How to change the model and what that breaks

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Overview

- Designing changes
- Prepare for data model change
- Publishing interim data model changes
- Publishing a full data model release
- Changes to data model

Bio-Formats
- Building schema changes - 1 - code generation
- Building schema changes - 2 - breaking code
- Changes to transforms
- Building schema changes - 3 - the rest

OMERO

Documentation
Designing changes

- Ideas -> Diagrams
- Publish discussion document, review and repeat until everyone is happy

- Input from Omero database people vital at this stage as some things that make sense in the schema & tiff will be performance kills on the database.
Prepare for data model change

- All work takes place in a breaking build!
- Versioning the data model
  - See: https://www.openmicroscopy.org/site/support/ome-model/schemas/index.html
- Schema namespace changes
- Update build value ant and maven
- Move to new -dev-#+1 then re-instate old -dev-#
- Commit to git as Part1 and Part2
Publishing interim data model changes

- *For tests to pass the schemas must be live online*

- Force push to special website branch on team.git
  - team repo - ssh://git.openmicroscopy.org/home/git/team.git

- Published using WEBSITE-sync job
Publishing a full data model release

- Schema namespace changes
- Update build value ant and maven
- Move to new 20xx-xx then remove old -dev-#
- Commit to git
- Force push to special website branch on team.git
  - team repo - ssh://git.openmicroscopy.org/home/git/team.git
- Published using WEBSITE-sync job
- Needs done before final tagging as cannot test until live
Changes to data model

- Change the schema file
- Create a sample file that exhibits the new change

- *Show the sample file around for feedback, it has been really common to get a negative reaction at this point as some impact of a decision made using diagrams is realized*

- *I used Oxygen as IDE for this work, we have a 1 year academic maintance licence, remember to keep this renewed as only $25*
Building schema changes - 1

- All work takes place in a breaking build!

- Code generation
  - xsd-fu python changes
  - genshi templates
    - model classes, enum classes and handlers, MetadataRetrieve, MetadataStore, and all metadata derivatives

- ant build (also cmake version)
  - ant clean compile-ome-xml
Building schema changes - 2

- *All work takes place in a breaking build!*

- Update existing Java
  - Working through updating code in sequence, including SchemaResolver and reader file upgrade code

- ant build (also cmake version)
  - ant specification
  - ant formats-api
  - ant formats-bsd
  - ant formats-gpl
Changes to transforms

- All work takes place in a breaking build!
- Add new upgrade and downgrade transform
- Update the catalog file so Insight knows about them

- I test in Oxygen IDE using the sample files *-downgrade.ome.xml and *-upgrade.ome.xml files having added new test cases to these. Running the transforms on the command line is also possible. Oxygen lets you debug and can test using a couple of libraries.
Building schema changes - 3

- *All work takes place in a breaking build!*

- Update files that will not break until used
  - FakeReader, MetadataConverter, and tests

- ant build (also cmake version)
  - ant clean jars test

- maven build
  - mvn clean; mvn
  - *same as ant but code changes should already be made*
OMERO – minimum work for PR

- All work takes place in a breaking build!
- Full clean builds required to be sure
- Checkout your breaking bio-formats branch into omero
- Updating the mapping files
- New since Units, update ome-units repo
  - templates and conversions.py
  - ome-units repo - https://github.com/joshmoore/ome-units
- Change database and add to the upgrade script
- Code changes necessary to compile and pass tests
Documentation

- New Changes for 20xx-xx Schema section
- Omni-graffle diagrams
  - png and svg (or is it pdf?) versions
- Generated Documentation
  - Made with oxygen see new instruction on internal
  - https://github.com/openmicroscopy/ome-internal/pull/205
- Sample files
  - Upgrade all the existing *.ome files
  - Add new file for new features
Open Microscopy Environment

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