Patching VISTA

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Resources for This Presentation

- RTFM: Kernel Version 8 Systems Manual
  - Part 5: KIDS
  - pages 398 - 478j
- As usual, the details are documented, but the big picture on the lifecycle is not
- Look at Sample Patch Tracking Spreadsheet
- Study and Test KIDS Options in a Test Environment

Three Classes of VISTA Software

- I: developed by VA or IHS national office

- II: not developed by VA or IHS, but meets Class I standards (e.g., WorldVistA)

- III: developed by production sites

VISTA Software Sources

- VA national development offices release Class I software in a stream

- Innovations outside the VA patch stream have until now always been Class III

- WorldVistA accepts Class III innovations, runs them through the Class I standards and processes, and releases them as Class II

VISTA Software Structure

- VISTA is an integrated whole, but paradoxically it is also modularized:
  - Packages
  - Modules
  - Package Elements

Package Elements: Primary

- Package (?)
- Build (9.6)
- Data Dictionary (0)
- Data (1)
- Routine (*)
- Routine (9.8)
- Option (19)
- Protocol (101)
- Remote Procedure (8994)

Package Elements: Secondary

- Function (.5)
- Dialog (.84)
- Parameter (8989.5)
- Parameter Definition (8989.51)
- Device (?)
- Domain (?)
- Bulletin (3.6)
- Mail Group (3.8)
- Help Frame (9.2)
- Security Key (19.1)
- New Person (200)

Package Elements: Templates

- Print Template (.4)
- Sort Template (.401)
- Input Template (.402)
- Form (.403)
- Block (.404)
- Foreign Format (.44)
- Import Template (.46)
- List Template (409.61)

Package Elements: Non-KIDS

- Manual (*)
- Script (*)
- Configuration File (*)
- Non-MUMPS Program (*)

VISTA Update Ingredients

- Package file (9.4)
- Package Elements (routines and files)
- Build file (9.6)
- Install file (9.7)
- Transport global
- Distribution file or message
- Patches

VISTA Update Processes

- New Package

- New Version

- Patch (Incremental Update)

VISTA Lifecycle Sites

- Production Sites
  - Problems or Opportunities Arise
- Support Hub (Forum and OpenForum)
  - National Online Information Sharing (NOIS)
- Development Sites
  - Kernel Installation & Distribution System (KIDS)
- Forum and OpenForum
  - Patch Module
  - Testing and Verification Sites
  - VistA Online & Vista Documentation Library
- Production Sites (Test & Live Environments)

The Software Stream

- Occasional Package Releases
- Frequent Patches (about 10 each week)
- Most patches only depend on other patches from within their own package
- Some depend on those from other packages
- A few are compound patches, combining patches from different packages
- This is a partially ordered set, and must be installed as such

How to Patch in Order

- Each patch lists its dependencies, and includes a sequence number (by package)

- Keeping up is the easiest approach--just install whatever is new each week

- Running reports on the Install file can tell you what you are missing

- You should create and maintain one or more spreadsheets to track your patching

- Checking Routine Patch Lists

A Sample Patch

- Identification
  - Name
  - Sequence Number
- Description
  - Dependencies
  - Explanation
  - Checksums
- KIDS Distribution

Reports from the Install File

- Sorting by Package
- Sorting by Install Completion Date
- Sorting by Sequence Number
- demo

A Patch-Tracking Spreadsheet

- Master Sheet to Track Releases
- Subsheets to Track Installation Batches
- Subsheets to Track Patches by Package

- Establishing Sequence
- Finding All Distribution Files
- Finding Forward-Compatibility Conflicts
- Tracking Deferred Work

A Patch Directory Structure

- One Directory per Package
- All Files in the Package Directories
  - Package Releases
  - Patch Distributions
  - Documentation

The Patch Batch Checklist

- Record Your Current Patching Status
- Acquire All Missing Patches
  - add the distribution files to your directories
  - add the patches to the spreadsheet
- Put the Batch in Order (Date, Sequence #)
- Check for Conflicts (Checksums)
- Install Easy (Unconflicting) Patches
- Install Hard (Conflicting) Patches & Sequels

Individual Patch Checklist

- Acquire Patch & All Distribution Files
- Install Predecessors (usually) & Dependants
- Check for Non-Forward-Compatibility Conflicts
- Study Patch (Features & Package Elements)
- Load, Check, Print, Compare, Backup
  - Manually Back up Non-Routine Elements If Conflict
- Install, Including Any Manual Post-Install
- Manually Resolve Conflicts, If Any

Options You Need

- KIDS [XPD MAIN]
- VA File Manager [DIUSER]
- Programmer Mode [DIPROGMODE]
- the checksum checking option
- write a new checksum option
- web browser, ssh client, sftp client
- a good text editor

Installing a Few Patches

- First Slow, with Explanation
- Then More Quickly, Stopping for Questions
- Then at Top Speed

Conflict Resolution

- Conflict Resolution Is Programming
- It Involves Four Copies of a Routine:
  - Class III Before (which you wrote before)
  - Class I Before (which you overwrote)
  - Class I After (introduced by the patch)
  - Class III After (which you must now write)
- Comment Extensively
  - Who, when, why, before, after, change history

Questions & Answers