuators** – ‘triggers’ that augment Actions
  - State-specific hooks into Solaris Service Management Facility

• **Packages** – collections of Actions

• **Facets** – Selectable subsets of a package
  - Separate out documentation or locales

• **Repositories** – collections of Packages
  - Collections of packages can live on the internet, within an intranet, on a local filesystem, or on local optical media

• **Publishers** – authors of packages
  - Publishers not the same as repositories
## Comparing IPS with SVR4 Packaging

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<th>SVR4</th>
<th>IPS</th>
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<tr>
<td>CLI</td>
<td>Numerous commands</td>
<td>‘pkg’ command</td>
</tr>
<tr>
<td>GUI</td>
<td>No</td>
<td>Package Manager</td>
</tr>
<tr>
<td>Dependencies enforced?</td>
<td>No</td>
<td>Automatically</td>
</tr>
<tr>
<td>Package access method(s)</td>
<td>Manually download package file and install</td>
<td>Install package directly from repository via CLI or GUI</td>
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<tr>
<td>Package versioning</td>
<td>No</td>
<td>Yes – addressable, and multiple versions can exist in one repository</td>
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Note: Solaris 11 is Based on IPS

• Which means…
Note: Solaris 11 is Based on IPS

- Which means… no more patching!
IPS in Action
IPS in Action

ereid@solaris11:~$ sudo pkg search -r gcc-45
INDEX ACTION VALUE PACKAGE
pkg.fmri set solaris/developer/gcc-45 pkg://developer/gcc-45@4.5.2-0.175.0.0.0.2.537
ereid@solaris11:~$
IPS in Action

ereid@solaris11:~$ sudo pkg install gcc-45
   Packages to install: 4
   Create boot environment: No
   Create backup boot environment: No
   Services to change: 1

DOWNLOAD
Completed

PKGS FILES XFER (MB)
4/4 1030/1030 123.6/123.6

PHASE
Install Phase
1270/1270

PHASE
Package State Update Phase
Image State Update Phase
ereid@solaris11:~$
IPS for Developers -- Considerations

• Strategy: Where should your packages and repositories live?
  ➢ What are the limitations on your customers environments?

• IPS and SVR4 packages can co-exist, if need be
  ➢ Solaris 11 supports both sets of commands

• IPS is not necessarily mutually exclusive from platform-independent installers
  ➢ Make use of IPS on Solaris 11 systems as part of an overall installer scheme

• For now, IPS is only implemented on Solaris 11, and requires ZFS
“Tell Them What You Said”

• Today’s Enterprise requires specific features and functionality to allow SysAdmins and Developers to deploy software effectively

• Oracle Solaris 11 provides a new robust software packaging framework to address these needs

• Developers can create packages and package repositories for software deployment on Solaris 11 (and future releases) today
To Learn More…

• Download Solaris 11 for free

• Learn more about IPS and Solaris Packaging

• “IPS for Developers” Whitepaper
  ➢  http://hub.opensolaris.org/bin/download/Project+pkg/files/ipsdevguide.pdf

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