



# JavaOne™

Sun's 2001 Worldwide Java Developer Conference™

## Building Installers for the Java Platform: the Results of JSR 38

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# Presentation Goal

- To inform you about the ongoing specification work for cross platform installer and builder API specification, Java Specification Request (JSR) 38



# Objectives

- As a result of this presentation, you will:
  - better understand the installer architecture
  - learn how to build your own installer
  - learn where to download the demo products
  - learn how to get access to the specification
  - learn how to get involved in the Java Community Process (JCP)



# Presentation Topics

- JSR 38 runtime features and architecture
- GUI installer builder and demonstration
- Cross platform installer and demonstration



# Problems Addressed by JSR 38

- Cross-platform application deployment is the rule, not the exception
- Handle inter-application dependencies
- Manage conflict resolution
- Sufficient flexibility to address custom install problems
- Open solutions generally unavailable

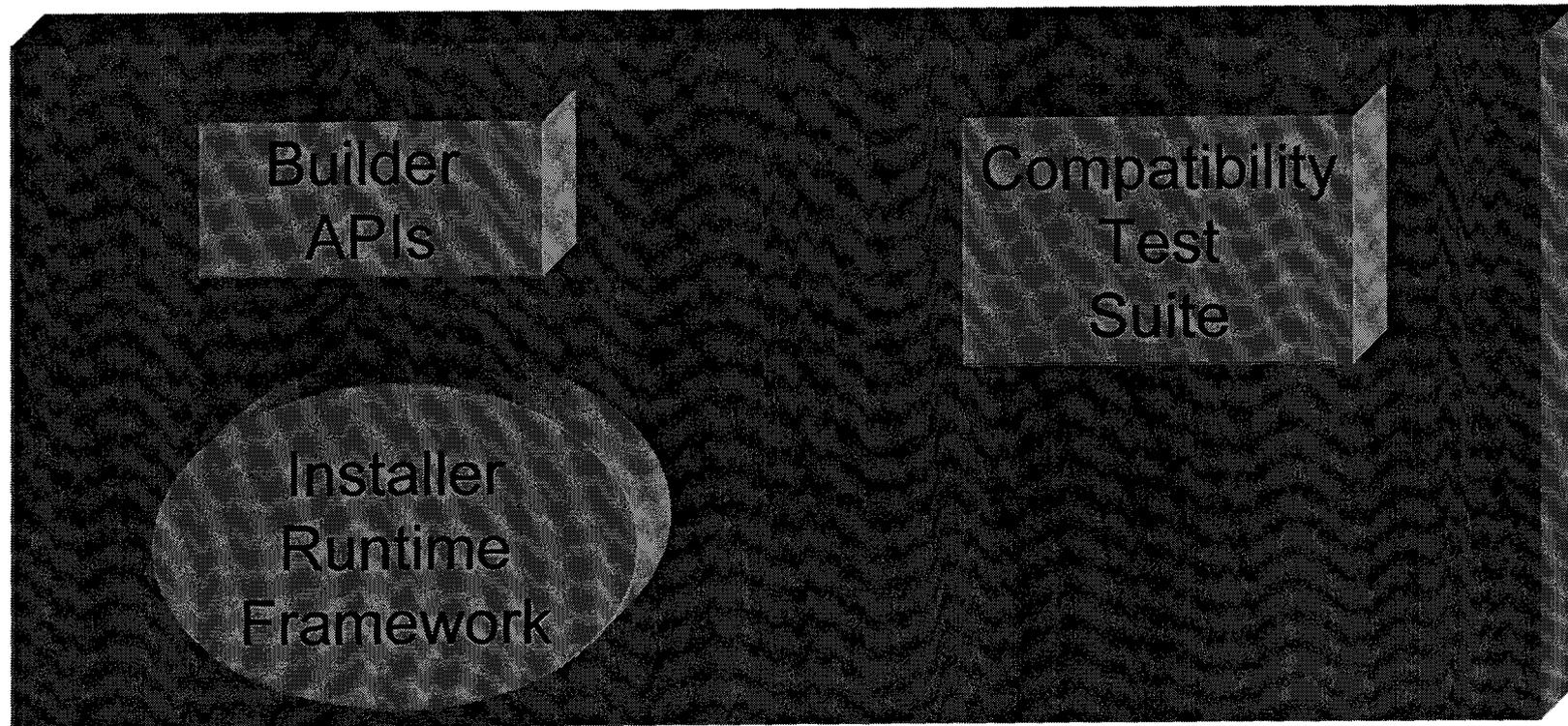


# JSR 38's Approach to the Problem

- Provide level of abstraction between O/S and services
- Provide a product registry
- Provide extensibility at service and UI layers
- Create a public specification and open implementation through the Java Community Process



# What JSR 38 Is Addressing



# Commercial Origins

- Originally based upon Sun's WebStart 3.0 product with these new features:
  - eliminates dependency on a custom class loader
  - self extracting jar file as a distribution vehicle
  - accommodates remote installation
  - extensibility designed up front
  - accommodates Swing, AWT, and console user interfaces
  - open source, will be freely available



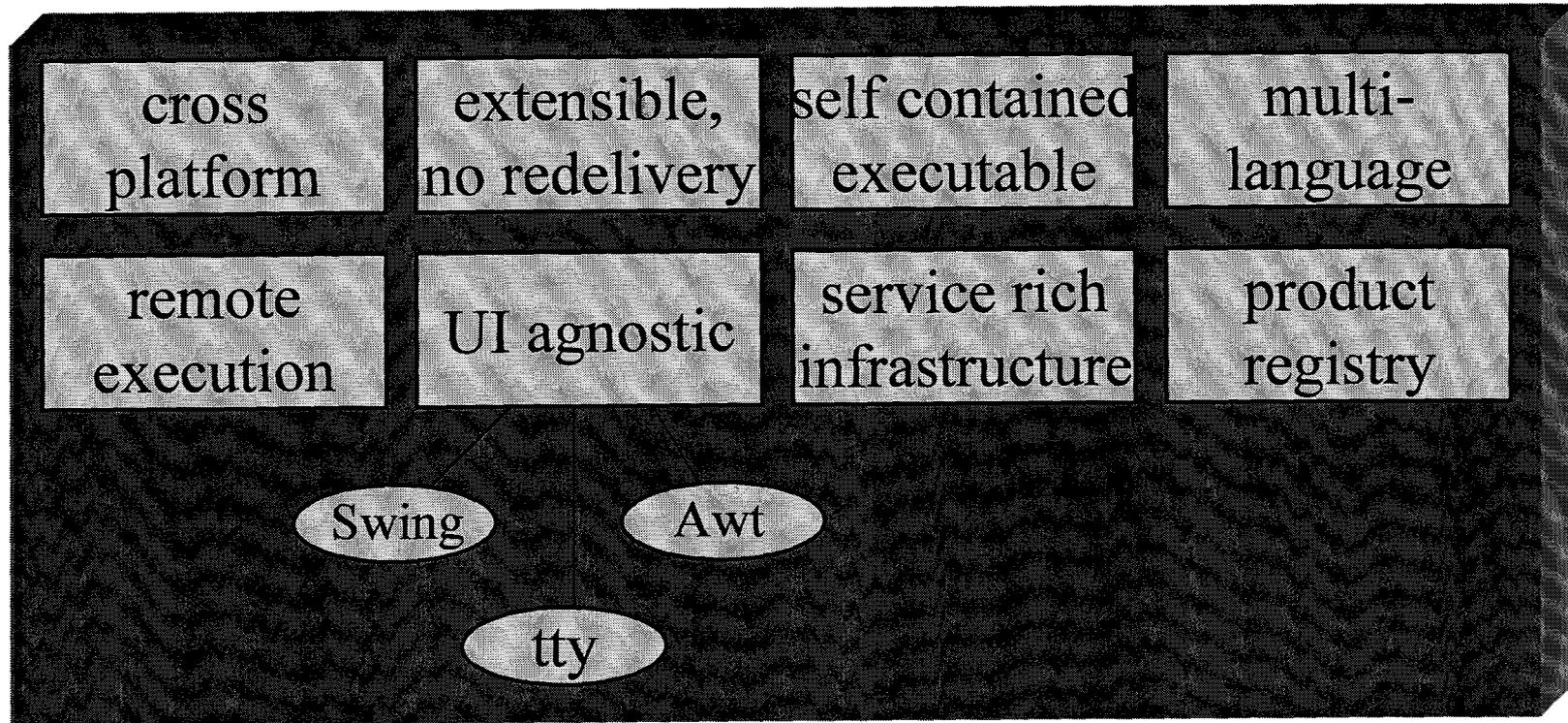
# The Other Web Start

- How does JNLP (JSR 56) relate to JSR 38?
  - web centric model, no installation phase
  - describes appl. package on a web server
  - standard execution environment for appl.
  - designed for an online strategy
- JNLP is “not a general installer for applications”
- JNLP could launch JIFI jar files
- JNLP could install JRE etc.

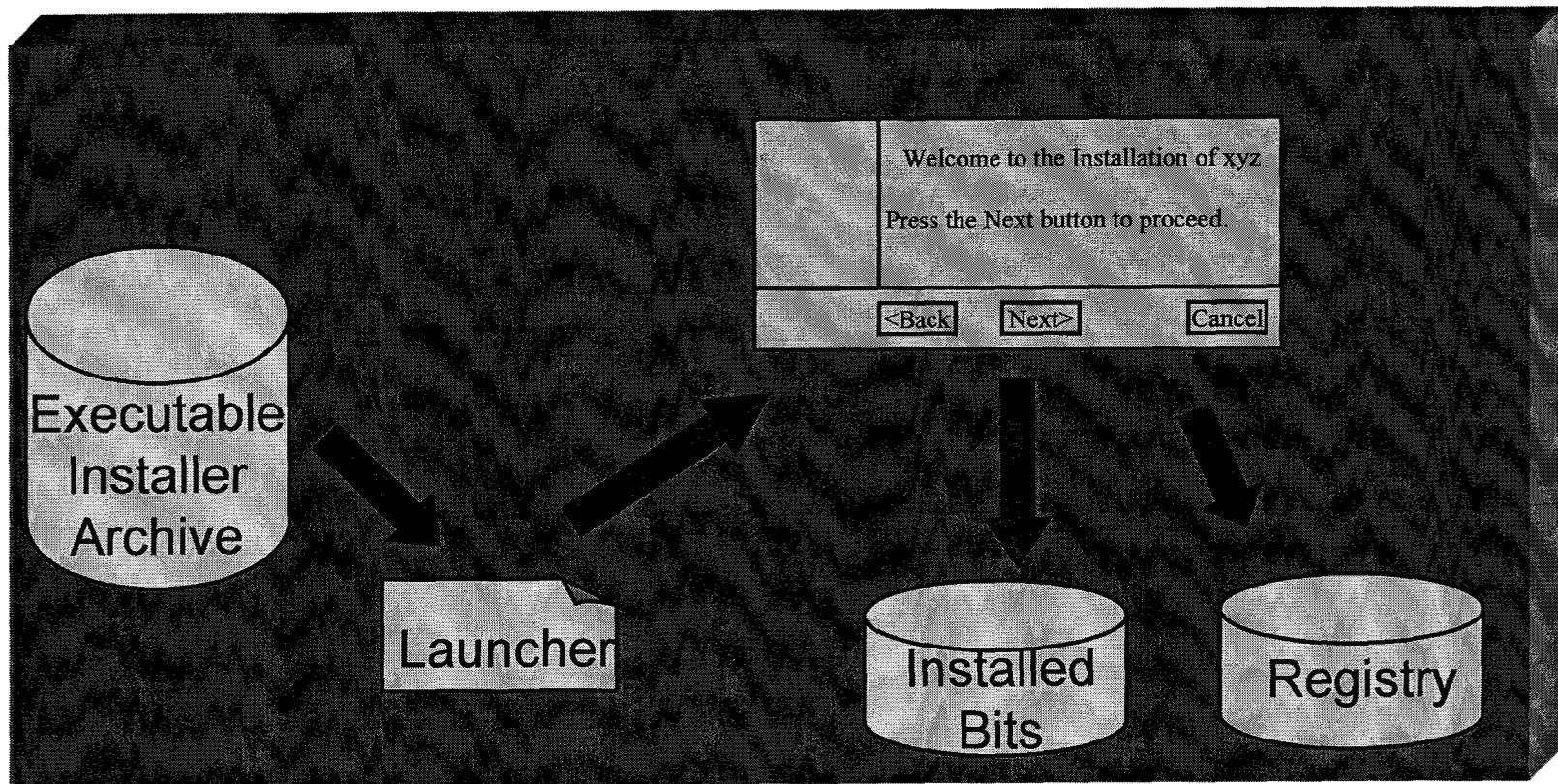


# Runtime Features

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# Runtime Architecture: Lifecycle

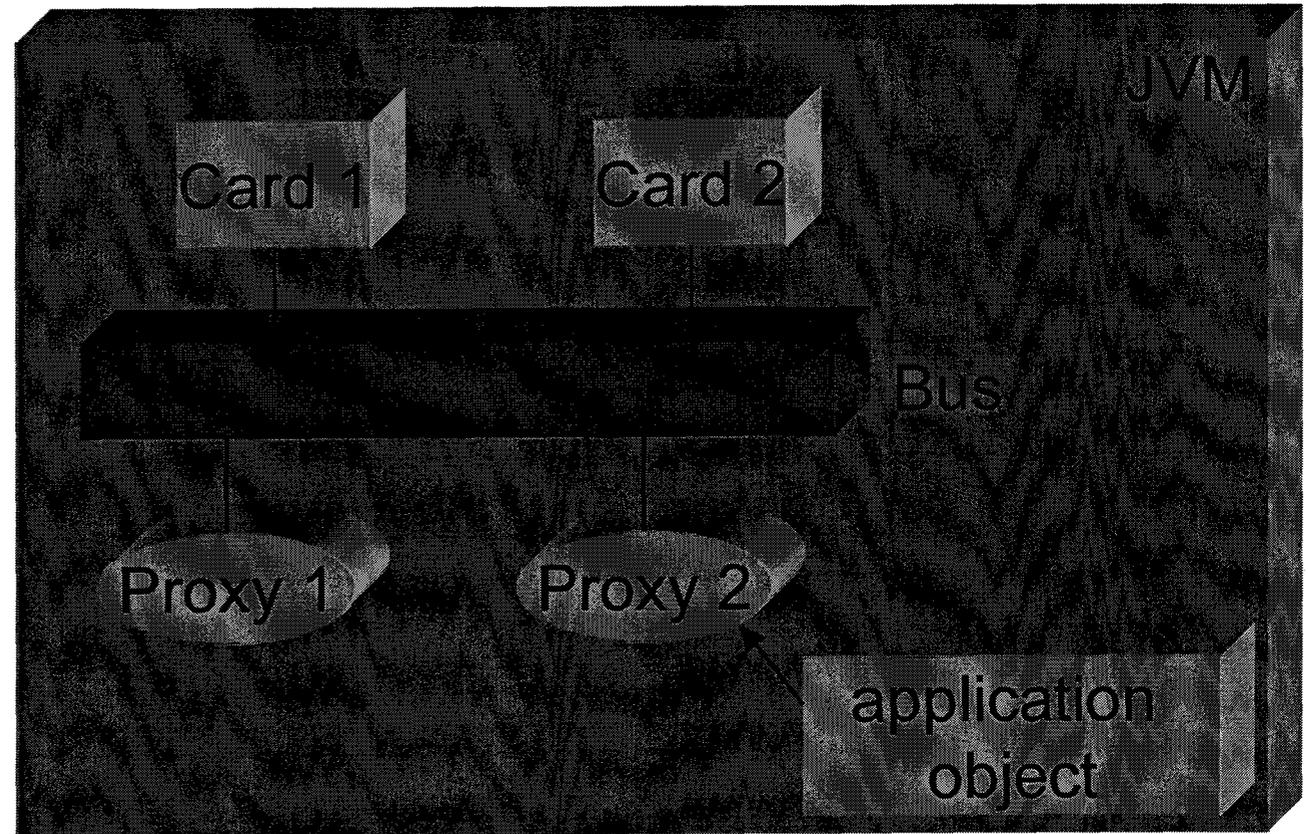


# Runtime Architecture: Communication Bus

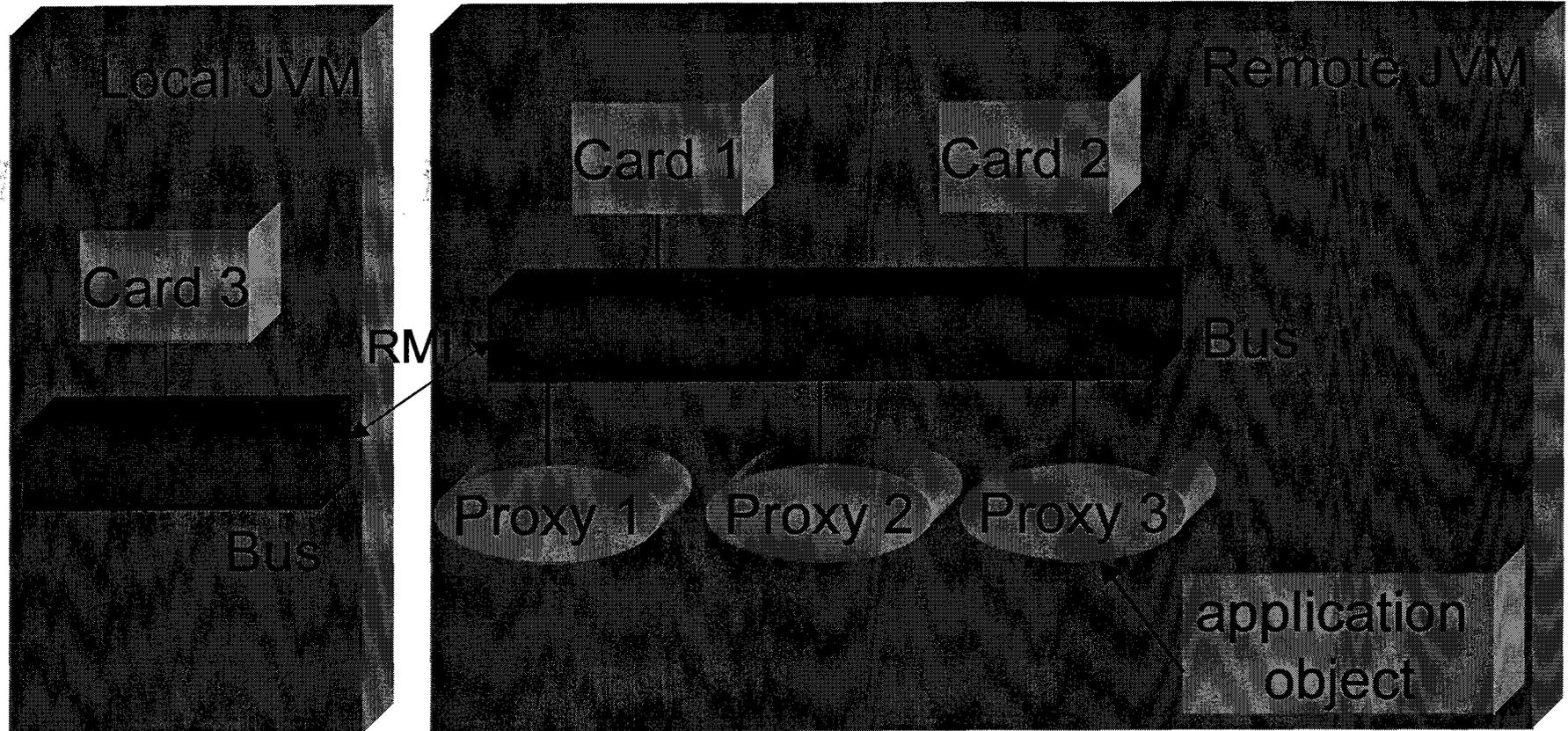
- Normalizes communication between services
- Facilitates transparent remote operations
- Provides coordination and synchronization of services
- Provides execution of service methods anywhere in the system
- Allows for future growth of integrated services



# Runtime Architecture: Standalone Operation



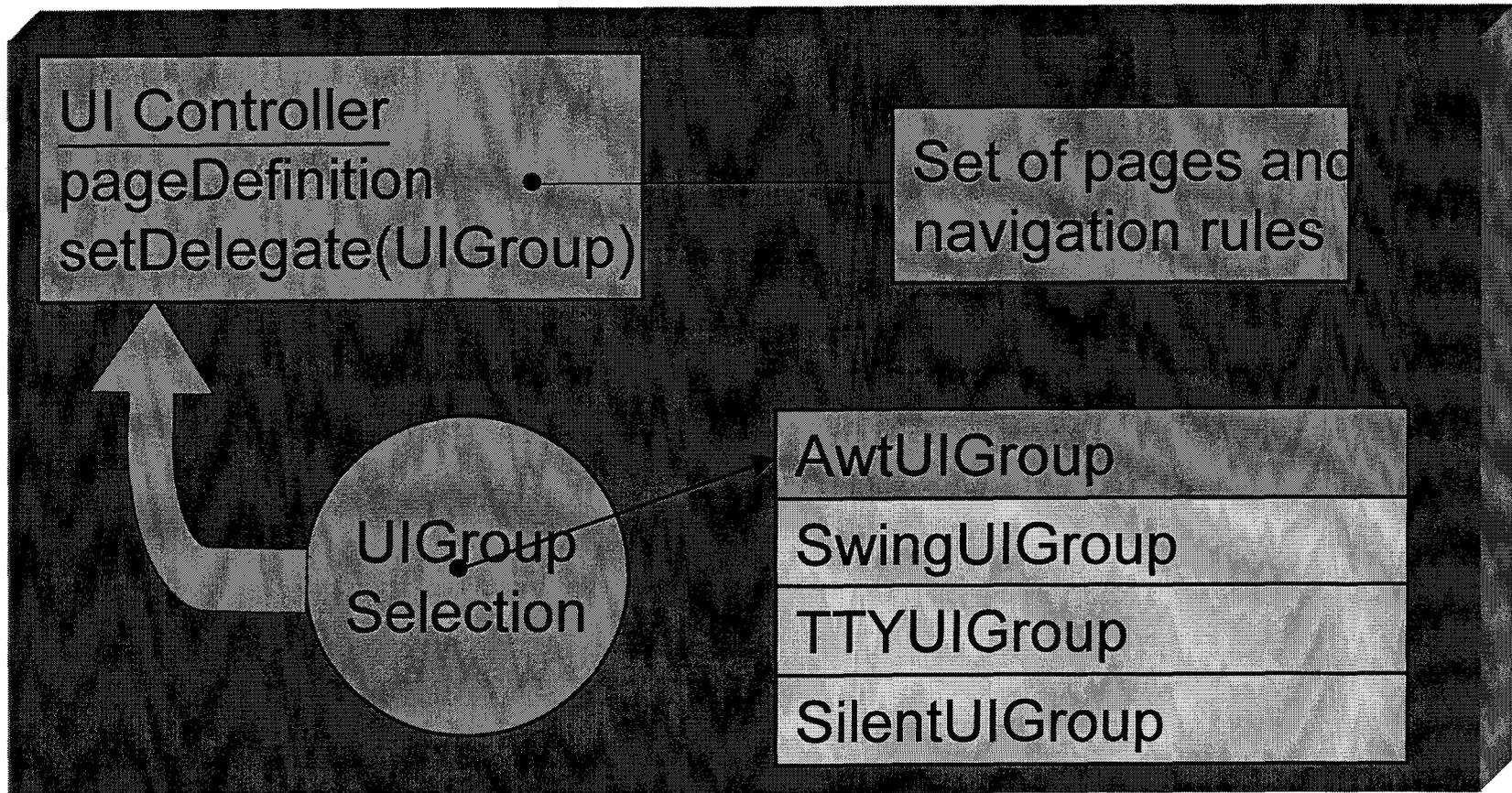
# Runtime Architecture: Remote Operation



# Runtime Architecture: Services

- UI/navigation
- File
- Filesystem
- Archive
- Product definition
- Product registry
- Logging

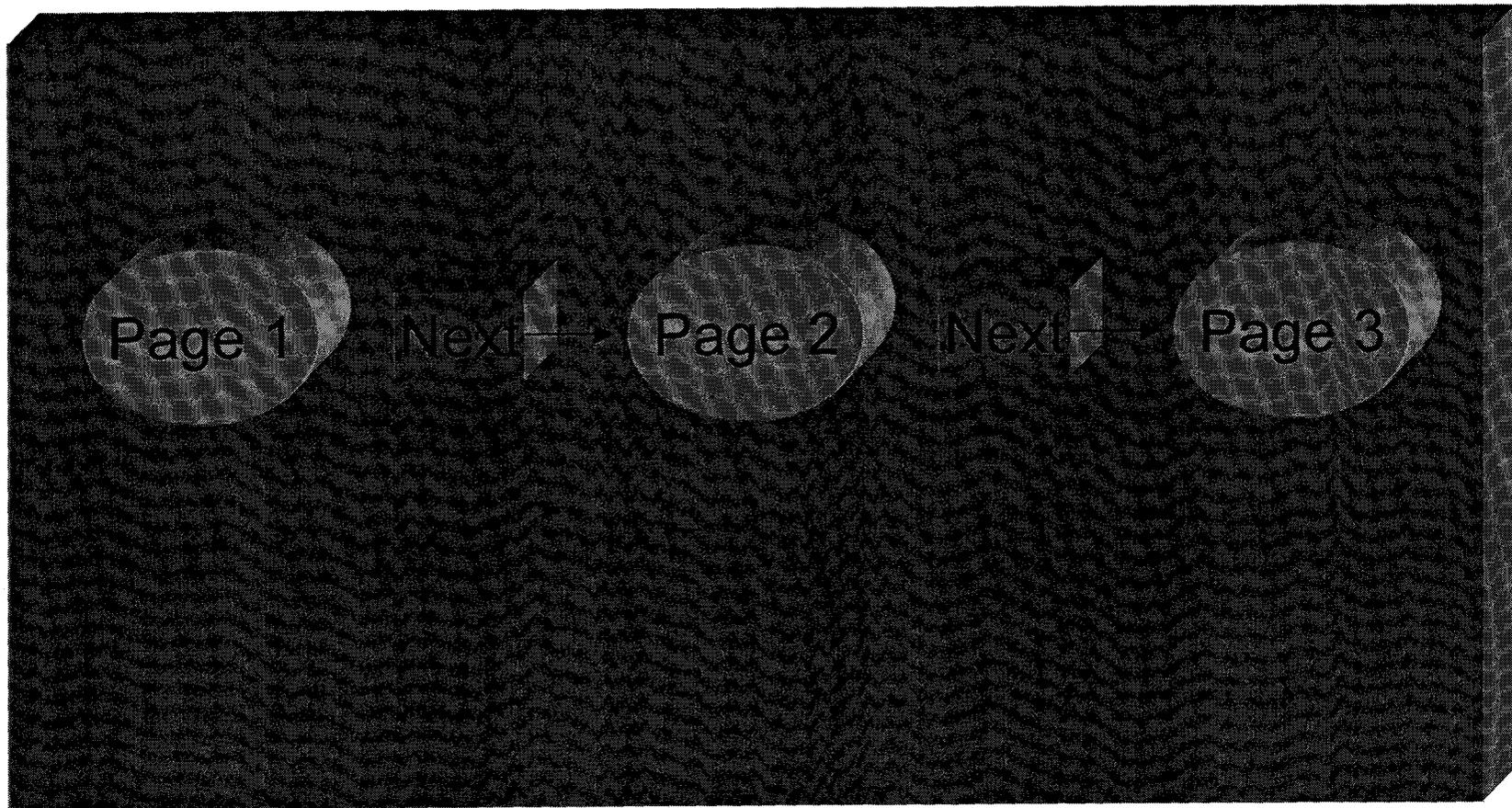
# UI Service Architecture



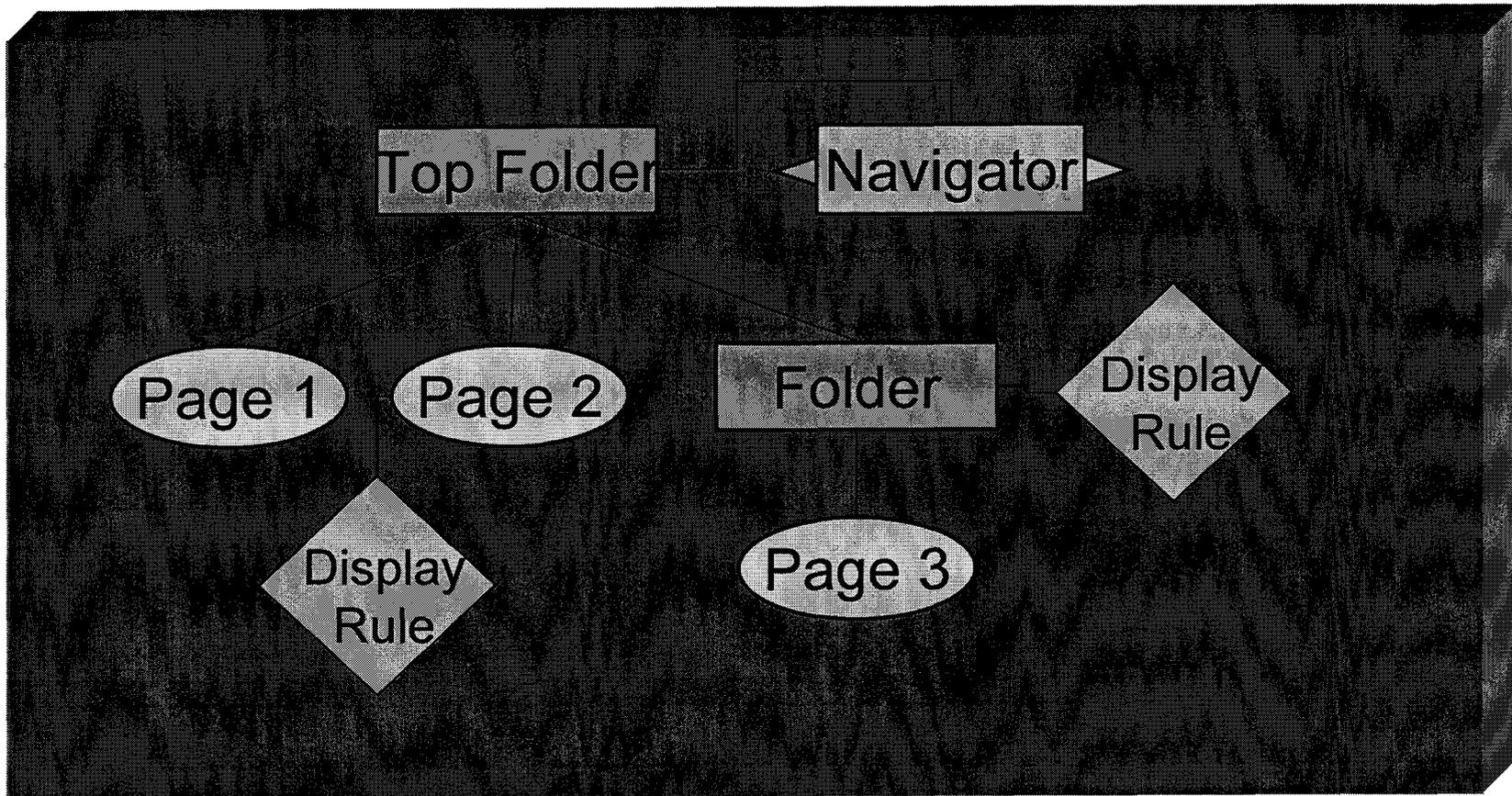
# UI Service Architecture: Navigation

- UI Navigation Model
  - Page definition members
  - Iterator
  - Page definition

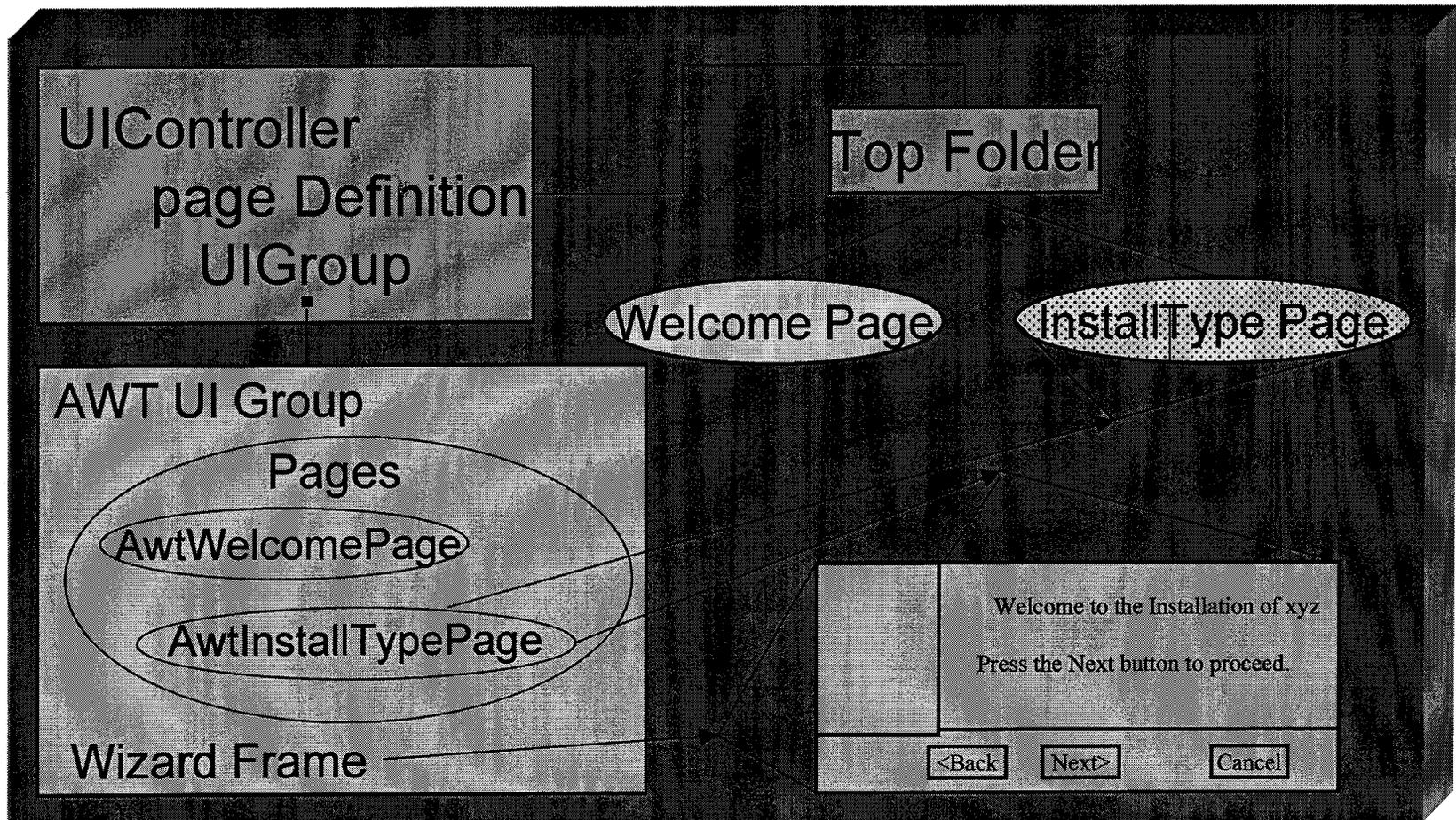
# Pages and Navigation: User's View



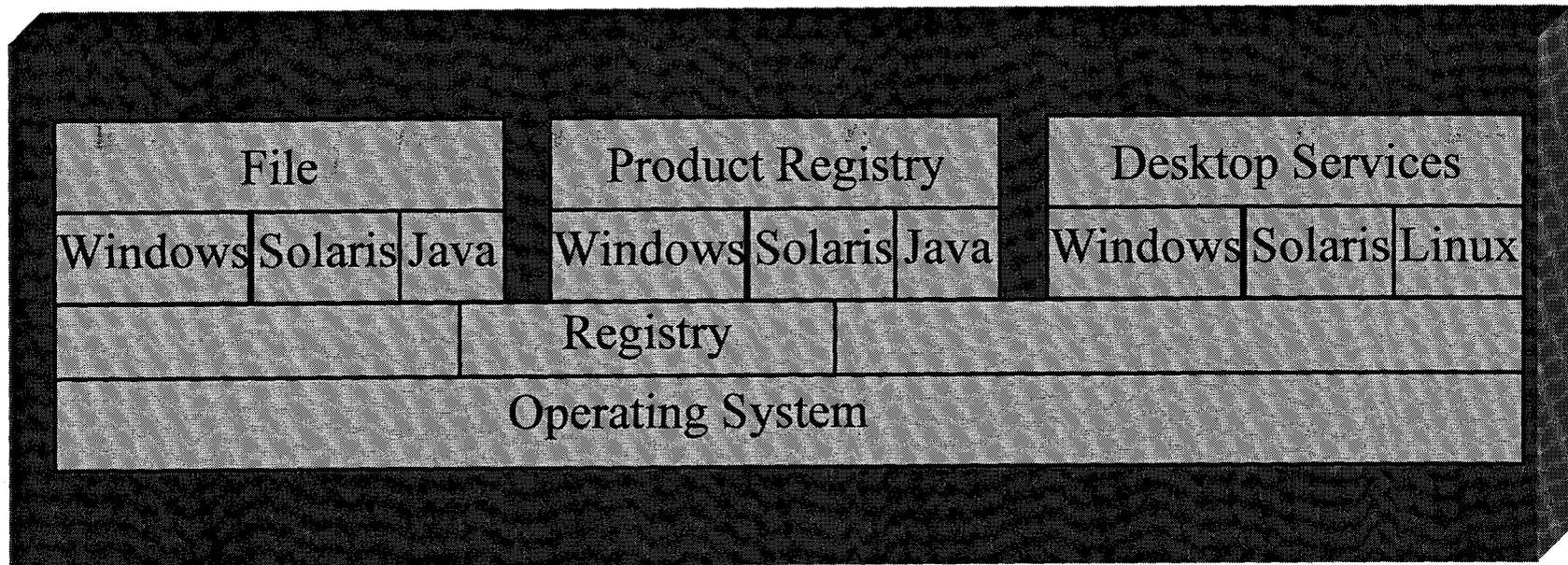
# Pages and Navigation: Page Definition



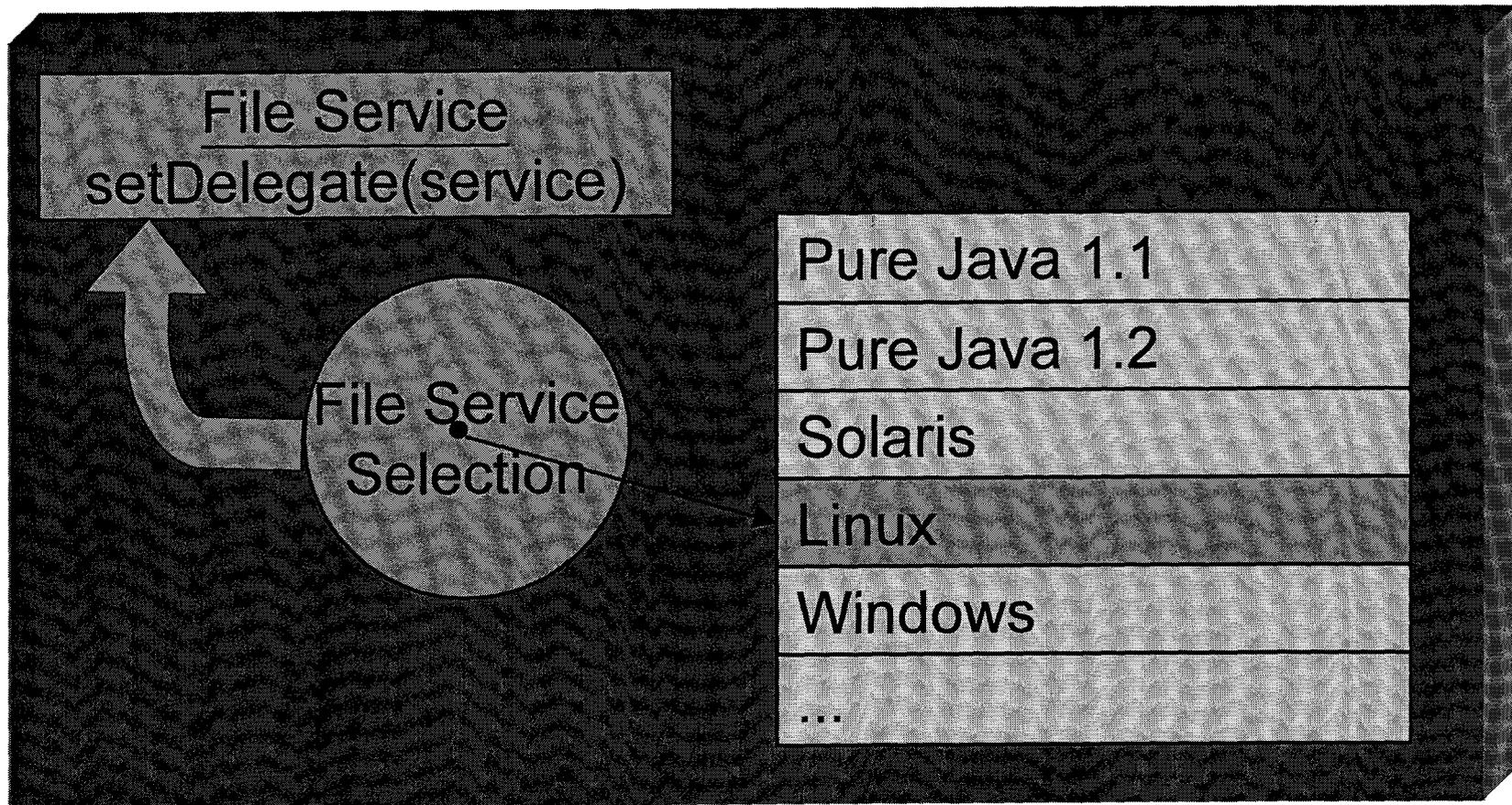
# Pages and Navigation: Page Display



# Platform Abstraction Overview



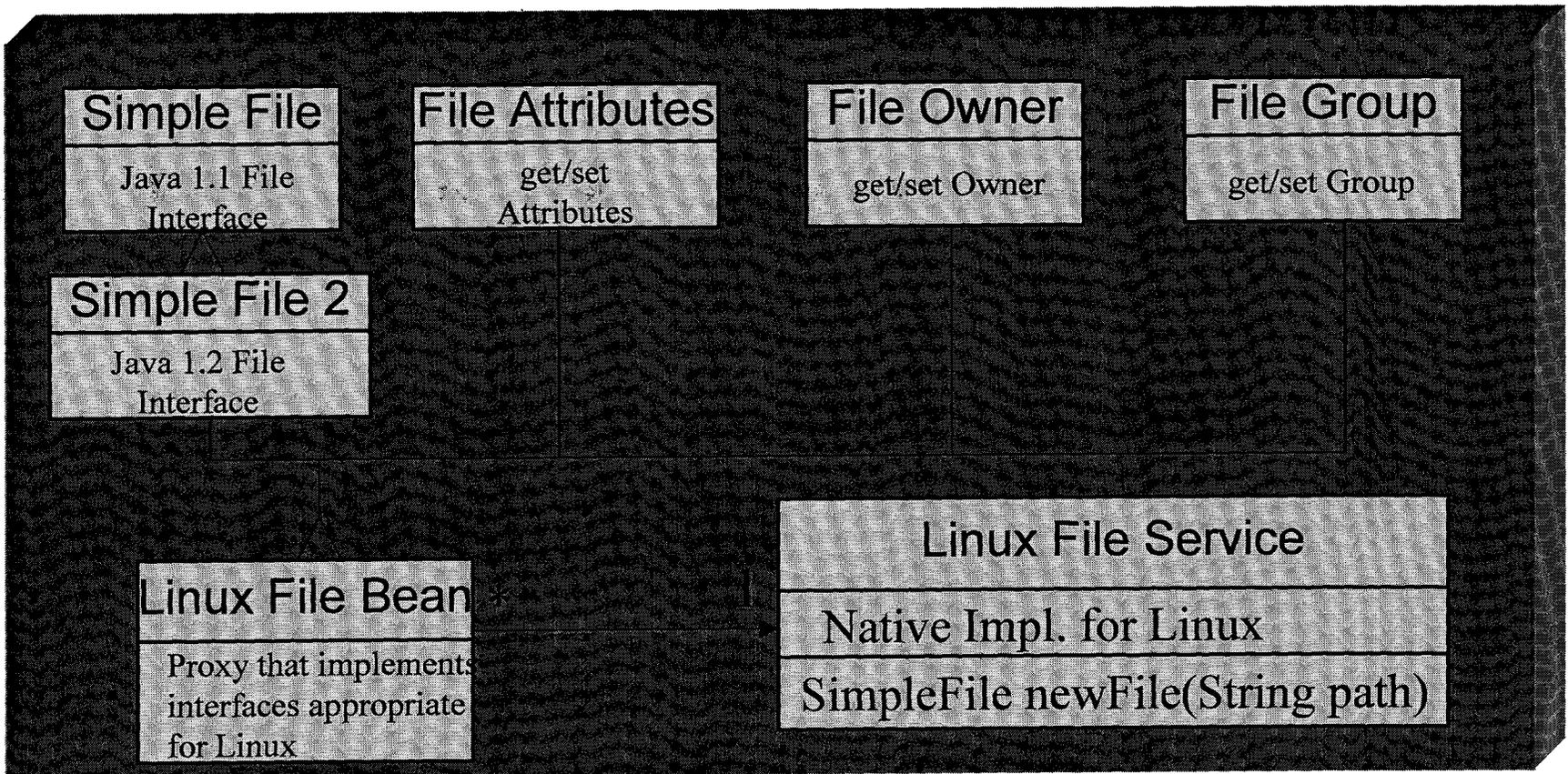
# File Service Architecture



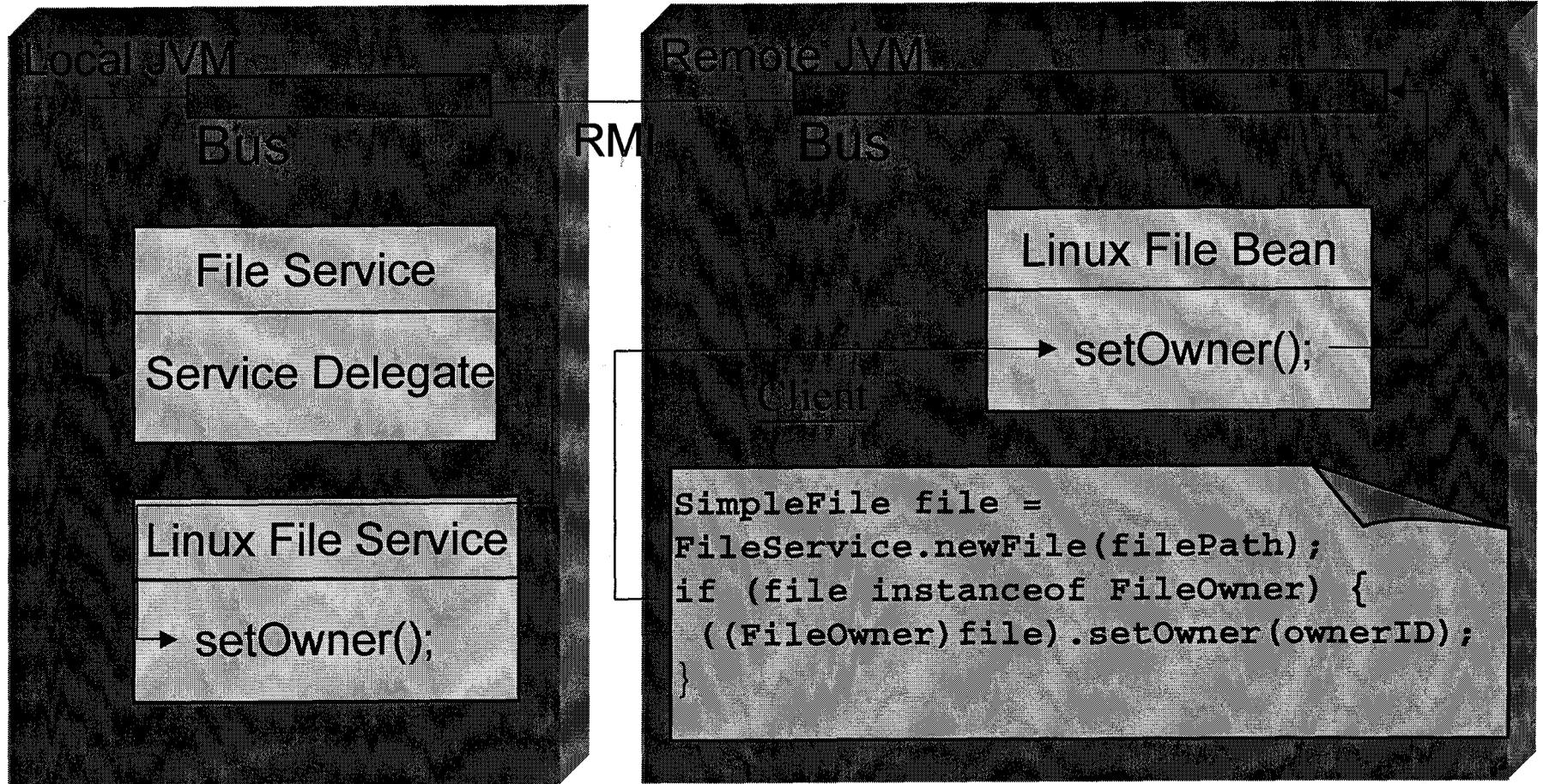
# File Service Architecture

- File service selection criteria:
  - Can the service implementation be instantiated?
  - Is the runtime platform acceptable to the service?
  - Are the required resources available?
  - Select the remaining service with the most methods

# File Service Architecture



# File Service Architecture



# Product Definition Service

- Product
- Feature
- Component
- Installable units
  - not registerable
  - extensible
  - current support for:
    - platform independent file

# Product Definition Service

- Installable Units (cont)
  - future support for
    - zip file
    - RPM
    - Solaris Package
    - tar file
    - HP swinstall
    - AIX installp
    - CAB file

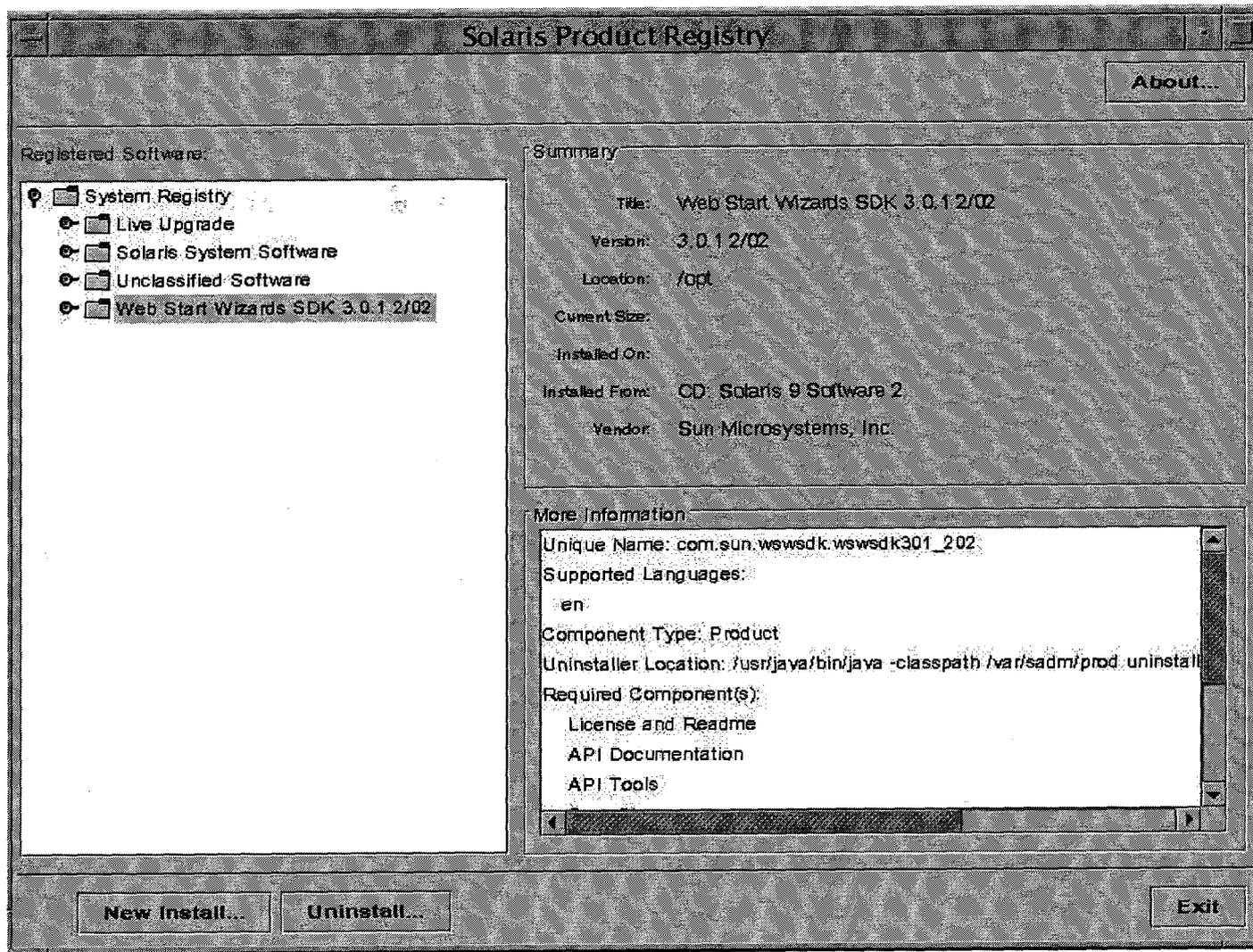


# Registry Service

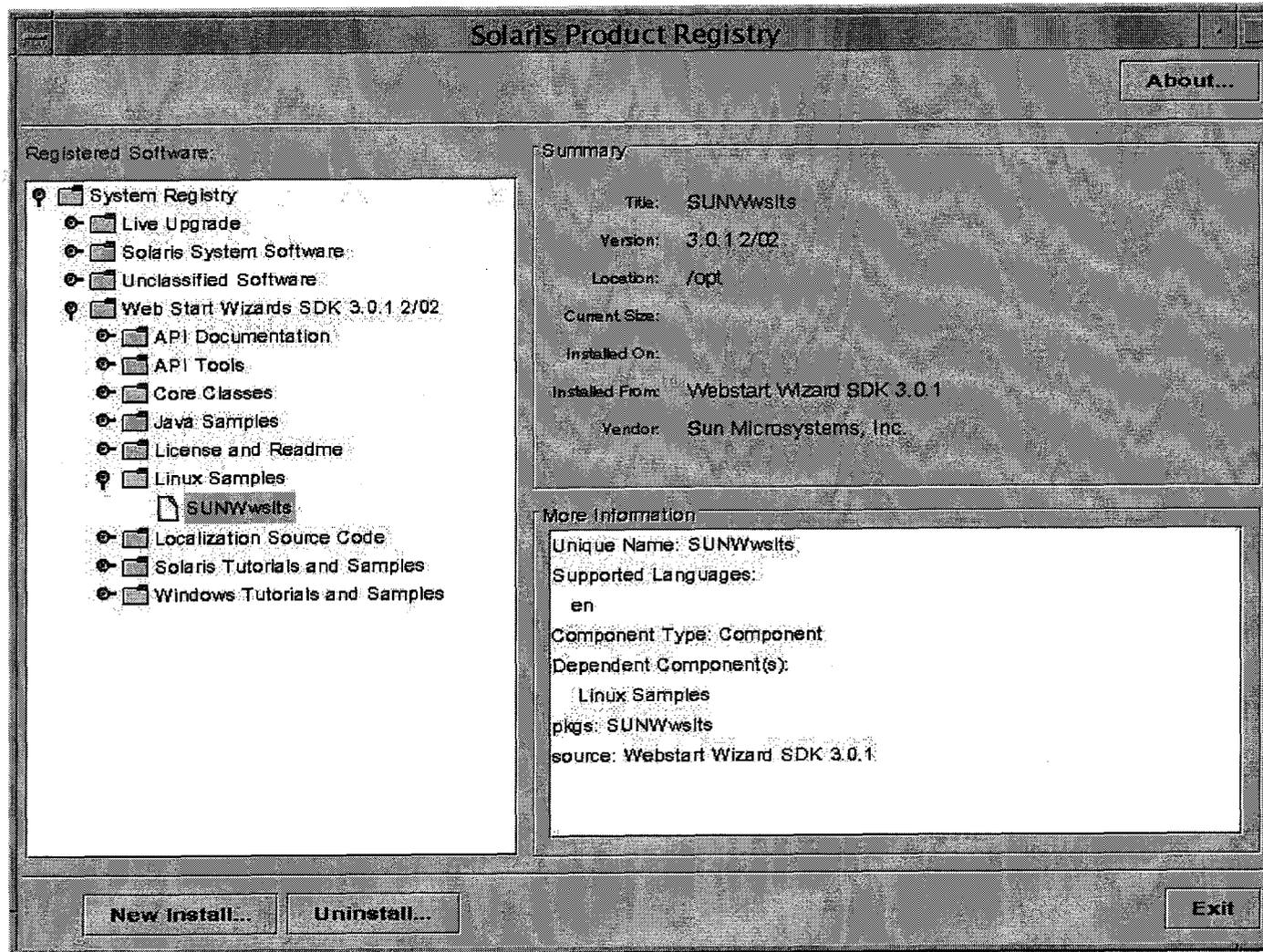
- Windows Registry interface
- Product Installation Registry
  - pure Java implementation
  - preserves the user's view of installed components
  - provides for dependency checking and enforcement
  - creates single point of access for uninstall
  - facilitates smarter installers and uninstallers



# Registry Service



# Registry Service

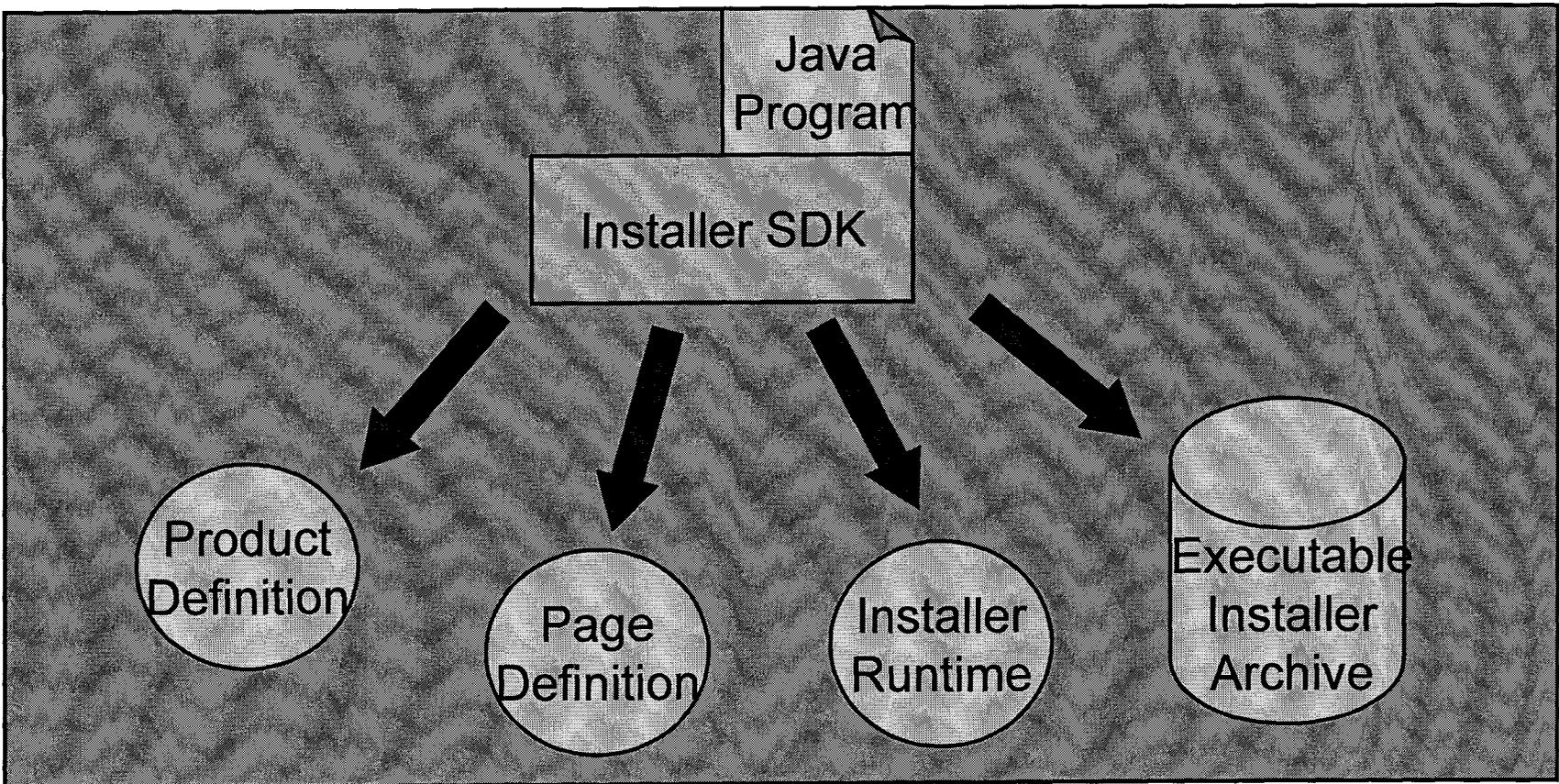


# Archive Service

- Provides access to all classes and files in the archive
- Allows us to support multiple formats:
  - jar
  - zip
  - other proprietary formats



# Building Installers



# Demonstration of GUI Builder

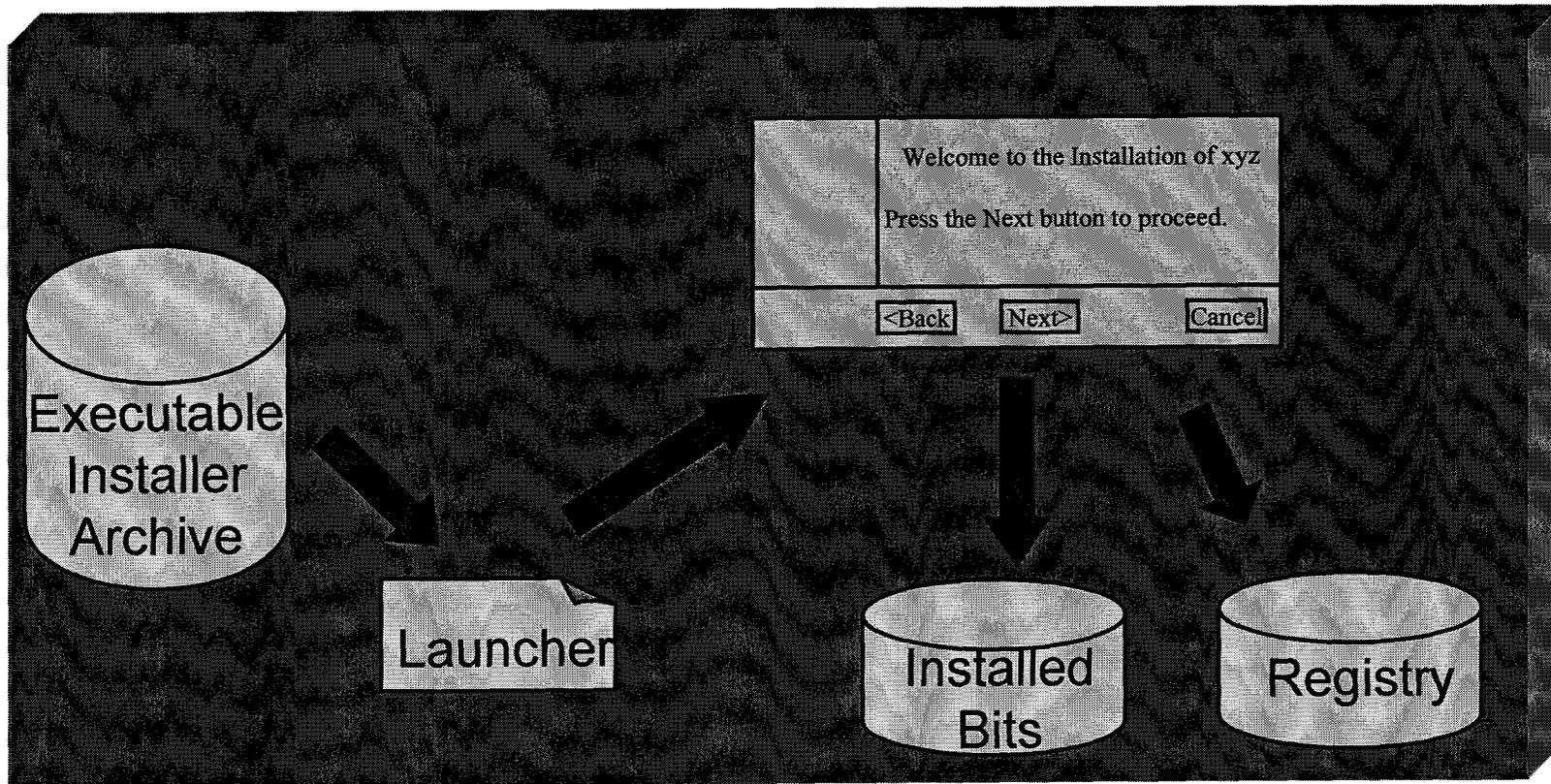
- Demonstration of GUI Builder

# Results of Builder Execution

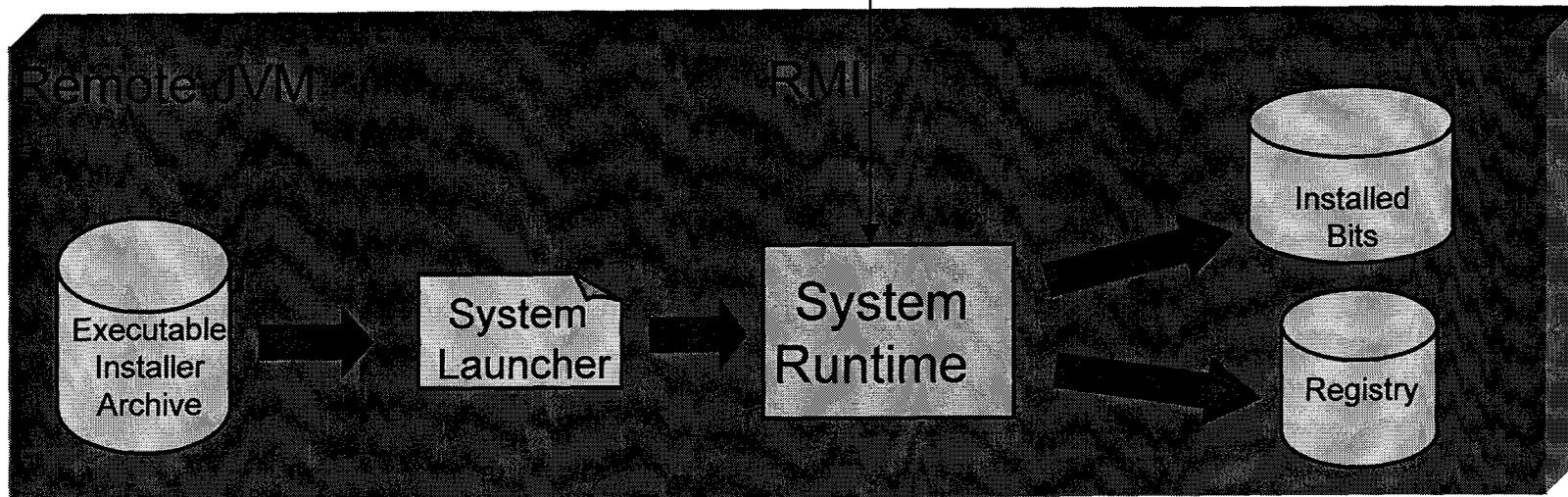
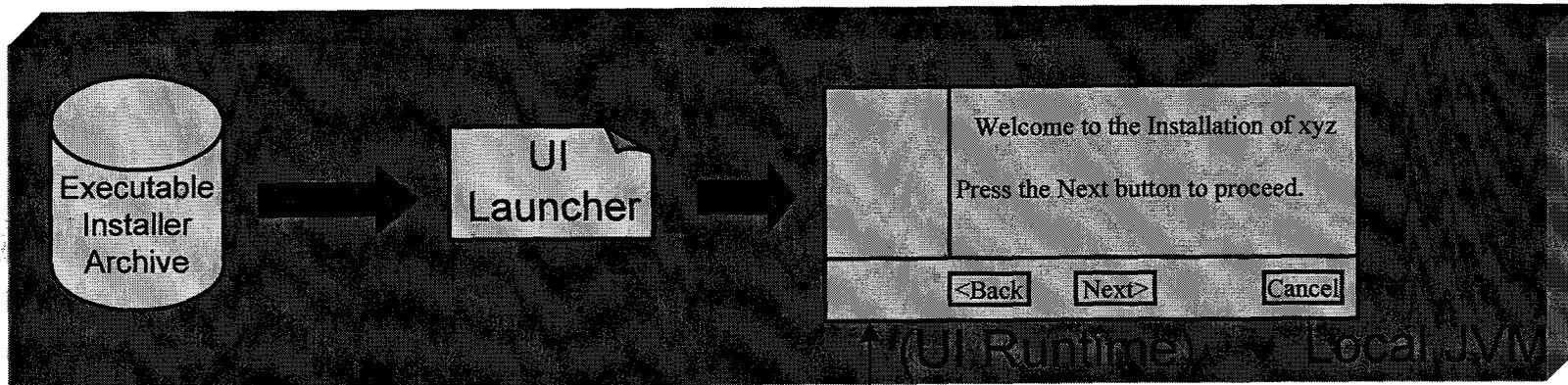
- Executable installer archive
  - can be run standalone
  - can be run over the network
- Archive contains everything:
  - the launcher
  - the installed bits
  - the product definition
  - all required runtime classes



# Standalone Archive Execution



# Remote Archive Execution



# How to Get Involved

- Join the JCP
- Download the sample binary material
- Provide feedback directly to JSR 38 at:  
[comments@jsr38.jpl.nasa.gov](mailto:comments@jsr38.jpl.nasa.gov)



# The Java Community Process

- The JCP is dependent on the Java community for support
- Information on JCP membership:  
<http://java.sun.com/aboutJava/communityprocess>
- Draft specification available for comment by JCP members
- Final specification available for comment by general public



# Downloads

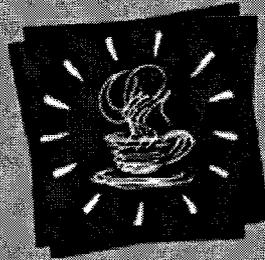
- For sample binary material:
  - <http://jsr38.jpl.nasa.gov>
- To get the Web Start Wizards 3.0 SDK:
  - <http://www.sun.com/solaris/webstart>



# Summary

- Architecture provides open, extensible installation solution
- Addresses problems:
  - cross-platform application deployment
  - inter-application dependencies and conflict resolution
- Will provide flexibility to address custom install problems
- The JCP is the means to participate





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# Q&A



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