



Introduction

Youth with a Mission (YWAM) is an Australian-based non-profit organization that sends medical ships to help the people of Papua New Guinea (PNG), one of the hardest to reach places for medical care in the world. In PNG, 84% of the population resides in remote, rural areas surrounded by complex river systems and vast terrain. The region contains a high population of youth; 43% are under the age of 15 and one in four children will not live to celebrate their 40th birthday. YWAM medical ship volunteers are able to help save lives every day by delivering primary health care, ophthalmology, optometry, and dental care to the inhabitants of PNG.

One of the YWAM medical ship volunteers happened to be the son of FileMaker Developer, Marty Thomasson. With Marty's wife being a physician, she decided to go along with their son to help the people of PNG and Marty joined in as well, for a complete family trip. While being on the ship, Marty observed work flows were being managed by paper and immediately noticed the impact that the FileMaker platform could make on improving efficiency. He got to work building a sleek custom mobile app to use with FileMaker Go on an iPad for mobility in PNG villages and on the YWAM medical ship.

Development Challenge



Marty's son helping with dental intake

The YWAM ships navigate complex systems of water to reach PNG villages where the medical care can be given. There is a central FileMaker Server located on the ship, and a cloud server located in Australia for the YWAM home office usage.

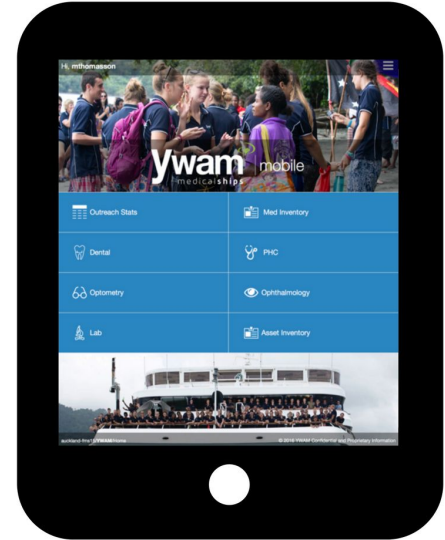


PNG is remotely located off of the coast of Australia

Laptops were set up in the village and Marty was able to build an app for FileMaker Pro (ran on the laptop) and FileMaker Go (ran on iPads). Marty's YWAM mobile app became a vital part of the operation. The app was optimized for the iPad with modules for outreach stats, medical inventory, dental care, primary health care, optometry, ophthalmology, lab data, and asset inventory.

The YWAM Medical Ships Mobile app allows team members to:

- Collect lab data
- Record patient encounters
- Add specimen data
- Add and view media files
(photos/movies)
- Manage medical inventory



The app revolutionized the way they worked, but there was still the challenge of connectivity between iPads and the ship's server as well as the cloud server back at YWAM's home office in Australia for government reporting statistics. There is no full-time access to a network connection when in the villages and access is not consistently guaranteed while on the ship. With little to no access to the FileMaker Server while working with the app in the field, there needed to be sync functionality in place.

Successful Solution

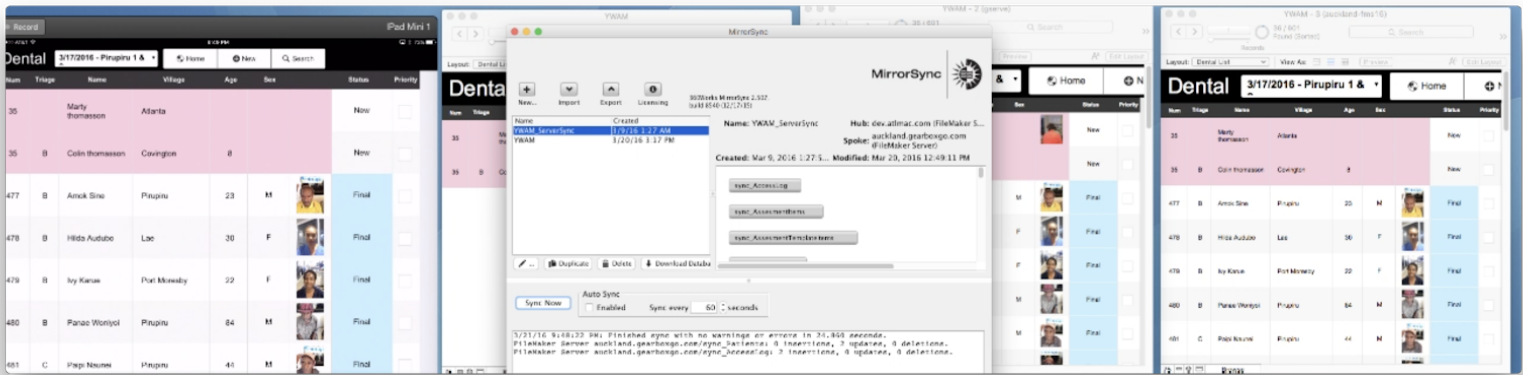
Team members in the field could not access records from the hosted server files and the home office could not retrieve the most up-to-date data with the team not having full-time network connection. Marty needed a development solution to collect data offline and sync data when network connection was re-established. Over the past 10 years Marty has been using 360Works plugins and add-ons in his FileMaker development, so he selected 360Works MirrorSync as the sync solution for his custom app. He knew that it would provide a fast, easy experience and be able to handle the synchronization of photos and videos as well as other requests requiring customization. He was immediately able to improve the mobile app by implementing a strategic sync flow where MirrorSync helped to connect users in the field to the ship and home office.

YWAM Sync Flow



Here are few examples of how Marty was able to solve work flow problems with MirrorSync:

- **Medical Supplies**: The medical supplies can be immediately updated with the help of MirrorSync. Using the barcode XYZ from Geist Interactive, amounts of medical supplies in stock and expiration dates can be scanned and collected. If particular medical supplies have expired, MirrorSync allows the app to synchronize with the FileMaker Server, which will then send a message to the team in Australia to send out fresh supplies. Marty configured a FileMaker Server to FileMaker Server configuration for MirrorSync, to create a bidirectional sync of data between the ship's server and the cloud server in Australia.
- **Patient Interactions**: All medical interactions are recorded in the app and MirrorSync synchronizes the data back to the hub (central server on the ship). Having this immediate data allows the team on the ship to know when a patient arrives, if an emergency procedure will be required, and if the patient has a critical ailment.
- **Government Reporting**: With MirrorSync, government reporting is now automatically synchronized from the FileMaker Server to the home office in Australia. This functionality allows ease of communication in reporting information such as the quantity and type of diseases being treated in PNG for government records.



An example of the 4 different areas where Marty's mobile app is being accessed and MirrorSync is syncing data: 1. In the village - iPads 2. In the village - laptop 3. On the ship 4. YWAM Cloud Server

MirrorSync is bidirectional (can sync in both directions) and works on a hub-and-spoke architecture model. It works with multiple configuration types, syncing any combination of FileMaker Server, FileMaker Pro, FileMaker Go, and any SQL database. All configurations will have one database designated as the 'hub', and one or more other databases are called the 'spokes.' The hub database is where the data starts when configuring MirrorSync, and the spoke database(s) are set up to match the hub during the initial sync. In Marty's use case, the ship server is the centralized hub and the cloud server is the spoke in his FileMaker Server to FileMaker Server sync configuration. At time of his initial sync, there is full data copy in both the hub and the spoke servers, where the files are identical and the sync configuration is bidirectional for all tables.

Conclusion

Overall, Marty has been able improve the functionality of his FileMaker app by using MirrorSync. Marty stated, "Our pro-bono YWAM project continues and Mirrorsync is still a key component." MirrorSync plays an important role in the efficiency of the YWAM medical app by keeping the database in sync over bodies of water, inside remote villages, and into the city of Sydney.



You can download 360Works MirrorSync for free

at: mirrorsync.com

Questions? Email us at plugins@360works.com or

give us a call at 770-234-9293