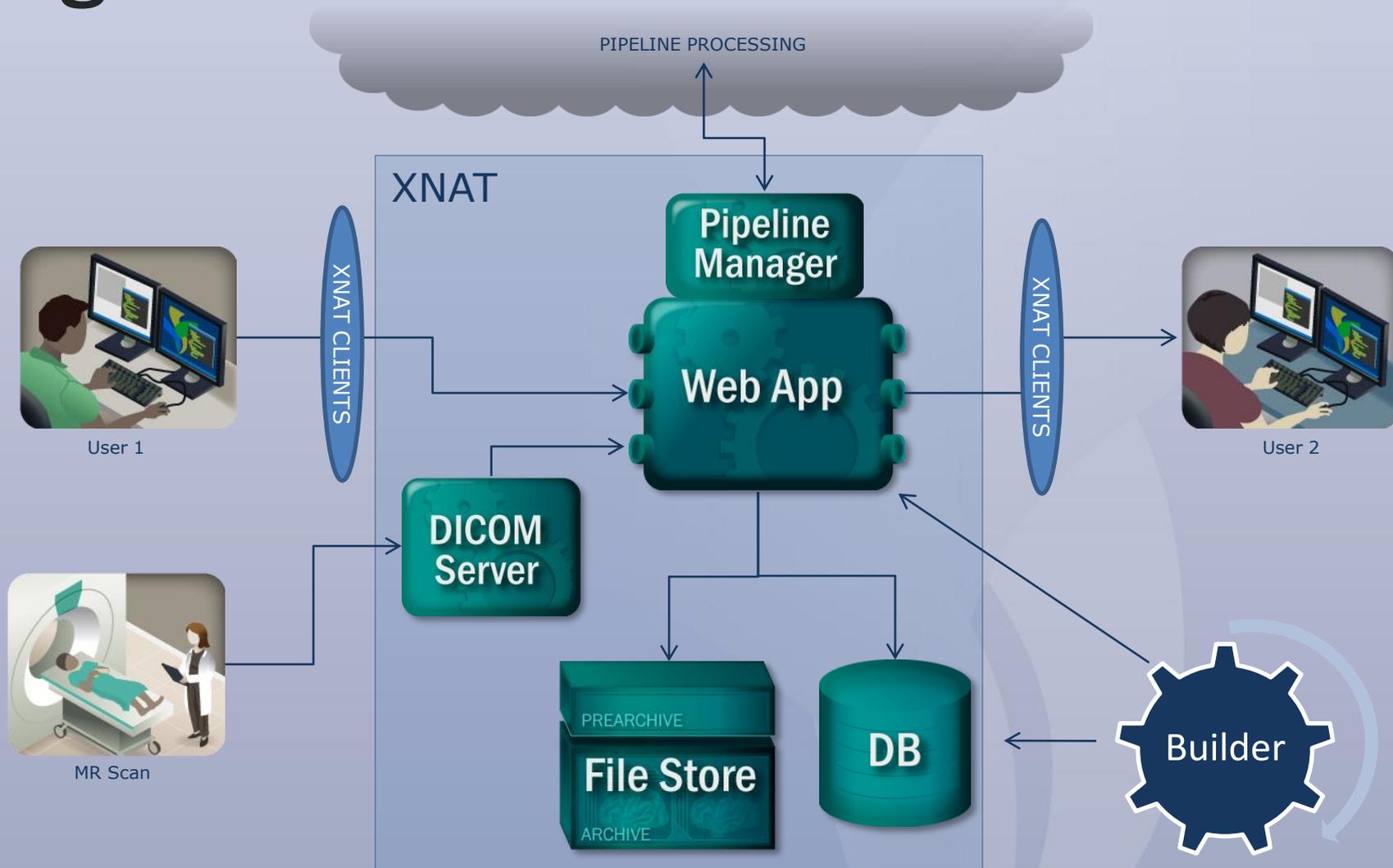


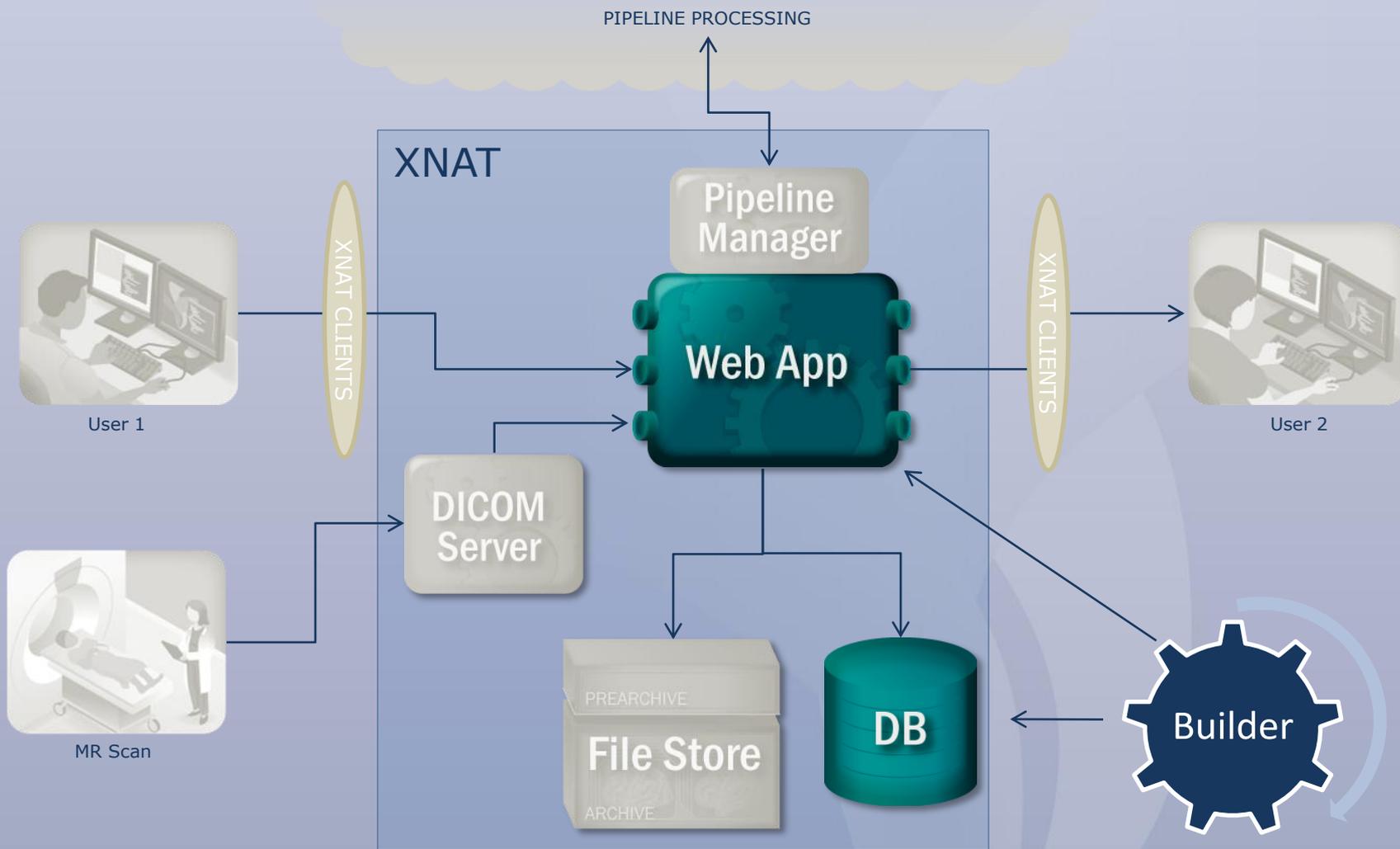
# Installation, Deployment & Updates

Pointers to the latest guides and an explanation of what it all means.

# Big Picture



# In this talk



# Plan

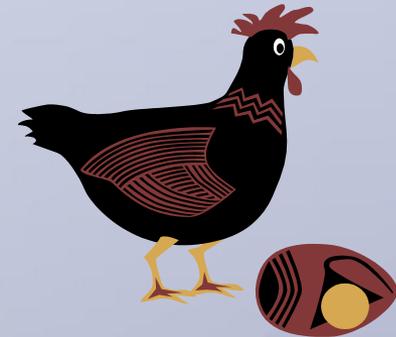
In this talk, we will:

- Identify the key components of XNAT
- Describe what the install/update process does
- Identify the key processes of the install and how they effect/generate resources for your server
- Identify the key guides for a successful install and upgrade

# Introduction

XNAT is really two applications:

- Site-Builder (xdat\_release)
- Site (webapp)



The RELEASE which you clone from Mercurial or download as a zip, is the site builder. The setup and update processes are used to build the SITE.

# Key Components

- Java (1.5+)
- XNAT Release
  - The site builder
- Tomcat
  - The site server
- PostgreSQL (8+)
  - The meta data repository
- Prearchive, Archive, Cache
  - The folders which contain your image data

# Installation: Download

- Step 1: Download and unzip the site builder
  - The initial contents here are the default structure for your future XNAT site.
    - Web architecture framework (Apache Turbine)
    - Customized java site builder (XFT & XDAT)
    - Default schema
    - Customized web pages

# Installation: Download (2)

- Apache Turbine Web Application Framework
  - Turbine is a servlet based framework that allows experienced Java developers to quickly build web applications.
- XFT (eXtensible Formatting Toolkit)
  - Developed by the NRG
  - Used to translate XSD (and associated XML) to different formats (SQL, Java Objects, HTML, etc)
- XDAT (eXtensible Data Archiving Toolkit)
  - Developed by the NRG
  - Extends XFT
  - Adds a web navigation structure, security structure, and search engine.

# Installation: Setup

- bin/setup.sh
  - Builds the project directory
    - Location for site specific customizations
    - Built from the skeleton in the plugin-resources
  - Builds the initial deployment directory
    - Staging area for deployment to Tomcat
    - Combines contents of projects/ and plugin-resources/
  - Reads schema and auto-generates data model
    - Builds SQL for Database creation
    - Builds Java classes, reports and edit pages
    - Builds Display documents for use with the search engine

# The Magic of XFT

- XFT: eXtensible Formatting Toolkit
  - Takes XSD and translates it to SQL, Java, Velocity, HTML, etc
  - Takes XML (which matches XSD) and translates it to SQL, HTML, CSV, etc.
- Generates several critical components:
  - DB Schema (SQL)
  - Java Objects (OM)
  - Velocity templates (Reports and Edit pages)
  - Display Documents

# Installation: StoreXML

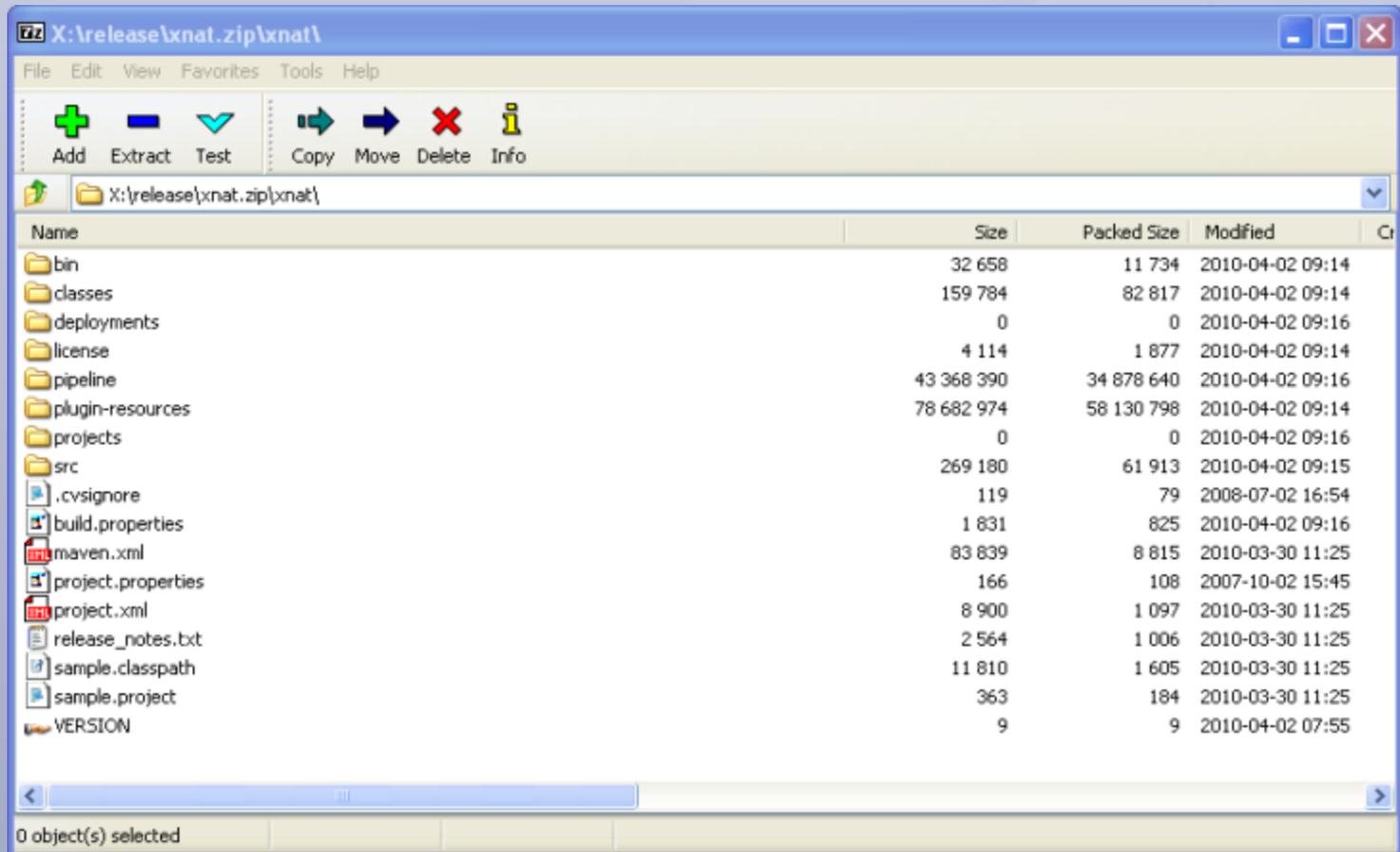
- StoreXML uses XFT to translate the initial security settings into the database. Includes:
  - Users
  - Groups
  - Data-Types

All of these can be customized later via the web interface.

# Installation: Deployment

- The setup (and update) process builds a site. It must be deployed to Tomcat for it to be usable.
  - WAR: if you build a war, the war must be manually copied to your Tomcat installation
  - DEPLOY=true: using the deploy option, XNAT can copy the individual files directly into your webapp.

# XNAT File System



# XNAT File System (2)

- plugin-resources/
  - OWNED BY the XNAT team
  - Changes here will be overwritten in updates.
  - Includes:
    - initial projects content
    - customized reports, actions, custom classes
    - javascript
    - images, css
    - applets

# XNAT File System (3)

- projects/
  - Location for all of your customizations
  - Never overwritten by XNAT
  - Overrides content in plugin-resources
  - Contents:
    - Custom security.xml
    - InstanceSettings.xml
    - SQL, Schema, Javascript, CSS, images
    - templates, base-templates

# XNAT File System (4)

- deployments
  - Merge of plugin-resources and projects directories
  - No modifications should be made here.
  - This is a staging area for deployment to the web application.

# Update

- What does the update do?
  - Re-merges folders in projects and plugin-resources
  - Deploys modifications to the web application
  - Generates update SQL to bring a pre-existing database up to date.

# Update (2)

- What to know about the update SQL.
  - Will not run automatically.
  - Will create missing tables, columns, constraints & views
  - Will modify changed column types if no data is present (otherwise code is commented out).
  - Deletes and recreates all SQL views.

# Upgrading XNAT

- Modifies contents of plugin-resources
- Uses standard update script to:
  - Merge with projects directory
  - Modify database

# Upgrading XNAT (2)

- Bug Fix releases (1.4.x)
  - Fix bugs only (no new features, limited code changes)
- Feature releases (1.x.x)
  - New features
  - Code/structure Refactoring
- Major releases (x.x.x)
  - Milestones

# Guides

- Tested configurations

[http://xnat.wikispaces.com/XNAT\\_tested\\_configuration](http://xnat.wikispaces.com/XNAT_tested_configuration)

- Step-by-step walkthroughs

- Installation Guide

<http://xnat.wikispaces.com/XNAT+Installation+Guide>

- Update Guide

<http://xnat.wikispaces.com/How+to+Upgrade+XNAT>

# Questions

- ???