

XNAT Workshop 2012

Project Configuration

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Project Configuration: Plan

- Things to do:
 - Define a **Site & Project Structure**
 - Configure **Custom Variables**
 - Setup **DICOM Modifications** (Anonymization)
 - Configure **Visits & Protocols**
 - Setup **Scan Validation**

Project Configuration: Structure

- How XNAT organizes things...
 - Data organized by projects
 - Data can be shared from one project to another
 - Data is always owned by one project
 - Sharing/Ownership at multiple hierarchical levels
 - Subjects, Visits, Experiments, Experiment Assessments
 - Used to manage user access to data

Project Configuration: Structure

- Some usage patterns:
 - One project per study (standard)
 - My big fat project
 - Umbrella projects
 - Subject pools
 - Site-based projects
 - Facade projects
 - Failed-bucket projects

Project Configuration: Structure

- Standard
 - One project per research study
 - Often one per grant
 - Data sandboxed by the study it is a part of
 - Keeps data nicely organized
 - Easy to manage permissions
- One big fat project
 - All data goes into one project
 - Difficult to manage permissions

Project Configuration: Structure

- Umbrella project
 - One global project with several sub-projects
 - All data is created and owned by sub-projects
 - Shared into global project
 - Sub-project staff manages the data
 - Project management can see all of the data
 - Convenient for separating modification permissions, and reading permissions
 - Not natively managed by XNAT

Project Configuration: Structure

- Subject pool
 - Subjects:
 - Owned by a single project
 - Shared into a sub-project
 - Experiments:
 - Owned by the sub-projects
 - Common when subjects participate in multiple studies.
 - Sub-projects can see their subject data, but not other peoples
 - You can only see all of their data, if you are on all the projects

Project Configuration: Structure

- Facade projects
 - Data are owned by one or more projects
 - Sub-set of data is shared into another project
 - Targeted users access only the shared project
- Makes data from multiple projects look like its from one project
- Allows for users to see only a sub-set of data
- Targeted sharing of specific data-sets

Project Configuration: Structure

- Failed-bucket projects
 - Some projects only want to store GOOD data
 - May also need to preserve BAD data
 - Don't want them intermingled
 - BAD data is moved into a BAD project
 - GOOD data is left in the primary project
- Preserves access to all data, but hides bad data

Project Configuration: Structure

- Lots of different ways you can use projects and sharing...
- But... for the BOGUS project... we want...
 - Site projects
 - Umbrella project
 - Failed-bucket projects
- Data owned by individual sites, but shared into a parent project
- Bad data moved to failed data projects

Project Configuration: Structure

- Lets set it up...
 - Umbrella project:
 - Project ID/Abbreviation : **BOGUS**
 - Management staff are members of this project
 - Site 1 project: Oceanic University, Atlantis
 - Project ID/Abbreviation: **BOGUS_OUA**
 - Site 2 project: University College, Valhalla
 - Project ID/Abbreviation: **BOGUS_UCV**
 - Site 3 project: Gotham State University
 - Project ID/Abbreviation: **BOGUS_GSU**

Project Configuration: Structure

- Setup the projects
- Add the users to right projects
- Some users may be members of more than one project
- **COMPLETE TASKS #1 & #2**

Project Configuration: Structure

- Manually share data or automate sharing of data
 - Manual: done using the Sharing tab on data reports
 - Auto: done using scripting
- Automated scripting:
 - Run by cron job every night
 - Example here:
 - https://bitbucket.org/nrg/cnda_scripts
 - /sharing/XNATBulkShare.sh
- **COMPLETE TASK #3**

Project Configuration

Custom Variables

Project Configuration: Variables

- Numerous ways to add custom fields
 - Schema modifications
 - Rick will discuss this later
 - More permanent, standardized elements
 - Custom variables
 - Easier to configure
 - Great for adding a few fields to existing data-types

Project Configuration: Variables

- Configurable through the web application
- Use to define additional fields for use in your project
- Simple support:
 - String, Integer, Float, Boolean
 - More options if you configure it on the back end
 - Defined in project xml
 - Enumerations
 - Can handle dates as well (1.6)

Project Configuration: Variables

- Lets add a custom variable...
- Subject -> blood_type (String)
- **COMPLETE TASK #4**

XNAT Workshop 2012

DICOM Modification (Anonymization)

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DICOM Modification

- Why
 - PHI is the enemy!
 - Standardize DICOM header values
- Where
 - When files are stored, or moved
- How
 - NRG developed DicomEdit
 - Covered in Kevin's talk tomorrow afternoon

Deidentification

- The problems of PHI
 - You most likely don't want it
 - Uploaders will unknowingly upload it
- What can you do?
 - Setup a site-wide anonymization script
 - Setup project specific anonymization scripts

DICOM Modification

- XNAT 1.5 applied anonymization when data uploaded via the Upload Applet
- As of XNAT 1.6, anonymization is applied to:
 - Upload Applet
 - Compressed (zip) uploads
 - Gradual DICOM Imports (C-STORE)

DICOM Modification

- Site wide vs project specific
- What is it used for?
 - Site-wide script
 - General anonymization
 - Project-specific script
 - Specific anonymization, value standardization

DICOM Modification

- Site-wide vs Project-specific
- When is it applied?
 - Site-wide script
 - Applied when data is received
 - Project-specific script
 - Applied when data is archived, moved, renamed

DICOM Modification

- What can you do with it?
 - Clear specific headers
 - Change values in specified headers
 - Clear private tags
 - Set values based on inputs (project, subject, session, visit)

DICOM Modification

- A few things to note...
 - Old versions of anon scripts don't die... they just fade away (as in, there is an audit trail)
 - The DICOM header for deidentification will be updated to show that the anon script was run
 - (0012,0064)- Deidentification Method Code Sequence

DICOM Modification

- Lets set one up...
 - Download example
 - wget
`ftp://ftp.nrg.wustl.edu/pub/xnat/workshop/dicom.das`
 - Add it to your project
 - Use the Manage tab on the project report page
- **COMPLETE TASK #5**

Visits, Protocols & Validation

- Visits & Protocols - Jordan
- Protocol Validation - Mohana