Open Data Kit (ODK) Suite

XLSform, aggregate server, and briefcase

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In collaboration with the WHO VA Reference Group

Goals for this Session

Overview of ODK Tools

XLSForms

ODK Aggregate

ODK Briefcase

Goals for this Session

Goals: understand and use ODK tools

The following material will introduce the **Open Data Kit (ODK)** tools for collecting, storing, and exporting data.

Our goals are to...

- understand the **XLSForms** for creating questionnaires
- query and export data from **ODK Aggregate servers**
- use **ODK Briefcase** to pull data from ODK Aggregate

Overview of ODK Tools

ODK Software Suite

- **XLSform**: format for creating survey questionnaires
- **ODK Collect**: Android app for collecting survey data
  - tablet/phone sends completed forms to ODK Aggregate server (cellular, internet, or offline)
- **ODK Aggregate** server: data repository with query (web interface or ODK Briefcase) and export capabilities
  - Local implementation
  - Virtual Machine
  - Google Apps Engine
- **ODK Briefcase**: computer app (executable or command line interface) for pulling/pushing data from/to ODK Aggregate
- Documentation on Read the Docs
  - Git Hub site (for downloading ODK Briefcase)

XLSForms

XLSForms: Introduction

- Format for creating ODK questionnaires using Microsoft Excel
  - 3 worksheets: survey (questions), choices (response options), settings (specify *form id*)
- ODK Aggregate imports XML files
  - Tools for converting Excel $\rightarrow$ XML
  - XLSForm Online
  - Offline: pyxform
- Examples
  - WHO 2016
  - PHMRC Short
  - PHMRC XML

XLSForms: Survery – question types

- select_one & select_multiple
  - Prespecified response options on a separate Excel worksheet (choices)
- integer, calculate, date, text, decimal
- begin group & end group
  - ODK Briefcase Exports: Group titles are included in the column name (along with question name)

ODK Aggregate

Aggregate: Introduction

- Example server
  - Demo Aggregate server: sandbox
    - XLSForm Online
    - WHO 2016
  - Google App Engine & Swiss TPH (for homework)
  - Mac Mini's ODK Aggregate servers
- Demonstration with Mac Mini:
  - Form ID
  - Export & Queries

ODK Briefcase

Briefcase: Introduction

- Java app with graphical user interface (GUI) for computers
  - Upload & download both form definitions and completed forms (as XML files) to/from ODK Aggregate
  - Exporting VA records as a single comma-separated values (CSV) file
- ODK Briefcase can also be with command line interface (CLI)
  - openVA Pipeline uses CLI to export VA records from ODK Aggregate (as a CSV file)
- Most recent version: v1.12.2
  (new minor version released every few months)
  - requires Java 8 or higher

Briefcase: Usage

- **StartingODK Briefcase GUI**
  - From a terminal:

```
$ java -jar /path/to/ODKBriefcase
```

- When **options** are included in the command, Briefcase will run in CLI mode

```
$ java -jar ODK-Briefcase-v1.12.2.jar \
-plla -url 'https://aggregate.web.adress' \
-u 'odk_openva' -p 'openVA2018' \
-id 'va_who_2016_11_03_v1_4_1'
-e -ed . -sd . -f 'test.csv'
-start '2018/05/01' -oc -em
```

Briefcase: Usage (cont.)

Briefcase CLI **options** for exporting -e

- First set credentials with -**plla** (pulling forms from Aggregate)
  - -**url** web address for Aggregate
  - -**u** username for Aggregate account
  - -**p** password for Aggregate account
- -**e** export
- -**ed** export directory
- -**f** filename for exported CSV file
- -**id** form ID
- -**sd** Storage Directory (Briefcase will create a new folder – *ODK Briefcase Storage* – in the storage directory, where downloaded files are saved)

Briefcase: Usage (cont.)

Briefcase CLI **options** for exporting (optional)

- -**em** exclude media (not downloaded)
- only grab forms submitted between certain dates (format yyyy-MM-dd or yyy/MM/dd)
  - -**start** start date (inclusive)
  - -**end** end date (inclusive)
- -**oc** overwrite CSV file (if exists)
- -**pb** pull (XML files) before export
- -**pf** PEM file for form decryption
- **ssm** split select multiple fields

Briefcase: Mac Mini demo

- Connect to the network: WHO - D4H
- In Virtual Machine, open web browser and download ODK Briefcase
  - https://github.com/opendatakit
  - briefcase -> releases
- In Virtual Machine, open terminal and change to directory with ODK Briefcase

Briefcase: Mac Mini demo (cont.)

- First, download forms

```
$ java -jar ODK-Briefcase-v1.12.2.jar \
-plla -url 'http://10.0.1.254:8080' \
-u 'usersToT' -p 'ColumbusOH!' \
-id 'va_who_2016_11_03_v1_4_1' -sd .
```

Briefcase: Mac Mini demo (cont.)

- Next, download data

```
$ java -jar ODK-Briefcase-v1.12.2.jar \
-plla -url 'http://10.0.1.254:8080' \
-u 'usersToT' -p 'ColumbusOH!' \
-id 'va_who_2016_11_03_v1_4_1' -sd .
-e -ed . -f 'odkbriefcase-download.csv'
```

Homework (1)

ODK Aggregate Server

`https://odk.swisstph.ch/ODKAggregateOpenVa`

1. Use a web browser to connect to the SwissTPH ODK Aggregate server
   - *username:* **odk_openva**, *password:* **openVA2018**
   - List the IDs (which question? meta instanceID?) for all of the forms.
2. Download all of the records for the form: `2016 WHO Verbal Autopsy Form`
3. Use **ODK Briefcase** to download the same form. Compare the two files with the downloaded records (obtained using the website and Briefcase) to confirm they have the same records.
4. Use **ODK Briefcase** to download records from the form: `2016 WHO Verbal Autopsy Form 1.5.1` but only download forms submitted AFTER June 15th of 2018.

Homework (2)

ODK Aggregate Server `https://odkaggtest1.appspot.com`

1. Connect to the ODK Aggregate server on Google App Engine (website link missing?)

- *username:* **usersToT**, *password:* **ColumbusOH!**
- List all of the form IDs (which question is this referring to?)

1. Use ODK Briefcase to download all of the records from all of the forms and make sure that:

- VA records from each form are located in separate directories
- the CSV file containing the VA (i.e., the Briefcase export file) has the form ID in the file name

Homework (3)

1. In Virtual Box, set up the ODK Aggregate server Virtual Machine (which can be obtained from the website (i suggest to provide the link) with the ODK documentation).
2. Upload the 2016 WHO VA Questionnaire form (specify which version).
3. Upload the VA records (obtained from Mac Mini) to your virtual machine using ODK Briefcase.