



VAOSoft: easy app installation & maintenance

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Motivation

- Driven by needs of the emerging VAO testing environment
 - Automated and continuous (using Hudson/Jenkins)
 - Want testing environment to reflect the user environment
 - End user has similar needs: automatic
 - Click a button to install
- Requirements: see <http://dev.usvao.org/vao/wiki/BuildSystemDesign>
- Software distribution mechanism that is flexible
 - Handles all software dependencies in an efficient way
 - Cross-platform: Linux, Macs, Windows
 - Cross-language/Build mechanism:
 - Java (maven and ant)
 - GNU make tools (configure-make-install)
 - Python (distribtools, easy_install)
 - Can build on/utilize existing build or distribution mechanism where supported
 - Can install in user space



VAOSoft for end users

- VAO product release practices
 - Users can download and install products in ways typical of open source products
 - Always: tar-balls that can build from source using common build mechanisms
 - configure/make, ant, maven, setup.py, easy_install.py
 - Binary distributions where appropriate/practical
 - Jar files
 - Binary (statically-linked) tar-balls
 - rpm/deb files
 - User can take responsibility for pre-installing dependencies
 - README: “You need the following prerequisites...”
 - We provide structured descriptions of products that allow for automated deployment
- VAOSoft: “one-click” installation of applications
 - Installs apps/libraries into a unified software “stack” (VAO_HOME)
 - Can support multiple versions of products simultaneously
 - Can remove products



VAOSoft technical components

- Repository
 - Simple web-accessible directory structure containing products
 - Can contain different forms of products
 - Jar files, war files, tar-balls, zip files, RPMs, etc.
 - Well-defined structure
- Leverages existing tools
 - **Apache Ivy**: mechanism for defining and retrieving software dependencies
 - **Apache Ant**: for expressing generic recipes for retrieving, installing products
 - Wrap around native build/installation tools
- Custom User Tools
 - User (one-click) installs VAOSoft to establish software stack
 - Provides tools for installing, removing other products into user space
 - Has some capacity to detect apps/tools installed outside of VAOSoft