XNAT Inside the Box

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Audience: Useful for Site Administrators, Developers.

Goals: Walk through some of the internals of XNAT, including Turbine, Velocity, Display Documents, XFT, XDAT, & Maven

Turbine

- Platform for building and running applications
- MVC Pattern (Model-View-Controller)
- Native support for Velocity
- Provides access to a collection of commonly used APIs in java development
- Routing
  - Turbine Servlet routes to Actions for tasks to be performed
  - Actions route to Screens which build the View
- XNAT Modifications to Turbine
  - To easily pass Items via search parameters
  - To auto-populate items for report pages

Velocity

- Templating Engine
- Java based
- Simple, but powerful

Search Engine

- Internal XSD representation:
  - Allows references to data via XML Path
  - Identifies relationships between elements

Display Documents

- Allow reformatting of data
- Allow derived values in search results
- Support complicated SQL Views which can model just about anything

XFT

- Dynamic Object model (uses XSD representation)
- Manages Item level transactions
  - Storage
  - Retrieval
  - Reformatting (XML, SQL, CSV, HTML, etc)
- Generates database schema and Java files

XDAT

- Introduces a customizable security structure
  - Can build security into XML loading or SQL queries
  - Allows permissions to be associated with users or user groups.
- Builds a navigational structure for registered data types.
- Includes Search Engine

Maven 1.0.2

- Introduced by Turbine 2.3
- Dependency management
  - Problems w/ external dependency availability
- Plugin architecture
- Advanced Ant support

Maven 2

- New development moving to Maven 2
- Encourages coding/design conventions
- Integrated build/testing support
- More versatile dependency management