2.0

Original approach was to upgrade one version of play at a time and keep all functionality. This turned out incredible difficult given all the interdependencies between libraries and scala version. See old branch: https://opensource.ncsa.illinois.edu/bitbucket/projects/CATS/repos/clowder/compare/commits?sourceBranch=refs%2Fheads%2F2.0&targetBranch=refs%2Fheads%2Fdevelop.

Currently working on this: Luigi Marini Rob Kooper Maxwell Burnette Todd Nicholson

New approach is as follows:

- [x] Remove all unused and legacy code. **This will be 2.0.**
  - XML RDF export
  - Rabbitmq monitoring using manager API (Maxwell Burnette started on this)
  - Geostreams API (Todd Nicholson will do this) - branch https://opensource.ncsa.illinois.edu/bitbucket/projects/CATS/repos/clowder/compare/commits?sourceBranch=refs%2Fheads%2Frefactor%2F2.0-remove-geostreams
  - Deprecated endpoints (Maxwell working on this)
  - Every plugin should become a Guice Trait + Implementation
    - For services that are not implemented, provide an no-op implementation
    - Enabled/disabled, is it in the config? Is it a common trait and the ability to provide implementation class in config file?
  - ??? (Add by end of this week Nov. 1st)
- [x] Elasticsearch upgrade
  - Pull request exists to upgrate 2.3.5 to 7.5
- [ ] Modify code to be compatible with newer versions of Playframework. ~~**4.0+**~~
  - Should jump straight to 2.7 or 2.6. We need to figure out which one.
    - **Update to Play 2.8, Update Scala to 2.12, keep Casbah because now it supports 2.12**
      - **One branch we all work on to do this that will be broken for a while. We can make PRs but we can't run the code in progress.**
      - **SEE BELOW FOR DETAILS**
  - Migrate authentication / authorization:
    - https://github.com/mohiva/play-silhouette
- [ ] New MongoDB implementation. ~~**This will be 3.0+.**~~
  - Replace Salat and Cashbah with Java Mongo Driver and keep the rest as is
    - Mongo drivers
      - Looks like official Scala driver is being kept up to date and is based on the latest Java Mongo Async Driver
        - https://github.com/mongodb/mongo-scala-driver
          - requires scalaVersions =("2.11.12", "2.12.8", "2.13.0")
        - Clowder - running Play 2.2.6 on Scala 2.10
          - Play 2.3 and 2.4 supported both Scala 2.10 and 2.11.
          - Play 2.5 has dropped support for Scala 2.10 and now only supports Scala 2.11.
          - 2.3 is first version of Play to support Scala 2.11
          - **Play 2.8 support Scala 2.12**
        - Casbah
          - compiled for Scala 2.11.8, 2.10.6, **2.12.1**
        - Salat
          - https://github.com/salat/salat
          - Scala 2.10, 2.11 and **2.12**. Based on Casbah 3.1.1
      - ~~http://mongodb.github.io/mongo-java-driver/ (this might be our safest bet)~~
      - ~~http://mongodb.github.io/mongo-java-driver-reactivestreams/~~
      - ~~https://mongodb.github.io/mongo-scala-driver/~~
  - Split services in two layers.
    - Top layer has the common code that calls the other services. For example when removing a dataset also remove files.
    - Bottom layer is traits to do CRUD operations on resources and requires multiple implementations.
- [ ] How do tests factor in? can we start writing them before the refactoring? For example unit tests of services vs play scala tests of controllers actions.
- [ ] Enforce style as part of this process. Using IDE? We should look at what rules and style software to use.
  - http://www.scalastyle.org/
  - Pick our preferred rules

PLUGINS

Here is a list of plugins that, as of 1/6/2020, nobody has created a pull request yet to turn into a service. Can any be deleted or ignored, and who is doing them in what order?

- MailerPlugin (it was not clear if this plugin actually gets used to send email to me - Todd.)
- ~~PolyglotPlugin~~ (pull request created, 27 Jan 20)
- ~~PostgresPlugin~~ (removal added to remove geostreams pull request, 27 Jan 20)
- RDFExporterPlugin
- ~~RDFExportService~~ (implements plugin)
  - Since the RDF endpoints have been removed, can the RDF plugins be removed as well?
  - Pull request created for removing these plugins (note added - 1/15/2020)
- SecureSocialTemplatesPlugin
- ~~SpaceCopyPlugin~~
  - Todd - will replace with value in conf. This plugin is simply enabled or not. (Pull request created)
- ~~SpaceSharingPlugin~~

    - Todd - will replace with value in conf, again, either enabled or not. (Pull request created)
- ~~StagingAreaPlugin~~
    - This plugin worked pretty much the same as SpaceCopy and SpaceSharing, so I replaced it with a value in the application.conf in the same pull request as those 2 plugins. (Todd, 1/7/2020).
- TempFilesPlugin
- ~~ToolManagerPlugin~~
    - Removed by Todd (pull request now open)
- ~~VersusPlugin~~
    - Beginning this week (todd, 22 Jan 2020)

PyClowder

There are several significant changes to PyClowder that have been discussed - would be nice to bundle them into a corresponding release update for 2.0. (essentially pyclowder 3.0)

- Move to a client-based structure entirely with standardized support for both key and user/pass, along with other improvements. Max has a branch from Spring 2019 with many of these implemented: https://opensource.ncsa.illinois.edu/bitbucket/projects/CATS/repos/pyclowder/compare/diff?sourceBranch=refs%2Fheads%2Fclowder-clients-clean&targetRepoId=1013
- Improve support for extractor versioning
    - Include extractor version in attached metadata (perhaps in agent section, also needs Clowder upgrades for this)
    - Allow registration of multiple versions of same extractor and make sure API points to correct version
- Flags for metadata upload functions to increase flexibility
    - overwrite metadata if from same name + version of extractor
    - skip extraction of metadata from same name + extractor exists
    - optional flag to ignore version matching?
- move simple extractor into pyclowder formally so it's easy to import
    - move sample simple extractors somewhere else?

~~Play 2.6 Upgrade~~

- ~~Upgrade Play 2.2.0 to 2.2.6~~
- ~~https://www.playframework.com/documentation/2.5.x/Migration23~~
- ~~https://www.playframework.com/documentation/2.5.x/Migration24~~
    - ~~http://www.silhouette.rocks/ - Secure Social replacement~~
        - ~~example: https://github.com/adrianhurt/play-silhouette-credentials-seed~~
- ~~https://www.playframework.com/documentation/2.5.x/Migration25~~
- ~~https://www.playframework.com/documentation/2.6.x/Migration26~~

~~Sbt migration: http://www.scala-sbt.org/0.13/docs/Migrating-from-sbt-012x.html~~

Play 2.8 Upgrade

- Luigi started a Play 2.6 branch in progress - Will merge this in our current 2.0

Library Update Status Oct. 2020

- Replacing SecureSocial with Play Silhouette (https://github.com/mohiva/play-silhouette-seed/tree/5.0.0)
    - User model is broken
    - Calls to Identity broken
    - Change in Requests (related?) - changed action signatures
        - I believe I fixed imports (Todd N)
    - Useful pages from discussion
        - https://www.silhouette.rocks/docs/environment
            - Create an environment with our own User and Authenticator
        - https://www.silhouette.rocks/docs/endpoints
            - Hopefully we can use their actions primarily.
        - https://www.silhouette.rocks/docs/authenticator (& Authorization, Identity)
            - Use this for custom permission WithProvider... we can do our own permission check on the action
            - SessionAuthenticator to start
        - providers
            - CI Logon authenticator necessary?
            - API key provider
- Mongo Salat
    - Replacing DAO patterns, Luigi started work, Todd bugfixes, might be done.
    - some IDE errors may also exist in master
- Updating common Play imports
    - Configuration if any remaining
    - Iteratee/Enumerator replacements
    - Some stronger typing requirements where we have types inferred
    - Play import changes (same code, different paths mostly