Unit 4
AIX software installation and maintenance
After completing this unit, you should be able to:

- Define the package definitions and naming conventions
- Identify how software products and updates are installed and managed on the system
AIX product offerings

AIX

LPPs

AIX documentation

Expansion Pack

Bonus Pack Web
  (not available in AIX 6.1)

AIX Toolbox for Linux
  (included in AIX 6.1 Expansion pack)
Packaging definitions

LPP: bos

Collection of packages
Complete product

package: bos.INed
Collection of filesets

package: bos.adt

Smallest unit
Specific function

fileset: bos.INed

fileset: bos.adt.lib

fileset: bos.adt.prof
Bundles

- A *bundle* is a collection of packages and filesets suited for a particular environment
- Predefined system bundles in AIX include:
  - AllDevicesKernels
  - Alt_Disk_Install
  - App-Dev
  - CC_Eval.Graphics
  - CDE
  - GNOME
  - Graphics
  - KDE
  - Kerberos_5
  - Media-Defined
  - Mozilla
  - PerfTools
  - Server
  - cas_client and cas_server
  - Devices
  - Infocenter
  - openssh_client and openssh_server
  - wsm_remote
Fileset naming

LPP
Package
Fileset
Suffix

bos.terminfo.print.data

Message convention:
LPP.msg[.lang].package.fileset
Software updates

# oslevel

6.1.0.0

Version

Release

Modification

Fix

MIGRATION

smit update_all
Software states

Applied:

6.1.0.0 → Install → FILESET 6.1.0.1 (Old Version)

Commit or Reject

Applied FILESET 6.1.0.2 → Commit or Reject

FILESET 6.1.0.2 (New Version)

FILESET 6.1.0.1 (Old Version)

Committed:

6.1.0.2 → Install → FILESET 6.1.0.2

Committed FILESET 6.1.0.2
Software Installation and Maintenance

Move cursor to desired item and press Enter.

Install and Update Software
List Software and Related Information
Software Maintenance and Utilities
Software Service Management
Relocatable Software Installation and Maintenance
Network Installation Management
EZ NIM (Easy NIM Tool)
System Workload Partition Software Maintenance
System Backup Manager
Alternate Disk Installation
EFIX Management
Thin Server Maintenance

F1=Help      F2=Refresh      F3=Cancel      F8=Image
F9=Shell      F10=Exit       Enter=Do
Install and Update Software

Move cursor to desired item and press Enter.

- Install Software
- Update Installed Software to Latest Level (Update All)
- Install Software Bundle
- Update Software by Fix (APAR)
- Install and Update from ALL Available Software

F1=Help       F2=Refresh       F3=Cancel       F8=Image
F9=Shell      F10=Exit         Enter=Do
## Install Software

Type or select values in entry fields.
Press Enter AFTER making all desired changes.

<table>
<thead>
<tr>
<th>Entry Fields</th>
</tr>
</thead>
<tbody>
<tr>
<td>* INPUT device / directory for software</td>
</tr>
<tr>
<td>/dev/cd0</td>
</tr>
<tr>
<td>* SOFTWARE to install</td>
</tr>
<tr>
<td>[_all_latest]</td>
</tr>
<tr>
<td>PREVIEW only? (install operation will NOT occur)</td>
</tr>
<tr>
<td>no</td>
</tr>
<tr>
<td>COMMIT software updates?</td>
</tr>
<tr>
<td>yes</td>
</tr>
<tr>
<td>SAVE replaced files?</td>
</tr>
<tr>
<td>no</td>
</tr>
<tr>
<td>AUTOMATICALLY install requisite software?</td>
</tr>
<tr>
<td>yes</td>
</tr>
<tr>
<td>EXTEND file systems if space needed?</td>
</tr>
<tr>
<td>yes</td>
</tr>
<tr>
<td>OVERWRITE same or newer versions?</td>
</tr>
<tr>
<td>no</td>
</tr>
<tr>
<td>VERIFY install and check file sizes?</td>
</tr>
<tr>
<td>no</td>
</tr>
<tr>
<td>Include corresponding LANGUAGE filesets?</td>
</tr>
<tr>
<td>yes</td>
</tr>
<tr>
<td>DETAILED output?</td>
</tr>
<tr>
<td>no</td>
</tr>
<tr>
<td>Process multiple volumes?</td>
</tr>
<tr>
<td>yes</td>
</tr>
<tr>
<td>ACCEPT new license agreements?</td>
</tr>
<tr>
<td>no</td>
</tr>
<tr>
<td>PREVIEW new LICENSE agreements?</td>
</tr>
<tr>
<td>no</td>
</tr>
</tbody>
</table>

F1=Help         F2=Refresh        F3=Cancel       F4=List
F5=Reset        F6=Command        F7=Edit         F8=Image
F9=Shell        F10=Exit          Enter=Do

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Software inventory

# smit list_installed

List Installed Software and Related Information

Move cursor to desired item and press Enter.

List Installed Software
List Installed Software by Bundle
List Applied but Not Committed Software Updates
Show Software Installation History
Show Fix (APAR) Installation Status
List Fileset Requisites
List Fileset Dependents
List Files Included in a Fileset
List Fileset Containing File
Show Installed License Agreements

F1=Help      F2=Refresh      F3=Cancel      F4=List
F5=Reset     F6=Command      F7=Edit       F8=Image
F9=Shell     F10=Exit        Enter=Do

ls1pp command:
  -L  Lists the installed software
  -h  Shows the history of a software product
# lslpp -l "bos."

<table>
<thead>
<tr>
<th>Fileset</th>
<th>Level</th>
<th>State</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Path: /usr/lib/objrepos</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>bos.64bit</td>
<td>6.1.0.10</td>
<td>COMMITTED</td>
<td>Base Operating System 64 bit Runtime</td>
</tr>
<tr>
<td>bos.acct</td>
<td>6.1.0.10</td>
<td>COMMITTED</td>
<td>Accounting Services</td>
</tr>
<tr>
<td>bos.adt.base</td>
<td>6.1.0.10</td>
<td>COMMITTED</td>
<td>Base Application Development Toolkit</td>
</tr>
<tr>
<td>bos.adt.include</td>
<td>6.1.0.11</td>
<td>COMMITTED</td>
<td>Base Application Development Include Files</td>
</tr>
<tr>
<td>bos.adt.lib</td>
<td>6.1.0.10</td>
<td>COMMITTED</td>
<td>Base Application Development Libraries</td>
</tr>
<tr>
<td>bos.alt_disk_install.boot_images</td>
<td>6.1.0.10</td>
<td>COMMITTED</td>
<td>Alternate Disk Installation Disk Boot Images</td>
</tr>
<tr>
<td>bos.alt_disk_install.rte</td>
<td>6.1.0.10</td>
<td>COMMITTED</td>
<td>Alternate Disk Installation Runtime</td>
</tr>
<tr>
<td>bos.cdmount</td>
<td>6.1.0.0</td>
<td>COMMITTED</td>
<td>CD/DVD Automount Facility</td>
</tr>
<tr>
<td>bos.content_list</td>
<td>6.1.0.0</td>
<td>COMMITTED</td>
<td>AIX Release Content List</td>
</tr>
<tr>
<td>bos.diag.com</td>
<td>6.1.0.10</td>
<td>COMMITTED</td>
<td>Common Hardware Diagnostics</td>
</tr>
<tr>
<td>bos.diag.rte</td>
<td>6.1.0.10</td>
<td>COMMITTED</td>
<td>Hardware Diagnostics</td>
</tr>
<tr>
<td>bos.diag.util</td>
<td>6.1.0.10</td>
<td>COMMITTED</td>
<td>Hardware Diagnostics Utilities</td>
</tr>
</tbody>
</table>

... (rest of output omitted) ...
Fix repository

Available updates (from IBM Web site)

Fix repository (locally stored filesets) ➔ Installed fixes
Fix Central Web site

Fix Central provides fixes and updates for your system's software, hardware, and operating system.

Product family
System p

Product
AIX

Version
6.1

Fix type
Fix packs

Continue
Fix packs
for AIX 6.1 operating system

AIX updates are provided as Technology Level packages or Service Packs. These generally available updates have been tested to operate best when all updates in a fix pack are installed. IBM recommends installing the complete fix pack.

Select a Technology Level

All 6.1

Go

Fix packs
Name | Type | Prereqs | Date
---|---|---|---
6100-00-01-0748 | Service Pack | | November 2007
Software Service Management

# smit service_software

Software Service Management

Move cursor to desired item and press Enter.

Service Update Management Assistant (SUMA)
Comparison Reports
Rename Software Images in Repository
Clean Up Software Images in Repository

F1=Help        F2=Refresh        F3=Cancel        F8=Image
F9=Shell       F10=Exit          Enter=Do
Comparison Reports

# smit compare_report

Move cursor to desired item and press Enter.

Compare Installed Software to Fix Repository
Compare Installed Software to List of Available Updates
Compare Fix Repository to List of Available Updates

F1=Help        F2=Refresh        F3=Cancel        F8=Image
F9=Shell       F10=Exit         Enter=Do
Software Maintenance and Utilities

# smit maintain_software

Software Maintenance and Utilities

Move cursor to desired item and press Enter.

Commit Applied Software Updates (Remove Saved Files)
Reject Applied Software Updates (Use Previous Version)
Remove Installed Software

Rename Software Images in Repository
Clean Up Software Images in Repository

Copy Software to Hard Disk for Future Installation
Copy Software Bundle to Hard Disk for Future Installation

Check Software File Sizes After Installation
Verify Software Installation and Requisites

Clean Up After Failed or Interrupted Installation

Service Update Management Assistant (SUMA)

F1=Help      F2=Refresh      F3=Cancel      F8=Image
F9=Shell     F10=Exit       Enter=Do
instfix command

- Installs a fix:
  
  ```
  # instfix -k IY58143 -d /dev/cd0
  ```

- Searches for a fix:
  
  ```
  # instfix -ik IY58143
  All filesets for IY58143 were found.
  ```

- Searches for a fix by keyword:
  
  ```
  # instfix -s SCSI -d /dev/cd0
  ```

- Lists which AIX BOS maintenance levels are partly or fully installed:
  
  ```
  # instfix -i | grep ML
  All filesets for 6.1.0.0_AIX_ML were found.
  All filesets for 6100-01_AIX_ML were found.
  ```

- Lists which filesets are missing in a partly installed AIX BOS maintenance level:
  
  ```
  # instfix -ciqk 6100-01_AIX_ML | grep :--:
  ```
1. Which of the following states can your software be in, in order for you to be able to use it? (Select all that apply)
   a. Applied state  
   b. Removed state  
   c. Install state  
   • Commit state

2. What command is used to list all installed software on your system? _______________

4. Which of the following can you install as an entity? (Select all that apply)
   a. Fileset  
   b. LPP  
   c. Package  
   d. Bundle

• What is the difference between the SMIT menus: Install Software and Update Installed Software to Latest Level (Update All)? ________________________________
1. Which of the following states can your software be in, in order for you to be able to use it? (Select all that apply)
   - Applied state
   - Removed state
   - Install state
   - Commit state

   What command is used to list all installed software on your system?
   `lslpp -l`

3. Which of the following can you install as an entity? (Select all that apply)
   - Fileset
   - LPP
   - Package
   - Bundle

   What is the difference between the SMIT menus: **Install Software** and **Update Installed Software to Latest Level (Update All)**?

   **Install Software** by default installs everything from the installation media (except printer and devices) onto the system.
   **Update Installed Software to Latest Level (Update All)** installs only updates to filesets already installed on your system.
Exercise 4: AIX software installation

- List and install AIX software
- Working with AIX fixes (optional)
Unit summary

- AIX package naming conventions include the following terms:
  - LPP
  - Package
  - Fileset
  - Suffix

- The easiest way to install software is to use SMIT. The `geninstall` and `installp` commands are also available.

- Use the `lslpp` command, SMIT or the Web-based System Manager to list all software products installed on the system.