

Part 8 - Adapting the Sample Management System to Blaise 5 for the Health and Retirement Study (2018)

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1. Brief Introduction to SurveyTrak

The University of Michigan Survey Research Center (SRC) uses *SurveyTrak*, one of its sample management systems, to conduct Blaise 5 surveys in the field. SurveyTrak runs on Windows laptops and the surveys run as thick client/standalone. The Blaise Control Centre is not installed on the laptops; only Dep.exe, Manipula.exe, and a few other files are on the laptops.

The Blaise BDBX is created on the fly in the field for each case using an ASCII to Blaise Manipula script. The BDBX and the corresponding AuditTrailData database only ever contain one case. When the survey is exited, SurveyTrak zips up the BDBX and the AuditTrailData.db and inserts them into the SurveyTrak database for later processing. Then the files for that one case are deleted from the laptop. The next case is treated as a fresh, new case.

Interviewers use a feature of SurveyTrak called “send/receive” to upload survey data and to download data model files.

2. HRS and SurveyTrak

The Health and Retirement Study was the first study to use Blaise 5 with SurveyTrak. This turned out to be fortunate for the implementation of Blaise 5 into SurveyTrak. HRS is a complex, lengthy survey. If SRC had started with a shorter, less complex survey, the SurveyTrak development decisions would not have been ideal for the long term.

2.1 Data Model Size

The HRS 2016 data model, written in Blaise 4.8, is 24MB in size. The BPKG file alone for the HRS 2018 Blaise 5 data model is 896MB. The dramatic increase in size of the HRS data model causes three issues:

1. Time to download BPKG: It takes much longer for interviewers to download the HRS data model via SurveyTrak send/receive.
2. SurveyTrak limitation: SurveyTrak send/receive itself has file size limitations. The workaround for this is using a file splitting utility to split the BPKG into chunks (currently 27). (The chunks are reassembled on the laptops after send/receive.)
3. Time to unzip BPKG: The first time SurveyTrak launches a case for a particular survey, SurveyTrak unzips the BPKG. This takes several minutes.

2.2 Survey Launch Time

During initial development to integrate Blaise 5 into SurveyTrak, it took up to eight minutes to launch a survey. This time has been significantly reduced by using the workarounds outlined below.

Using Manipula to create the BDBX on the fly creates an incompatible BDIX file. To get past this problem SRC was instructed to use the following DEP command line parameter:

-OverWriteDataFile:IncompatibleData

This workaround caused another problem. When this command line parameter is used, a backup of the BMIX file is created. The HRS 2018 BMIX file is 1.47GB in size and the backing up of this large file increased launch time even more. The workaround to the workaround is to copy off the original BDIX file and use it to replace the BDIX file created by Manipula.

The 3 databases *RuntimeConfiguration.db*, *RuntimeSessionData2.db*, and *ServerManagerDatabase.db*: When launching a survey from SurveyTrak the first time, it takes a long time for these 3 databases to create themselves. The initial workaround was to, instead of deleting the databases between cases, keep those databases in place between cases.

However, later in development, this had to change. When SurveyTrak was being programmed to write data to Blaise, it was discovered that in order to write to the BDBX, the *RuntimeSessionData2.db* cannot exist but instead has to be allowed to create itself after the BDBX is updated.

The ultimate solution for decreasing survey launch time was to add 8GB RAM (for a total of 12GB) to the laptops and to replace the spindle drives with solid data drives.

2.3 Other Differences in SurveyTrak Between Blaise 4.8 and Blaise 5.3

It is typical for SRC to release updated versions of a data model during data collection. Each version is stored in a date/time folder as shown below:

C:\BLProj\HRS2018\Storage\2018-04-25,16,10,00
C:\BLProj\HRS2018\Storage\2018-05-10,14,23,00
C:\BLProj\HRS2018\Storage\2018-06-21,16,23,00
C:\BLProj\HRS2018\Storage\2018-08-03,09,35,00

For Blaise 4.8 data models there is also a “Work” directory, e.g., **C:\blproj\HRS2016\Work**. Data models are copied to the work directory and the survey is launched from the Work directory. This Work directory has several advantages:

- The original data model folder stays clean and untouched.
- Easier for Interviewer Help Desk staff to troubleshoot if interviewers call in about survey problems.
- Manipula scripts used to create the BDB point to the Work directory and are created only once no matter how many data models are released during data collection.

With Blaise 5, the BMIX file takes too long to copy, so the survey is launched from the Survey directory. This requires that the Blaise programmer create Manipula scripts for each data model.

Also with Blaise 4.8, since the data model are so small, SurveyTrak is able to zip up all the data model files (BDB, BMI, etc.). This is very convenient if later troubleshooting is required.