Kiosk: Archaeological Field Recording and Management

Answers to questions guide

How to use this document:

Not quite a FAQ, and not quite a user's manual, this document is somewhere in between. The first section is a brief overview of what Kiosk is. The second is devoted to questions of administration, everything from getting ready for a season to getting ready for a day's excavation (from the perspective of the recording software only, of course). The second section is how to perform basic functions while recording.

There is a clickable table of contents when this is viewed as a google doc. But you may find it easier to search words by using control+F (command+F on a mac). Knowing what to search for requires some basic familiarity with the system, so reading through the questions in the table of contents is not a bad idea. A sense of what the system is and some of its basic functions can most easily be gained by watching the video tutorials found here.

Kiosk Basics

Kiosk consists of two parts. One is the recording software. Accessed through Filemaker, this is the component that your team will use to enter data. For most people on an archaeological team using Kiosk this is the part they will know and it will behave for them very much like a digital version of context recording on paper. A difference is that images - photos taken with the iPad's camera or drawings made on the iPad - can be immediately linked to all types of records. Each project has a customized piece of recording software with individualized things like valuelists, numbering conventions, and ceramics modules. At the start of each day every iPad has the same database to open in the recording software. Over the course of the day, as records are added in different trenches or survey units the data on the iPads diverges - they are not in communication with one another and not updating in real time. But at the end of the day, every iPad will bring its data back and everyone's data will be brought together, enabling everyone to start the next day again with similar databases that now include the work that everyone did the previous day.

The second part of Kiosk is the data management component, itself called kiosk. Each project has its own kiosk. Your project's kiosk is accessed through a browser and is where administrative functions take place. These include the daily tasks of preparing clones of the database for each recording device, synchronizing the database once all of the day's devices have brought back fresh data and been uploaded, managing images, checking on daily additions to data, backing up, and more specialized tasks such as restricting which images are accessible on field recording devices and preparing reports. Reports can include things such as PDFs of context sheets for handing over to government representatives at the end of a season, or exports of tables for analysis in GIS.

Entering data is ALWAYS done in a clone of the database that is downloaded, worked in, and then uploaded and synchronized. The central database is inaccessible. It does not matter which device you are working on, or whether your central database is currently housed online or on a local server: you will never be able to input data without downloading a clone, and that data will never be in the central database until you have uploaded the clone, imported it, and synchronized the central database.

Each clone is passed from the central database to a recording device by means of a "dock" - a location created in the hub section of kiosk to manage downloading and uploading. Generally speaking you will have as many recording hubs as you have recording devices. For instance if you are running a large project that is simultaneously excavating, doing pedestrian survey, and managing artifacts at the lab or museum, you might have four iPads for excavation trenches, two for survey units, and a laptop for the registrar working in storage. You will then have seven

docks preparing seven different clones so that each recording person can download and upload their data daily.

The central database and kiosk can live either locally (ideal for the field as the internet is never needed and upload/download speeds are much faster) or on the internet (ideal for when you are not in the field: dispersed members of your project can access and add data, and the software developer can update your software as new features are rolled out). The central database and kiosk CANNOT live in both places simultaneously. Transferring from one to the other is a process that happens before and after each season; this can currently only be done by the Kiosk development team, not by individual projects.

Kiosk itself is open source and free and, at this stage of its development, customization, technical support, and online server space are also offered to all projects for no charge. There are, however, some costs associated with using Kiosk. These include hardware and pieces of software needed to run Kiosk. On the hardware front, only Apple iPads are supported as tablet field recording devices currently, so you will need as many iPads as you have field recorders (plus an extra as backup). Consider battery packs as well, as field conditions sometimes drain iPad batteries quickly. Hardware needed for running the server side of things includes a laptop (which can be one you use for other things, too, but must meet certain technical specifications), a network router, two harddrives, and some cables. Software needed includes Filemaker Pro on the laptop you will use as a server and FilemakerGo on each iPad (the latter is free, the former is really not). If you will draw on the iPads we recommend a vector based drawing app, also not free.

Getting set up to use Kiosk in the field takes some time. First, your custom recording system needs to be configured to support your particular workflow and recording conventions. This happens in a series of conversations with the development team. You will need to test your individualized recording system while your kiosk is housed online. Once your system is configured, the development team will move your central database and kiosk offline and either walk you through configuring your local server or send you a physical setup. Either way, you will have some software (including remote access software that lets the developer troubleshoot for you in the field) to install and a number of settings to configure, both on your server laptop and on your iPads. It will take some time, too, to set your team members up with logins and assign them privileges, and to create docks for each workstation and configure them to connect to kiosk. Most of this needs only to be done once. There is a learning curve, and as documentation of the software is incomplete you should expect some back-and-forth with questions to the development team as you are figuring out what is a powerful but not simple system.

Using Kiosk in the field, once you are used to the workflow, requires very little time. Daily uploads and downloads can be done for an entire team in around 15 minutes (depending on how many images are in your database).

Major components of Kiosk include:

Filemaker Recording

- Context recording: input excavation or pedestrian survey records
- Collected material recording
- Site notes: observations and images not bound to units or contexts
- Registration: keep track of collected materials

Kiosk

- Hub: manage uploads and downloads for recording devices, as well as reports
- File Repository: search images by context, description, etc; upload images from cameras other than the iPad
- Director's View: after synchronization, see which records were added or changed that day to keep track of work and help your team learn good recording
- Administration: easily backup all data

For Directors/Admins

What do I need to buy and install before going into the field?

It depends on your server setup. You can either use a Windows PC as a physical server or setup a virtual machine to be run through a non-windows PC. You should decide this in consultation with the software team at least a few months before going into the field.

The simpler setup is to use a Windows PC as a server.

For this, you will need a single Windows laptop that will act as your server. It can be used for other things (e.g., as a lab computer), but do consider taking one out just for this purpose. The machine must have 8GB RAM, and a Solid State Hard Drive (SSD) is recommended (they are faster and more rugged). While your machine does not need to be the latest model, it does need to be a reasonably powerful machine.

Choose where to store your File Repository

The easiest place to store your File Repository is on the server's internal hard drive. If you prefer this option to using an external hard drive, you must make sure to have enough space on the internal disk, as your File Repository will host all the photographs, files and thumbnails that you create during the process of field recording. We recommend a minimum of 128GB free space for that sole purpose. Don't forget that

your internal hard drive always needs enough free space so that your computer can "breathe." That is, leaving 25% free space is recommended for your main disk on Windows.

All this said, storing your File Repository internally is not the safest option, because your File Repository will be lost if the internal drive crashes. So, if you insist on using it for this purpose, please be meticulous about backing it up regularly.

If you prefer to store your File Repository externally (which is recommended), you will need one additional external harddrive (can be a rugged-proof HD) that will host the File Repository. A minimum of 128GB is recommended, as the drive must store your camera raw files.

Virtual server setup

You will need a laptop to execute the virtual machine, and it must have VirtualBox installed. Since the advantage of this setup is that you can move the virtual machine to a different laptop without downtime (should the first one fail), you should also install VirtualBox on a second machine for emergencies. In this scenario, your server(s) (which can be either Mac or PC) must have 16GB RAM and should not be older than 2018. Generally speaking, the more recent the better – though please note that the most recent Macs running M1 processors won't work for these purposes. A laptop that runs a virtual machine needs to be fast. You will not be able to do much with the computer while the virtual machine is running but you can of course use it for other things while the virtual machine is powered off. If it is a Mac you should avoid using the internet on the computer at all while you are in the field because the Mac's networking can get derailed. On a Mac only use the WiFi Router over Ethernet and don't even switch on the Mac's own WiFi network adapter.

You'll also need:

1 fast 128GB SSD on which the virtual machine is installed.
1 external harddrive (can be a rugged-proof HD) that will host the File Repository. A minimum of 128GB is recommended - it must store your camera raw files. THIS IS NOT YOUR BACKUP DRIVE! It is the regular storage place of your File Repository. An option would be to buy a bigger 256 GB SSD and store both the File Repository and the Vierual machine on it. The File Repository would not be stored within the VM but in a shared folder on the same harddrive (ja, virtual machines are confusing).

The virtual setup in particular must be set up by the project developer at this stage and its operation needs more experience than the operation of a simple PC. It is also not as moveable as the simple setup because there are a few cables dangling around and the connection between SSD and laptop must NEVER be disconnected accidentally while the virtual machine is running. That would be like a sudden power outage for a normal computer - the results are unpredictable.

(An in depth explanation for the virtual server setup can be found here: https://wiki.arch-Kiosk.brown.edu/urapdev/doku.php?id=running_Kiosk_on_a_virtual_machine)

For both server setups

In addition to the drives you need depending on your server setup, buy a huge backup harddrive - it is supposed to backup all your images and stuff. An SSD would be perfect but they are still quite expensive > 128GB. Size matters here, so a rugged-proof normal HD with 512GB or more would be preferable. You may use it as well for other devices or files your team produces as long as it has enough free space.

1 usb device that creates a local network. (Consider taking a spare. These guys are sturdy, but if you lose one your recording is kaputt.) We recommend the tp-link AC750 WiFi Travel Router but have also used the GL iNet 300M Mini Smart Router. The latter is harder to configure.

1 LAN network cables (consider a spare) to connect the router to the server. Make sure your server either has a built-in LAN Port or you will need an additional external LAN to USB device (all Macs need such a thing these days). We have made good experiences with the Anker 3-port usb hub and ethernet port because it can serve as a LAN to USB connector and at the same time power the WiFi Router (note that it could not power a harddrive at the same time, that's too much drainage).

Make sure you have a few USB-B to USB-C adapters if your server machine has only USB-C (as modern MACs and most modern Windows laptops do).

Make sure you have splashtop installed on the server (for a virtual server setup that means the Host computer should have it - don't install it in the virtual machine). Test whether splashtop works before you go to the field because that is the best way to get the developer on site quickly.
Don't download splashtop from somewhere on their site, download it exactly from here: https://sos.splashtop.com

Recording devices

You will use one inputting device per unit at a time. You may also consider devices for the director, ceramicist, etc. Tablets must be iPads (some with small hands find minis easier in the field) for excavation and survey needs. A laptop works for the lab and that can be either a Mac or a PC as Filemaker runs on both operating systems. Having an extra iPad is not a bad idea in case one breaks.

The server and all inputting devices, whether laptops or iPads, need to have the latest version of Filemaker (or Filemaker Go) installed on them. Also make sure you have the latest OS versions installed (Windows Servers need Windows Pro and as of April 2023 we still prefer Windows 10) and the latest Browser. We highly recommend Chrome on iPads.

iPads that will be used for drawing should have a vector drawing program installed on them. TouchDraw is one standard option and this guide assumes you have it.

Power banks to charge the iPads should they run low in the field - if you are in the sun and it's hot your iPad will not hold a charge all day.

Rugged cases for iPads with screen protectors

Suggested: Apple pencils if you will be drawing on the tablets.

Photographic stuff
You will want your usual DSLR and SD cards and SD card reader. If you will be using QR codes for object photography then right now your only avenue is to have an Apple Watch set to synchronize with an iPhone that you will have with you in the field; e-ink screens for object photography are expected in summer 2024.

Can I get tech support while I'm in the field?

YES. If you have the internet. At this stage of the project we are giving individual support to all projects. Consultation can happen by email, but even hands-on troubleshooting can happen remotely. That is why you have installed Splashtop or Team Viewer software on the laptop that will be running your server - the developer can access your server remotely if need be.

You, in return, are helping us shape the product by giving us feedback on features, bugs, workflow support, and requests, and participating in post-season communal reviews.

If you need support, first contact us to set up a time (can be nearly immediately, often) when Lutz can access your machine remotely. In order of preference, contact the support team by:

- Filing a GitHub ticket (this will notify all people capable of supporting you immediately and has the advantage of creating a papertrail). You need a github account set up in advance and be invited to the kiosk repository. Then you can file your ticket under https://github.com/arch-kiosk/arch-kiosk-office/issues.
- E-Mail to Lutz: lutz_klein@brown.edu or Laurel: laurel_bestock@brown.edu

You should find splashtop SOS or RemotePC Or TeamViewer linked prominently on your desktop. If not and you need to install splashtop: don't download it from somewhere on their site, **download it exactly from here: sos.splashtopcom**.

You will need the internet, of course. If you are using a virtual machine setting please make sure that you follow the instructions for "How can I connect to the internet using a Virtual Machine?" first. Once you have established an internet connection all you need to do is start the remote support software and follow the instructions; Lutz will then be in your computer and can check out what you need him to check out.

What apps and settings should I put on the iPads?

It is recommended that you set the same password for every iPad and keep it simple.

You must install Filemaker Go on the iPad. If you intend to use a vector drawing program then install that, too. We recommend TouchDraw (it is not free but not expensive).

You must install Kiosk Bridge, the app that manages files for Kiosk and saves you the headache of using the browser.

Keep apps closed when not in use to minimize battery drainage. Set default sleep timing for something that will help with the battery but not be unbearably annoying while recording - 3 minutes is a happy medium. Heat is bad for iPad batteries.

Update the iOS and apps to the latest version, and then:

Turn off automatic updates for apps. Your Kiosk will not be updated while you are in the field (unless necessary, in which case the developer will be on your computer anyway). The version you are running is optimized for the versions of software (Chrome,

Filemaker Go) that were current when you left for the field, and updating those might mess things up.

- Go to Settings
- App Store
- Make sure "App Updates" is gray not green

Turn off smart punctuation. The smart quotes can interfere with setting quality control rules if you do it from the iPad.

- Settings
- General
- Keyboard
- Text - uncheck "use smart quotes and dashes"

Turn off emojis and special characters; they occasionally cause unforeseen problems in synchronization.

- Go Settings from the iPad main screen.
- General.
- Keyboard
- Keyboards
- Edit
- Tap the delete button next to the Emoji option:
- Tap Delete.

Some projects have reported annoyances with the iPad's autocorrect settings frequently changing common archaeological terms. If you would prefer to avoid this, turn off autocorrect.

- Go Settings from the iPad main screen.
- General
- Keyboard
- Turn "auto-correction" off.

Turn off your iCloud drive to keep file management more manageable.

- At the top of the Settings screen, tap your name to go to your Apple ID page. ...
- On the next screen, tap iCloud. ...
- In the Apps Using iCloud section, you can turn off any app's connection to iCloud by swiping the buttons to the left, turning them from green to gray. Make sure to make iCloud Drive gray.

Turn off dark mode - sometimes it impedes viewing drawings.

Some people find it easier to type on a tiny keyboard with one hand (like on a phone). The iPad's keyboard can be shrunk. When the keyboard is open, use two fingers to pinch it. It can then be positioned anywhere on the screen by touching the gray bar at the bottom and moving it around.

WARNING: we have sometimes run into bugs with the shrunken floating keyboard. If you are getting hiccups in Filemaker - stuck in a field, for instance, or unable to log out - try making the keyboard large again.

An iPad, like any other device, has a learning curve. If those who will use iPads in the field are not familiar with them, they will take some getting used to and you may want to build in time for them to figure the hardware out.

Sometimes we have observed hiccups in using the recording software that appear due to having too many apps running on the iPad, particularly browser tabs. If in the field you are encountering erratic behavior (we notice it most with images) then try closing other apps. We recommend not using the iPads as primary devices for other purposes than field recording while you are in the field.

How do I start my server?

Currently we are giving individual how-to sheets on running the server to every project. Consult your own document called "Running the Server".

I powered up my virtual machine and it tells me it can't find the network adapter. What do I do?

Sometimes (rarely) Virtual Box forgets the adapter. If this happens, repeat the step from your initial setup of Virtual Box telling it what ethernet adapter you are using:
- Go to settings
- Go to Network
- Choose the network adapter you are using: ASIX if you are using a 2023 Kiosk configuration.
- Restart your virtual machine.

What if I forget my Kiosk password?

Every Kiosk has an admin password. If you sign in as admin, you can create a temporary password for your account and then set a new one. Each project has a fact sheet that includes your project's Kiosk admin password.

How do I connect to the server from recording devices?

These are instructions for connecting via a local server while in the field.

From an iPad:
Go to Settings. Under wifi, connect to the network Kiosknet. It will tell you you have no internet, which is fine and dandy - you should not.

For downloading and uploading your cloned database for recording on the iPad, always connect via the Kiosk Bridge app. This should be configured to work seamlessly to connect to the dock associated with your workstation. If it has not already been set up to do this, click on settings in Bridge. The Kiosk URL should be http://kiosk. Your user ID and password are those you use to sign into kiosk, not your Filemaker user credentials. The dock ID is the technical name associated with the workstation in question, such as ldb_ipad. If that workstation in kiosk is in a state appropriate for Bridge to connect (i.e. ready to download or ready to upload) then you can follow the instructions given to you by Bridge.

You cannot import, synchronize, or prepare for download from Bridge. You can only download and upload.

You can access kiosk on the iPad as well, if, for instance, you want to look at the file repository or give kiosk the command to synchronize. Open a browser. For the url, type http://kiosk. Navigate kiosk as usual.
From a laptop:

Connect to the local network "kiosknet" from your wifi settings.

Open a browser and navigate to http://kiosk. If you are using an old network this might not work and you might need the actual IP address. The widget visible on the screen of your server machine should tell you the current IP address (a number, something like 192.168.1.223).

To connect to an online server when your central database and kiosk have been migrated online after a season, use your own particular kiosk's url. It will have the form https://PROJECT.arch-kiosk.brown.edu/

Bridge can connect to the online server as well, just change the settings there to the proper url.

What if I cannot connect to the server?

Usually you will not need to connect to the server from your iPads; that is what Kiosk Bridge is for. If you do need to access Kiosk directly from an iPad, or if you are connecting from a laptop and having trouble, the following paragraphs might help:

Are you connected to the local network?

Usually this is kiosknet. Check your network settings and make sure you are within range and connected to this. On an Apple device you can only be connected to one network at a time and you should *not* have access to the internet - if you do, you're on the wrong network.

Have you given Kiosk time to boot completely?

It takes a few minutes once you start your local server (VM or laptop) for Kiosk to be accessible. If your server is still flashing at you and opening and closing windows, it simply isn't ready yet.

What is the local server's ip address?

If you have the latest Opal router you should be able to access kiosk in your browser with the url http://kiosk.

If you have an older router or if this doesn't work, use the IP address itself. Your local server gets its IP address from the router. That can be a rather dynamic process that depends on your network configuration. When the Kiosk server process has finished its startup, it should show you to which ip address it is listening - take a look in the lower right corner of the screen once startup is done.

The IP address always looks something like 192.168.x.y with x being your local network's subnet and y your server's id within that subnet. The part "192.168" is set! If you encounter anything else there is something fundamentally wrong with your local network setup and Kiosk will not respond to requests.

The server's ip address looks funny (doesn't start with 192.168.)…

If your ip address does not start with 192.168 you are presumably not connected to a router or windows does not accept the network connection as valid network. This can happen if Windows thinks your network is public. Check your network settings and make sure your network is private.

My local server keeps changing its IP address. Is there something I can do?

Yes. Your local server gets its IP address from the router. IP addresses get invalid after a while, and then the server requests a new one. Usually it gets the same one again, but sometimes it gets a new one. That is annoying. So you should configure the router to give your local server the same static ip address whenever it asks for one.

You do that on the basis of the local server's (in fact the network adapter's) physical address (also called a MAC address). That's a universally unique id that identifies a specific physical device and it is burned into the hardware. You want to tell the router to give out a certain (called a 'static') ip address whenever a device with a certain physical address asks for one.

I assume here that you use a tp-link travel router. Log in to it's admin console and add the MAC Address of your network adapter and the IP-Address you want for your server here:

That picture should be self-explanatory. Just Add New and type in the ip address and mac address.

💡 It is really important that you use the MAC address of the network adapter that you actually use to connect the local server to the router. That should normally be an ethernet adapter. So make sure to get the right one.

How do I log in to the router's admin console?

That depends entirely on your router. If you use a tp-link travel router you simply connect to it via WiFi or ethernet cable, open a Browser and type in "http://192.168.x.1" where x is the specific number of your local network and 1 is the router's address within that local network. You should get a login screen. If we have configured it the user name and password should be familiar.

How do I find the physical (MAC) Address of the server?

On windows the best way is to navigate to the "Network Status" (Just hit Windows Key and type "Network status") and click "properties" on the connection that connects the server with the router (should be the Ethernet connection). If you scroll all the way down you find the physical address.

Can I use the server machine itself as a recording device?

Sure.
- you can connect to the running Kiosk server on the same machine by opening a browser (Chrome is recommended) and typing in http://kiosk
- you can also connect to a running Kiosk on the server machine by typing in "localhost:5000". You do not need to know the local ip address. In fact the wifi router does not even have to be connected. This always works if the Kiosk server is running on that machine.
- Log in
- Download a workstation as you would from any other device if you wish to input data - **there is no direct access to the database without a workstation even if you are on the server machine**

- This works better on a PC server than on a Virtual Machine. If you're on a Virtual Machine you may find that accessing Kiosk from the machine strips resources away from the server itself and so slows it down considerably.

How do I log in as an admin to Filemaker?

Some things (including the creation of the first user with registrar status) require you to log in to the recording system as an administrator. Here there is a trick. Use username "admin" and password "admin". You will also need this login if you need to change configuration settings such as valuelists. Ordinary users should never log in as admin, and no one should record data while logged in as admin. The admin login is for making systemic changes, not recording archaeology.

How do I create usernames and logins for my team members?

Before your season starts, you want to make sure that everyone on your team who will be recording data can do so.

- Anyone you want to login to kiosk needs a kiosk user name.
- Anyone you want to record data needs a Filemaker user name.
- Best practice is to use the same name for the same person in both places. We recommend a 3 or 4 letter initials system (ie: LDB for Laurel D. Bestock).
- All kiosk users need passwords.
- You can choose if Filemaker users need passwords; we recommend against it.

Kiosk Users:

(Prefer to be guided with a video tutorial? Find one [here](#).)

To create users in Kiosk you must have administrative status yourself.
- In the hamburger menu, click "Administration". Now you'll be on the Admin landing page.
- Click the hamburger menu again, and choose "users". Now you see a list of currently configured users.
- Click "create" to create a new user.
- For User ID and Repl User ID enter the user's initials or whatever other convention you have chosen for User IDs. The "Repl User ID" should be the

user-id that the same user is using to login to FileMaker (again, usually the initials).

Use short user-IDs, avoid spaces, special characters, and capitalization. Add a User Name if you wish. For Groups to work, groups must have been configured in Kiosk Privilege. In a preconfigured Kiosk you usually find the groups "admins" and "field_workers". Admins can do everything in Kiosk, field_workers are only allowed to download and upload recording workstations and download and edit files in the File Repository. If you need to know more about how groups get their privileges and what privileges exist in Kiosk, there is a video tutorial.

Field Recording Users:

(Prefer to be guided with a video tutorial? Find one here.)

Users in the recording software are created separately from the users in kiosk. Every user that is supposed to record data needs a user-ID in the recording app as well. That very user-ID should also be set as "Repl User ID" in kiosk. In fact we recommend that you use the same user-IDs everywhere. So for Peter Death Bredon Wimsey we'd recommend that you set the user-id in Kiosk to pdbw and the Repl User Id to the same. And then again in the recording:

- Create your whole team at once before the season starts.
- Download a Filemaker workstation.
- Login with an account that has registrar or admin status (admin, admin if you are not already set up with registrar status yourself).
- Click the "registrar and specialists" tab.
- Click the "team members" button.
- Click + to create a new team member.
- Add their initials and name (ie LDB Laurel) and determine if they should have registrar status (recommended) and a password (discouraged).
- You can also delete team members here. This will not affect previously entered data, only the current logins, so if you have a new team for a new season you may want to remove obsolete team members.
- Click + again to add another team member, etc.
- Once your team is entered, log out, upload, import, and synchronize your workstation.
- Any workstations prepared and downloaded after this will have the login information for the team.

What if I forgot the admin password for Filemaker recording or it refuses the one I type in?

This is highly unlikely, but we have seen in a single test case that the admin password got dropped and logging in as admin/admin was not possible anymore. Or you might have set a different admin password and forgot it. However, you can fix it by logging in as a user who has registrar privileges, go to registrar and specialists/team members on the start page, find the admin user and delete the password by clicking on the little trash can behind the "user needs password" check mark. When you close the database and log in again you should be asked to set a new password for the admin.

Daily Administration

How do I prepare the iPads for the field before each work day/recording session?

Preparation (splitting from the central database) of files for workstations happens in the browser in kiosk. You can prepare workstations individually or in bulk, for instance for your whole team. You will most likely prepare all iPads at once prior to each day in the field. You may prepare an iPad singly if, for instance, your registrar but no one else needs access to the day's data after synchronization so that she can check to make sure all bagged materials have made it from the field to the lab.

- Log in to kiosk.
- Go to the Hub via the hamburger menu.
- Each extant dock shows its status in the Hub (for instance "in the field" or "synchronized, needs preparation"). A dock that you want to prepare for work should be at the stage "synchronized, needs preparation".
- For a single dock preparation, click on the dock and follow the instructions.
- To prepare all docks in the state "synchronized, needs preparation" go to the hamburger menu in the upper right corner and choose "prepare filemaker workstations".
- Depending on the size of your file (how much data is in your database and whether or not you are sending all photos to devices) and how many docks you are preparing, the preparation stage can take several minutes.

Once the docks are in the status "prepared for download", you need the devices on which recording will be done to download from Kiosk.

How do I download the database onto an iPad (or a laptop for work in the lab)?

Downloading workstations requires the devices that will be used for recording to be a) in communication with kiosk via the server, and b) represented by a dock in the hub of kiosk that is in the state "prepared for download".

The instructions here are different for getting a file onto an iPad and for getting it onto a laptop.

To download to an iPad recording device:
- Open Kiosk Bridge (an app on your iPad - the icon is a dancing spider)
- If you have used this iPad as this workstation previously, your settings should be just fine. Is the iPad name displayed the one you expect? Otherwise, check with your admin.
- Click "download" from Kiosk.
- Wait for the file to download.
- Click "send to filemaker".
- This opens a dialog box. If you cannot see the Filemaker Go icon, scroll right on the line of app icons until you see it. Click FileMaker Go.
- If you receive a popup saying "Confirm: the file xxxx.fmp2 already exists. Would you like to replace it?" Click **REPLACE**. Do not keep both.
- The file is now in Filemaker and ready for you (or your team member) to work in.

To download to a laptop recording device (including the laptop on which you run the server, if you are using that as a recording device):

- Delete any previous file you have worked in. If you have a file you have worked in and you have not uploaded, imported, and synchronized it, you must do that before you download a new file.
- Connect your wifi to the local network.
- Open a browser window.
- Type in the IP address of your Kiosk server, and log in to Kiosk.
- Go to the Hub.
- Find the dock for the workstation you are on, and click "download".

How do I create a new workstation for recording?

At the beginning of the season you will need to create workstations (docks) for each device that will be recording, for instance "Sarah's iPad" or "Mohammed's laptop". You may add additional workstations later, too, for instance if you open a new unit and have more devices recording than previously.

In kiosk, go to the the Hub. In the hamburger menu, select "new dock". Choose "filemaker recording", and set an id (no spaces, capitalization or special characters) and a name (not picky) for your dock as you wish.

You may utilize different recording groups if you wish to set different rules for groups of docks (for example, sending dummy images to reduce file size to docks used for recording survey units, while keeping images visible for excavators and the registrar; you may also want to separate field workstations and lab workstations so that, for

instance, you do not re-prepare all the field workstations in the afternoon after synchronizing so that the registrar can deal with the day's collected materials). If you are not intending to set different rules for different docks, simply use one default recording group for all Filemaker Recording docks.

In a local excavation setting you can always skip the time zone field as it is intended only for teams that work in time zones different from that of the server. MAKE SURE YOUR SERVER AND ALL IPADS ARE ACTUALLY SET TO THE LOCAL TIME ZONE.

Why can't I use two iPads in the same trench?

Synchronization works by comparing what is in each field and taking the newest version. It has no way of assessing the contents themselves, only if the contents represent a change. If you have two devices adding notes on the same day to the same field, synchronization will take only the latest version as correct and you will lose the input of whoever amended it earlier in the day. The consequences are easiest to see with context creation. If you are using a numbering system where numbers are sequential by unit, for example unit FA has contexts FA-001, FA-002, FA-003, two iPads prepared for the day would each start with FA-003 as the last named context. If on BOTH of those iPads you create a new context, it would be FA-004. But now you have created FA-004 twice, and synchronization will only allow the one with a later time-stamp to be added to the central database. Likewise if an existing record is modified on two different iPads during the same synchronization round, only the latest version will be kept. For things such as narratives and image containers, which are usually created as new fields each time something is recorded, it is unlikely that you would lose data. For things like context descriptions it is extremely likely that you would lose data.

If your workflow requires that you have multiple recording devices per excavation unit then your numbering system will need to be configured to allow for number ranges per device to be used, and you will need a workflow in the field that mitigates against the possibility of two people touching the same recording field on the same day. We highly recommend against it.

Can I rename or delete docks once they have been created?

Yes. A dock is only a way of connecting the core database and the file that will be worked in or exported; it has no necessary or fixed existence. DO NOT DELETE A DOCK THAT IS "IN THE FIELD" or "UPLOADED, WAITING FOR IMPORT". You will lose data. If the dock that created a file in which someone is working is deleted, that person has no way to get their work back into the core database. With synchronized docks, however, the dock can be removed. You might wish to do this, for example, if you want to change recording groups midway through a season. Delete synchronized docks. Recreate them in new recording groups. A dock is deleted by clicking on it and choosing the "more options" menu rather than performing the next expected action.

What is the best file management workflow for downloading, uploading, importing, and synchronization?

The best file management workflow accomplishes two things. First, it protects against working in the wrong file. Second, it fits your team's schedule and archaeological workflow.

Kiosk is intentionally designed to require that you be rigorous in managing your file workflow; this is its most secure way of ensuring that no data are overwritten or deleted, and is complicated because you are bringing together changes made by multiple people to the same database. Kiosk will reject import of the wrong file - the season's data are more important to protect than a single day's work from a single workstation. Kiosk protects the whole. You protect each day's entry from each device by making sure that each person is working in the appropriate file.

There are many protections built in to help you, and there is a workaround if someone works in the wrong file. But by far your best option is to develop a workflow that is attuned to file management.

The three things that will help you most to remember:
- Log out and close your Filemaker file.
- Use Kiosk Bridge for file downloads and uploads on the iPad.
- Choose "replace" whenever prompted that a file by a certain name already exists in place.

- On a laptop, be consistent in where you keep your current file, and delete any file once you have uploaded, imported, and synchronized it.

Your best protection is to delete any file from the recording device immediately after uploading and importing it. This feels bad to those who are used to saving copies and backups. But remember that you will backup Kiosk itself with ALL the data on a daily basis. The files on recording devices are temporary and designed to be so.

Download.

Work.

Logout and close.

Upload.

Make sure your file is in a place where you are able to upload it and where you are aware of which file it is you will upload. On the laptop this might still be your downloads folder, or the special folder in which you keep live files. On the iPad you must move the file out of Filemaker and into a folder you manage. If there is a previous copy in there, you will want to overwrite the old one rather than keeping them both. If you really are not comfortable deleting old files, rename the old ones.

Things Kiosk does to check that you are working in and importing the right file:
- Checks how old the file is when you open it in Filemaker. An old file will have a banner warning you that it was prepared long ago. Default on this is set to 18 hours. Unless you're coming off a weekend and prepared workstations with a break between then and working, if you see this banner you should stop to think if you have opened the right file.
- Checks the name of the file. A download manager may have added a (1) or some such to a filename. You will get a warning on opening it and again should stop and think. On the iPad this will happen in Filemaker Go itself if you have an open file already when you open a new one. Log out and close in Filemaker (and delete your old file from Filemaker) before you open a new one.
- Refuses an import of a file that has not been opened. Once an import is done, the dock is no longer prepared to accept the workstation file it most recently created. So if you upload one you didn't work in, Kiosk assumes you have uploaded the wrong one and that you really don't want to turn the dock's status to imported - waiting for synchronization.
- Refuses an import of a file with an unexpected fork time. Kiosk knows at what time it most recently prepared your workstation. It expects that file to be the one

you work in and return. So if you upload a file with the wrong fork time, it will not
be imported.

In either of the last two cases, because the import was refused you have the opportunity
to think and reconstruct your steps and see if indeed you just uploaded the wrong file.
Fine, go do a new upload of the right one. You will need to move the right file to where
you expect to access it for uploads, and then in Kiosk choose "more options" and
"upload again" from the dock in question in the Hub.

Synchronize.

What IS synchronization, anyways?

Synchronization is the computational process by which data from external sources are
brought into the singular central database. Kiosk compares the extant state of the
central database with the data being provided to it from imported devices during
synchronization, and accepts any changes to the central database. These can be
additions to data, deletions of data, or changes to configuration such as added values in
a valuelist. At the time when devices are uploaded and imported, the files on those
devices differ - each has had inputs from different units and users. After synchronization
there is only one state of the data again, and it is this that is then prepared and
downloaded onto the devices. They start the day the same, go out and record, and
come back different from one another again. Synchronize and repeat.

The technical process is in fact quite complex and relies on comparison of each and
every field. In the process of comparison Kiosk always accepts the latest change to any
field as the one to take. The creation of a new field - a new image, for instance, or a
new context - is a change. The modification of an existing field, say an update to a
context description, is also a change. Kiosk would perform the comparison in
synchronization and would recognize that no context GA-023 (old central database) and
yes context GA-023 (imported device) means to add context GA-023 to the central
database. Or would replace the old description with the new. The content is unknown to
Kiosk, only the fact that something is different, and which of the iterations is newest. If
the old central database included context GA-023, and an iPad that has now been
imported had deleted context GA-023, Kiosk would recognize the newest version - the
absence of GA-023 - as the correct one. Do not delete things on a device unless you
want them deleted from the central database (that is why there are warnings and you
need a certain level of privilege in order to delete something at all).

If two recording devices change the same field in the midst of the same synchronization cycle, synchronization will have not two but three iterations of that field to consider. It will still, as it must, accept only the latest version as correct. In this case the first of the devices on which the change was made that day will lose whatever was recorded. Provided you are using batch importing and synchronizing all of your devices at the same time, Kiosk will catch this in the process and tell you something suspicious is going on. The nature of synchronization as a process - not just Kiosk's version of it, which is already very sensitive by doing field-by-field comparisons - means that this cannot be managed at a computing level. You must have a workflow that prohibits two devices changing data in the same field at the same time. This is simplest by requiring that there be only one recording device per unit, and that a director who is walking around making notes on her own iPad make only site notes, narratives, and images, and rather instruct field supervisors in needed changes in context recording.

I am having trouble with Bridge. What do I do?

If you cannot connect Bridge to Kiosk, check your settings. First, are you on the local network? (Wifi settings: kiosknet. Password, kiosknet.) Sometimes iPads switch back to trying to be online and jump between networks if others are available.

Settings within Bridge need to have a registered user and password (Kiosk login credentials) and the name of a dock, and that dock itself needs to be in a state where it should be communicating with Bridge (which you can control only from Kiosk, not from Bridge itself).

If Bridge quits on you immediately after you hit "upload to Kiosk" then you may need to resend the Filemaker file to Kiosk. Just go back to Filemaker, select your file, and send it again. In tests we have most often had this problem when we are clicking at lightspeed, and so waiting patiently and making sure not to double-click may also help. (This issue will be solved but the developer can't tackle it while teams are in the field, so for 2023 this doing it again is your friend. Also a good note: whenever things don't work properly do let the developer know. Sometimes it's an irreproducible hiccup of the sort you get using any software. Sometimes it's a real bug that we will track down and squash.)

How to prepare and connect the backup drive

If you get your hardware configured by the Kiosk team this is usually not something you need to do. If you use your own hardware to run Kiosk as a virtual machine please

follow the instructions on how to set up a virtual machine for your operating system. It includes instructions on the backup drive. Otherwise read on:

How to assign Z as drive letter to my backup drive on Windows

If you run Kiosk on your own laptop directly (not as a virtual machine) you can follow these steps to make sure that your backup drive is properly set up:

- Connect the drive to your computer (usually to the USB Hub)
- Windows assigns a random drive letter to this hardware. Start a file explorer (Windows+X / File Explorer) and try to find your hard drive under "This PC".
- Now start the Disk Management Utility by pressing Windows+X and choosing "Disk Management"
- The Disk Management takes a while to show you all available Disks. Find your backup drive in the upper list and right-click on it.
- From the context menu choose "Change Drive Letters and Paths…":
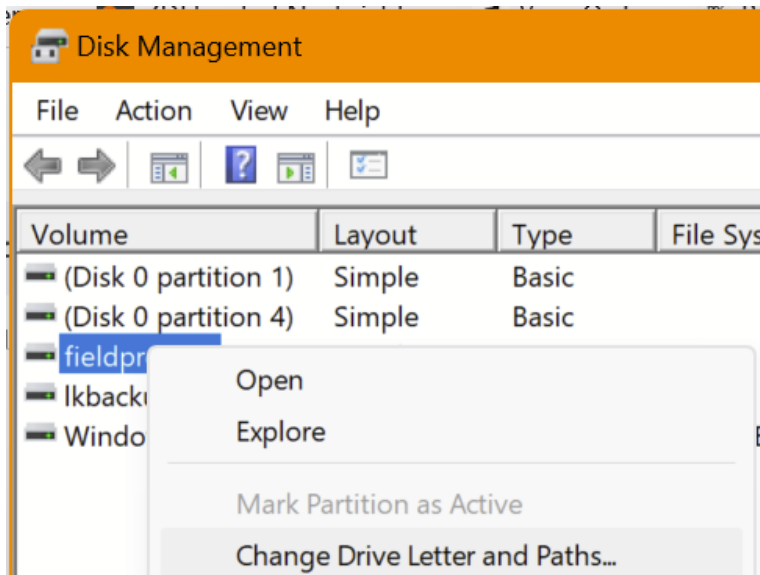
- Hit "Change" and select "Z" as the drive letter:
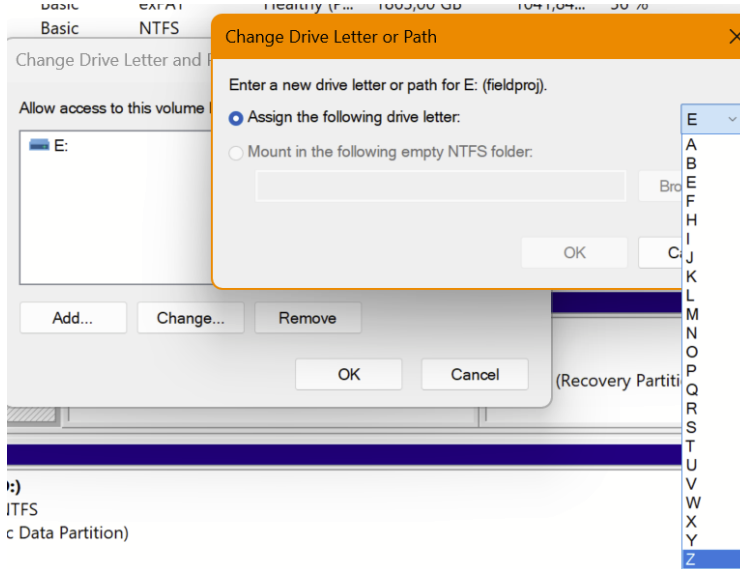
- If Z is not available there must be a different disk using that drive letter. In that case you'll have to find that one first in the Disk Management and assign it a different drive letter.
- After confirming all steps your backup drive has the drive letter Z: and you can close the Disk Management
- Now test if that is true: Hit Windows+R, type z:\ and when you hit enter a file explorer should open and show you the contents of your backup drive.
- Create a new folder "backup" if there isn't already one
- Create a new folder "file_import" if there isn't already one

How do I back up my data?

Connect your backup hard drive to the server and make sure that it is mounted to the correct drive letter in windows. See "How to prepare and connect the backup drive" if that's not the case.

As an admin in Kiosk go to the administration module via the hamburger menu. Click the black backup button. You should usually backup both the data and the File Repository, so make sure you have the File Repository checkbox checked unless you have good reason not to.

It is best to do a backup after your workstations have been prepared for the field or downloaded or uploaded again but before they are imported. Should something go wrong with an import of a filemaker workstation or once that imported workstation was synchronized, you can always rewind to the point before the damage was done.

I entered a bunch of data that I do not want to keep. How do I *not* import that data?

If you have created records in a downloaded database and do not want to keep any of the changes you have made, you can simply not import the workstation. Trash the file on the recording device (including removing it from Filemaker). Reset the workstation in kiosk, and prepare and download a new file to work in.

What is resetting a workstation and why would I want to do or not do that?

Resetting a workstation takes a dock and puts it back into the "synchronized - needs preparation" state. Resetting workstations is not something you do in the ordinary workflow of download, work, upload, import, synchronize. It is used when you do not want to complete the cycle and need to use a dock to prepare a workstation that is not otherwise ready.

The most usual circumstance when this would be useful is if you have downloaded a workstation, done no work in it, and others have uploaded and synchronized and you want their data. If, for instance, you downloaded a workstation to play in and familiarize yourself with the system, you explicitly do NOT want to upload any data you made - those aren't real data and you don't want to clutter the real record. How do you get a new clean copy in order to record actual work? You reset the workstation, trash the file on your recording device, and prepare and download anew.

How do I restore to my latest backup?

Do this only if you have tried to get support. Often it is not necessary to restore a backup, which almost always comes with some loss of data. There are other ways to repair a system. If you are advised to restore or know what you are doing, this is how:

You can restore the database and File Repository in Kiosk to your last backup. Go to administration, accessible through the hamburger menu in the Hub. Once there, click on "restore." Click the box to ensure that you also restore the File Repository. This will bring up a menu where you can select the backup file from which you want to restore. This will likely be your most recent backup, and it should thus be first in the list.

After you have restored, you will need to restart your server and run housekeeping. Restart the server by powering down and up again as you usually do to begin a session. To run housekeeping you need to be logged into Kiosk with admin privileges. Go to the administration module and click on the black housekeeping button. It is usually fine to just run it with the default settings. If you cannot see thumbnails in the File Repository after the housekeeping run then you have run into a minor cache issue that can be solved by forcing your browser to do a full reload (CTRL+F5 on Windows, switching to a private browser tab on iOS, who knows the Mac shortcut?).

How do I duplicate my data so that multiple copies leave the field?

Your data are already in two places if you have been backing up regularly: the server and your backup drive. Consider sending them home with different people. However, having additional copies as backups may be desirable.

The purpose of duplicating backups is to make sure that loss of a piece of equipment does not mean the season's data are lost. It is not intended to allow for team members to have copies when dispersed. That can be accomplished by migrating the database to an online server after the season.

What if work was done in the wrong file. Is it really irretrievably lost, or can I override Kiosk and get those data in?

You can override a rejected import. This SHOULD NOT BE A NORMAL EXPECTATION OR PART OF YOUR WORKFLOW. It is an emergency plan for the vanishingly rare case in which your file management has failed.

If there was actually work done in the wrong file, for instance if someone worked in yesterday's file despite having already uploaded and imported that, you would have gotten an error message at import. You are able to override the rejection (fancy new scary feature - much better to avoid using it by having a proper workflow). A caveat here is that if you deleted anything in your day's work, the deletions will be rejected and you will be warned.

You only have this option once an import has been rejected.

On the dock in question, click "more options" and "import troublesome recording data". Accept the troublesome import. And then reform your file management practices so it doesn't happen again.

A file was downloaded to work in without deleting the previous day's file first. What do I do?

You must work in the most recent download. Once a file has been uploaded and imported, the local file should be trashed or moved out of the way where it cannot be confused with a current file.

If you are on a laptop and your download was renamed because it was a duplicate, the safest course is to delete both files and download again. Though the "upload new field data" will be the default next step for that workstation since Kiosk thinks it is already in the field, clicking on "more options" will give you the chance to download it again. But any steps you take to make sure that you are working in the latest file with the name Filemaker expects will work. You also have to make sure you upload the proper file.

On the iPad, using Bridge, you should have been asked if you want to replace the old file, and the answer is yes! If you accidentally fail to replace the old file, you will be warned on opening it that it has the wrong file name. The most error-proof course of action is: logout and close. Select BOTH files in the launch center of Filemaker and trash them both. Return to Bridge and hit "send to filemaker again".

Why does a download, when opened in Filemaker, say "update successful" instead of the normal home screen?

This means the workstation in question has received a patch. A patch is an update to the configuration or to the version of the recording software that has been made by the Kiosk development team and delivered to your project. This is done in a way that the changes are applied only to the first downloaded clone of the database; they are synchronized into the central database of your team when the workstation that received the patch is uploaded, imported, and synchronized. It is important to make sure that any download in which you see this message gets uploaded and synchronized.

It is possible to work in a file with a patch before uploading and synchronizing. However, the changes will not be universally available until after synchronization, and best

practice would be to immediately upload, import, and synchronize any file in which you receive this message, then re-prepare and download again.

The development team told me my system has been patched. What does that mean and what do I do?

A patch is an update to your recording system that comes with changes to your Filemaker configuration. It is delivered in a way that requires a workstation to be downloaded, uploaded, imported, and synchronized. If the Kiosk team told you you have a patch you should prepare one workstation, download it, open it, close it (you do not need to add any data), upload, import, and synchronize. After that you can work as usual - the update in the patch will have been applied to your central database and is now in any future preps and downloads.

How much time should I expect to spend on preparing workstations before work and on uploading and synchronizing stations after work?

The amount of time it takes to prepare and return workstations depends on three factors. One is how many there are; the second is how much data is in your recording system; and the third is your own familiarity with the workflow. Expect no less than two minutes per workstation on either end even for a small database. With thousands of photos in it, time can increase to five minutes per workstation or even more (see file picking to reduce file size). A team running six trenches with a moderately sized database and an admin who is comfortable with the system can get ready to go into the field in 15 minutes and can get data imported and synchronized in a similar amount of time. But on the first days of the season, expect to spend quite a bit more time until you are used to the workflow.

How do I get my data off the recording devices and into the central database (upload and import)?

After data has been entered on workstations, it is returned to the central database by means of uploading, importing, and synchronizing.

Each workstation's data needs to be uploaded separately to its dock by going through the upload process from the iPad or laptop recording devices. Either your team members can upload their own data or you can gather iPads and do it as an admin.

Before any file can be uploaded it needs its user to logout and close the file.

The workstation itself must be in range and connected to the server via kiosknet (for local setups).

Laptop workstations:

- Go to the hub in kiosk
- Select the relevant dock, which should be in the state "in the field"
- Click it
- Click "upload new field data"
- Select the file to upload (the most recent Filemaker file, which really should be the only one on the computer)

iPad workstations:

- Open FilemakerGo but do not open any files
- Click "select" in the upper right corner
- Choose the file to upload
- Click the "send to" icon (arrow in a box) at the bottom of the screen
- Send to Kiosk Bridge *
- Accept the "Got it!" message from Bridge
- Click "upload to Kiosk"

* Should you encounter problems with KioskBridge itself and cannot upload (or download) with it, see "How do I use Chrome to download and upload on an iPad?"?

After uploading, you are done with the devices themselves for this round. Now in Kiosk you must import the files.

You can import docks either individually or collectively, much as with preparation for the field. Individually you issue the command from the dock. Collectively, you can "import filemaker workstations" using the hamburger menu in the Hub.

The final step is to synchronize the data by clicking on the "synchronize" option in the hamburger menu.

Once you have synchronized, all of the day's data has been added to the central database. Any new preparation and download of a file will reflect the changes made on all workstations.

How do I use Chrome on an iPad to download and upload the filemaker file?

While KioskBridge is highly recommended for iPads, this is how you download and upload a FileMaker database from Kiosk using Chrome:

- From the iPad, connect your wifi to the local network.
- Open Chrome on the iPad and type in the IP address of your Kiosk server (or http://kiosk if that's what Kiosk listens to), and log in to Kiosk.
- Find the dock for the workstation you are on, and click "download".
- On the iPad this will open a little Chrome message that wants you to click "download" again.
- Once the download is done make sure the downloaded file is real by checking its size. If you see something tiny like a megabyte or two, see the section "".
- When complete it will give you the option "open in". Choose Filemaker Go.

And from now on everything is working the same way as with Kiosk Bridge: If FileMaker Go asks you to replace a file of the same name then YES, REPLACE THAT so you are working in the fresh download and not the old file.

To upload a filemaker database to Kiosk you have to move the file into a folder that the browser can access.

- Open Filemaker but do not open the recording file.
- Click "select" at the upper right.
- Choose the file you have been working in ("XXX_recording").
- Click the "send" button at the bottom (looks like an arrow leaving a square). Choose "Send To" and then, and now it is different from using KioskBridge, choose a folder.
- Click "On My Ipad".
- It is recommended that you create a new folder in "on my iPad" for the purpose up uploading. You can reuse that folder all season. To do that click the + folder button at the upper right. Name your folder something you will recognize, like Kiosk Upload. Save your file there. (After the first time you will simply have this folder as an option when you have chosen "Send To" from Filemaker.)

- If this is your second upload via this way you might be asked whether you want to replace the file in the folder. Always hit yes at this point to make sure you upload the most recent database file.
- Once the file has been moved to the folder, go to Chrome on the iPad, connect to Kiosk,
- go to the hub and click on the same dock from which this iPad had originally downloaded its FileMaker file. It should have the status "in the field".
- Choose the "upload new field data" option at the top, and then "Choose Files". You may have to navigate to the proper folder the first time you do this, but subsequently it will be in the right place automatically. Click the file you saved in an earlier step.
- You will see a progress menu in Kiosk as the upload is working, and then the status of the dock will change to "uploaded, needs import".

Your dock has now gotten to the same state as it would have had you been uploading via KioskBridge. Your admin can now import the dock.

A file download was tiny and is clearly wrong; I can't open it in Filemaker. What happened and what do I do?

Tiny means < 1MB. This is a cache issue in the browser. We ran into this in testing on Chrome only and sincerely hope that the aggressive measures Lutz put into place to prevent caching have solved it. We haven't run into it for a bit, but it was severe enough that we describe it here so that if it returns you don't freak out.

You have two options. Either you can open an incognito window in your browser, or you can delete and reinstall the browser. Apple prevents real cache-clearing on iPads. In any case: Make sure you are on the latest Chrome and iOS versions.
Updating those components has solved the problem in the past.

A file that was uploaded had an error or was refused for import. Why and what do I do?

If you work in the wrong file and try to upload it, Kiosk will recognize that it was not the file it expected. This is not a normal operation and

What you see and what to do depends somewhat on what the problem was.

If you have not replaced your file or not gotten rid of an old file, but have worked in a more recent download anyway, your file name will be wrong.

In Bridge, if you try to upload a file with the wrong filename (xxxx1.fmp12) then it will refuse your upload. What has happened here is that you failed to replace your old file when you last downloaded your workstation, and so the most recent download was named with a 1 at the end of it.

The fix: if you worked in that file, the one named 1, then go back to Filemaker Go. Select and delete the file with the RIGHT name, the one without the 1. You now need to rename the 1 file to the proper thing and get it into Bridge. Alas, Filemaker is a pain in the butt and this takes steps.

- Select the remaining xxxx1.fmp12 file, the one you want to upload.
- Move it to a folder on the iPad.
- Go to that folder, and rename that file by clicking on its name and amending it to be xxxx.fmp12 without the 1.
- Now click on the file icon itself, and in the upper right corner click on the "send to" button.
- Send it to Bridge and proceed as usual.

If your workstation is a laptop, Kiosk will accept the upload of a misnamed file but will give you a warning message to make sure that you are really uploading the file you want to. Are you? Then accept it - you'll be able to import and synchronize.

If you have actually worked in an old file, one that had already been uploaded and synchronized, then your problems will be a bit different.

From a laptop, you will be able to upload without problems. But at the import stage, you will get a failure, and if you click on the error you will be told why. Most likely it will tell you that this cannot be the right file, it was created earlier than the most recent download. If you are REALLY SURE that this is the file you most recently worked in, that you can locate the problem in the workflow that led you to work in an old file then you can import this. Go to the dock, click "more options" and then "import troublesome

data". There are emergency settings on this import, and you will see once you have performed it if the emergency settings kept Kiosk from deleting things that it wanted to on the basis of this old file.

With Bridge on the iPad it's more difficult to work in an old file. If you do, as in, there is a later download called xxxx1.fmp12 but you have worked in xxxx.fmp12, then your steps are as follows.

- You will send the file to Bridge as normal, and Bridge will accept it and the upload will go just fine - it's called the right thing.
- But at the import stage, you will get a failure, and if you click on the error you will be told why. Most likely it will tell you that this cannot be the right file, it was created earlier than the most recent download.
- If you are REALLY SURE that this is the file you most recently worked in, that you can locate the problem in the workflow that led you to work in an old file, then you can import this. Go to the dock, click "more options" and then "import troublesome data".
- There are emergency settings on this import, and you will see once you have performed it if the emergency settings kept Kiosk from deleting things that it wanted to on the basis of this old file.

If you are using iPads in a pre-Bridge state it is very easy to work in the wrong file. That horror of a file management system is why Bridge was invented. In this case you really need to figure out which file it is you have worked in and that you want to upload. Get rid of the various other possible fmp12 files floating around in Filemaker and the Files folders. Make sure the one you want to upload is named properly. And then follow the steps you usually do to get the file uploaded.

Then install Bridge and learn its workflow. Really, it makes it easier.

Do all workstations need to be back from the field before I synchronize?

No. You can synchronize some workstations even if not all have already been uploaded. Synchronization does not reset the status of docks that are not imported and ready for synchronization, so those docks remain prepared to accept the uploads from people who are still in the field.

Simply go through the normal synchronization procedure in the Hub, and once the last trench has finished excavating for the day do not forget to upload, import, and

synchronize that one, too. This can be useful if for instance your registrar needs access to the excavation team's records from the day, but your survey team is still out in the field walking transects. Upload, import, and synchronize from the excavation team's workstations, and prepare a new download for your registrar. Deal with the survey team when they get back.

Can someone work for two days in one file without uploading and synchronizing?

Yes, but it's not good practice. As long as the dock in the Hub is still in the status "in the field" it can accept an upload and import from the file it created to achieve that status. Since you can upload, import, and synchronize any number of docks at a time, you can allow a workstation to stay out for multiple days even if the others are all coming in and going through the whole cycle.

There are good reasons not to do this unless it's strictly necessary. First is that your chances of losing data increase the longer data are being made but not synchronized into the central database. Equipment failure or human error would cause data loss that would otherwise have been avoidable. Second is that until those data are synchronized they are not available to anyone else. You as director can't see what your team is up to, and your team cannot see what is happening in other units. So this is not good practice and should be resorted to only if, say, you're sending a survey team out and they will not be back to the place where the server is for a couple of days.

Default has a time-stamp setting that checks if a download is old. You will receive an error message if so. This is designed to make sure no one works in a file that has already been uploaded. If you are intending to work for multiple days in the same file without uploading, importing, synchronizing, and downloading again, then you can override this message.

How do I tell what my team did today?

After synchronizing devices who have worked on that day, you can keep track of the work day by going to the Director's View module in kiosk, accessible through the hamburger menu in the Hub. This tool allows you to see the last modifications made to specific records, so it is not meant to be used to see weeks (or even days) in the past. The Director's View allows you to track who made the records, where they made them, and what the records themselves consist of (including narratives, images, collected materials, contexts, and features). For contexts, the Director's View also allows you to

use Quality Control (QC) to track if important data (such as opening date and context type) are missing.

How do I create a new site?

In order to create a new site you must be logged into Filemaker as a user with registrar status. On the start screen towards the top you will see the navigation menu for any existing sites. To the right is a gear menu - that's where you can create a new site by clicking on the plus button. When creating the site you will be able to define its site id and full name, as well as describe its purpose and add a site map. Created sites cannot be deleted. After creating the site, that workstation needs to be synchronized so that the site becomes available on all iPads.

How do I create a new unit (also called area, trench, etc)?

New units are created on the start page of Filemaker, by clicking on the plus button to the right of the navigation menu for units. Clicking the plus button will take you to a screen where you will be able to define the site where the unit is located, the type of unit (excavation, feature, or survey), the recording method used in that unit (locus recording for excavation using contexts; feature recording; grab (total surface collection) or transect recording for survey units), the date of creation, the unit supervisor, the terms used for units and contexts in your project, the unit number, and the unit's description and purpose. Once you have created the unit, synchronize your workstation so that the unit becomes accessible for other iPads.

How do I assign a range of context numbers to a device or a new unit?

Identifier lists assign a range of numbers from which the next automatically created context number is bound to a device, a unit, or a person. This enables you to be sure that two devices can create new numbers at the same time (during the same synchronization cycle) without using the same number. For instance, device ldb_ipad may have numbers 1-999, and device lkh_ipad numbers 1000-1999. Each then creates new numbers without fear of conflict.
Configuring a system to require identifier lists is done in the initial setup of a project after we have discussed workflow with you.

Assigning ranges of numbers, however, is often necessary in the field, either as new devices/units/people are brought into play or as old ranges are exhausted. If you create new devices or units or people, you will need to assign new ranges of numbers to them. You can assign this range once you know what the device etc will be called, whether or not you have already created the device or unit.

In the recording system signed in as someone with registrar or admin privileges, go to the registrar tab, and under registration click "identifier lists". In the field at the top type or choose context_numbers. You can now see the previous ranges assigned for context_numbers. Use the plus button on the right to create new ranges and assign them to a partition: the device or unit or person.

For devices, the device ID is what you need. In the Hub on Kiosk you can see a device's id in square brackets, for instance [ldb_ipad] needs a partition called ldb_ipad. This is the same ID that Bridge uses.

If you run out of numbers in a partition during the season, you can change the range assigned to the partition. Simply specify a new range (necessarily one that has not yet been assigned to a different unit). This will not overwrite your old context numbers, just give you a new set of numbers to use in that unit.

Note that you cannot assign overlapping ranges - that's the whole point.

If you have legacy data in your system, it cannot know when you create a range for a partition if a number in that range is already used. However, you will get an error when trying to create a new context in this case. Knowing what context numbers you have already used when assigning partition ranges helps you avoid this.

Note that this feature only works if your identification method is already configured to need numbers from a list; making lists without a configured method that needs lists does nothing. This would have been set up by the Kiosk team in the beginning after discussing your workflow. If you determine mid-season that you need this feature, if for instance you find you have a need to have multiple iPads per trench and need not to assign overlapping context numbers, please get in touch with us to reconfigure your identification methods.

How do I find a particular context to see details of what has been found in it?

You can always access a context by going through the unit page in Filemaker and navigating to the contexts tab. However, it can be more efficient to find a context through the search menu in the start screen of Filemaker. There you can simply type in the context's identifier (or part of its identifier) and be taken to the context page directly.

What is tagging in the interpretation tab of a context?

Tagging is a flexible way of marking contexts as having something in common to allow for grouping them for interpretation. The same tag can be applied to contexts in different units, allowing you to see them together. All tags exist within tag groups that you define. For instance, if you are working in a large building you might define a tag group "Rooms" and then individual tags for each room. All of the contexts associated with a room could be tagged as "Room 1". You might also create phasing tags, so that any context you have determined belongs to Phase 1 gets so marked, etc. Any context can have as many tags as you wish to assign.

In the "registrar and specialists" tab on the start page of your recording system there is a button "context analysis by tag". You can add as many tags as you wish to see all of the contexts, photos, and collected material grouped.

Both creating and applying tags needs some thought and should not be done on the fly. For instance, were you to create two similar tags, "Phase 1" and "Phase I" and apply them to different contexts meaning the same thing, you would inhibit rather than promote interpretation.

How do I delete a record?

Deleting records should be done rarely and with care; they cannot be recovered except by backing up to an old version of your database, which would erase more recent data. Deleting a record deletes all of its associated data, so for instance deleting a unit deletes all its contexts, all their photographs, all their collected materials, and all records associated with those. It is usually better to mark a record VOID than attempt to delete it.

However, in some instances deleting may be desirable, particularly if a record was created in error. Deletion is done in the Filemaker recording, and synchronization accepts the deletion. Anywhere you see a red trashcan button you can delete a record.

For some types of records the button is only visible once the record is selected. For instance, deleting a context requires opening the context, clicking the hamburger menu in the upper left, and hitting the delete button.

Only those with certain levels of privilege can delete things in Filemaker. For instance, a registrar can delete a context but not a unit. An admin can delete a unit. An ordinary user can delete a sherd. Generally speaking even the director will usually log in with registrar level privileges. If you want to delete more than is possible this way, log in to a downloaded Filemaker workstation as user admin. To delete a unit (or a site), choose the appropriate unit (or site) in the dropdown menu of the start page of the recording. Go to the gear button on the right to open the definition of that unit or site. The red trash can button should be visible.

Once a record is deleted in Filemaker and that workstation is uploaded, imported, and synchronized, the record is deleted from the central database and cannot be recovered.

Why do I have two collected materials (or other records) with the same number?

Most projects use numbering strategies that automatically generate the next number in a sequence when a new record is made. If you see after synchronization that you have two records with the same number, then this is almost certainly a workflow issue not a bug. This happens when two different workstations each create the next number in a sequence within the same synchronization cycle. They have no way of knowing that another workstation is also creating the next number in the same sequence, and so both create the same new number. For instance, you might have an excavator working in locus MB10-008 and a registrar in the house looking at objects from MB10-008 and both of them have the day's new download, which had collected material numbers up to MB10-008-13. The excavator creates a new record and tag for ceramics that day and it is numbered MB10-008-14 - the next in the sequence. But if the registrar finds a bone in the ceramics bag from a previous day and needs to create a new number, their workstation, too, will know that MB10-008-14 is the next in line. After synchronization you will then have two records MB10-008-14, one the ceramics bag from the field and the other the bone bag the registrar created in the house. One needs to be renamed.

If you have accidentally created two records with the same number and would like to change one of them, see below: how to change the number of a record.

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If your workflow means that it will happen regularly that two workstations need to be recording in the same records, you will want a numbering strategy that uses identifier lists to pre-assign sets of numbers by user or recording device.

How do I change the number of a unit/context/collected material record?

Changing archaeological identifiers (numbers) should be done only rarely and with full knowledge that it is dangerous. If you change the number of a record that already has things recorded in it you risk confusion. Change a context number and anything you have collected by the old number will still have the old number, both in the recording system collected materials, and on bag tags in physical storage. Sometimes you need to make a change, as in cases of duplicates. But the earlier you catch it and the more systematic you are about thinking of the potential cascade of hierarchical numbers affected the more likely you are to use this tool wisely.

To change a record, log into the recording system as admin/admin.

Navigate to the record you wish to change.

In the burger menu in the upper left, choose the "temporary free input" button (shown in red below):
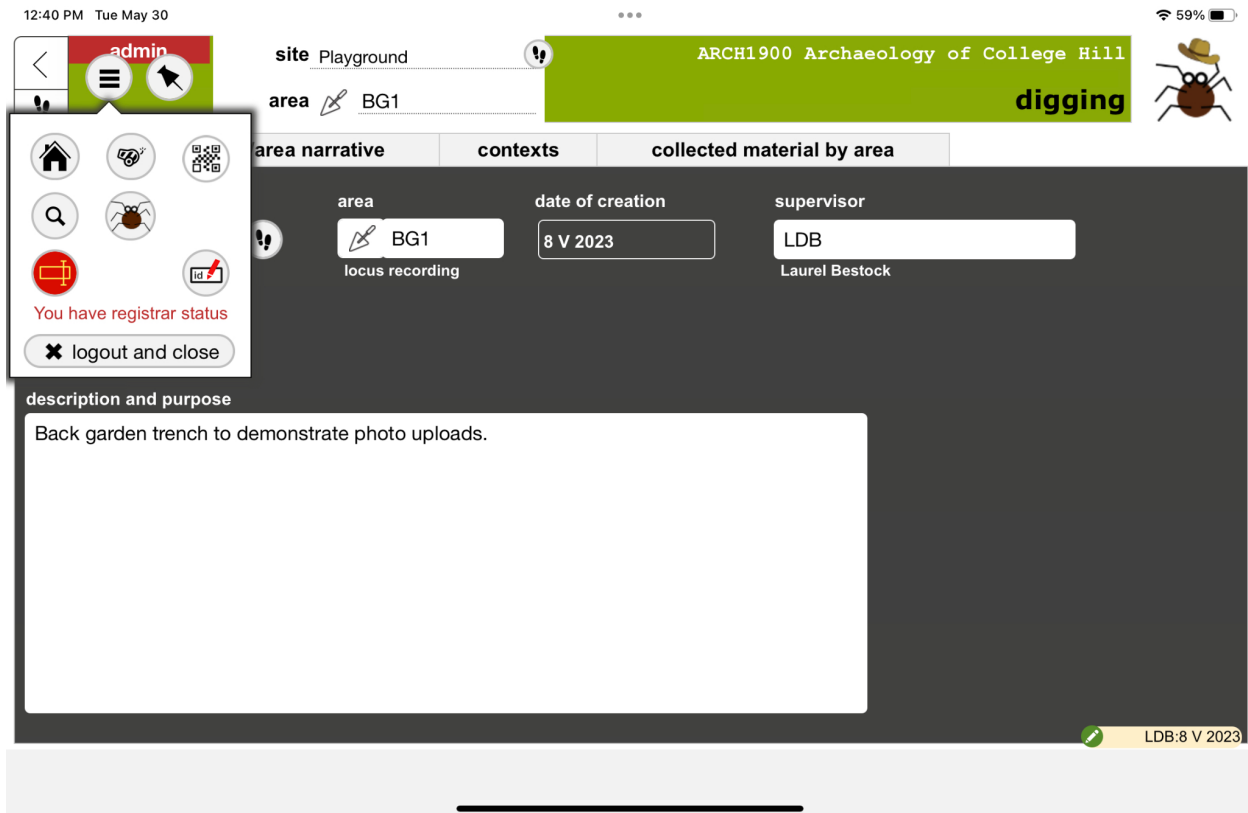
Now click the "ID" button that has appeared to the right.

You will get a popup that allows you to rename the entity.

Do not forget to turn temporary free input off when you are done!

I created a "small find" record but now realize that I should have created a "bulk" record instead. Can I change the collected material type of an existing record?

Yes, if you have registrar privileges. This does not work only to change from bulk to small find, but also from small find to bulk, or from sample to either bulk or small find (and vice versa). Once you are in the record of the collected material for which the type needs to be changed, the hamburger menu has a green button (below the qr code button) that allows you to choose which collected material type you would like to turn that record into. Don't worry - if you change a small find to a bulk, for instance, and then

later decide again that it should be a small find, you can turn it back into a small find and your small find details will not have been lost.

Do not forget! If your numbering strategy for collected materials is bound to collected material type (so bulk, small finds, and samples are all numbered in specific ways that differ from one another), you will also have to rename your new collected material record. If you need help renaming records, see the "How do I create a number for a unit/context/collected material that does not follow my ordinary numbering convention?" question in this guide.

How do I create a number for a unit/context/collected material that does not follow my ordinary numbering convention?

Temporary free input allows you to use an archaeological identifier that is contrary to the numbering conventions Kiosk is set to apply automatically. There are a couple of regular situations where this might be desirable:
- If you are inputting legacy data from excavations in the same place that used different numbering conventions.
- If you know you have two workstations working in the same record and you want to make sure that numbers do not collide, such as a registrar and excavator both creating collected materials, but so rarely that you do not define ranges in advance.

You must be logged in as someone with registrar privileges in order to create a number not using the configured convention.

In the burger menu in the upper left corner, choose the temporary free input button. Now when you create a new record (of any type) it will not be automatically numbered but will ask you to type in the identifier.

If you are using an identifier that you wish to be recognized by the system in next creating a sequential identifier, you will need to add the serial numerical part of the number (the thing that will be followed in the next auto created number) and the domain (the entity to which the current entity belongs). For instance if you create a context MB10-004north when the system would have created MB10-004 automatically, you want to define the sequence as 004 and the domain as MB10. If you do this, your next auto generated number will be MB10-005. If you do not, your next auto generated number will be MB10-004.

You cannot leave those fields blank. However, if you do not wish to attach a sequence or domain to your newly created freely named entity you can add "0" to those fields.

Why are there "clear all data" buttons in the admin tab of the Filemaker recording and in admin of kiosk?

Do not push these buttons! Guess what they do?

So, why does it exist? The developer needs it every now and then. Don't push it. You will get a warning if you try. Don't ignore the warning. (In more recent versions of the recording these buttons are only visible to testers and developers.)

How do I add an option to a drop-down menu?

Some drop-down menus are dynamic and accept new entries that then become accessible for the future. For example, small finds type is a dynamic menu. The first time you find a coin, type coin. The second time you find a coin, that will be in the drop down menu to choose (which helps insure against typos and thus ensure searchability).

Most drop-down menus are static; you don't want your team changing things on the fly. As such, they are more difficult to change.

To add an option to a static drop-down menu you must be logged into Filemaker as admin. In the admin tab in the start screen, click on configuration. Next go to the valuelists category. There you will find most valuelists (drop-down menus) used in the system, and you can add options to any of them simply by typing into the text box next to it. Note that some valuelist changes require changing two different valuelists, for instance locus relations has one valuelist for relations, and another to define which relations are opposites. "Above" and "below" both have to exist in the first before you can define "above=below" as an opposite relationship so that the system automatically generates the second relation.

It is possible to add a new locus type to that drop-down menu, but we really recommend against it. Some words are used fuzzily by archaeologists, and these include things like deposit, fill, feature, structure, etc. Unless you are totally certain that your team will be consistent in differentiating the way you want them to between say, deposit and fill, you are much better off keeping a few broad categories and getting nuances in in description.

If you do want to add a new locus type, you must go to the locus type button in the admin tab of Filemaker. There you will be able to add a new locus type by clicking on the plus button and customize its id, name, and formation process.

How do I highlight fields to indicate to my team that they are critical to fill in?

You can use Quality Control (QC) to flag specific fields that need to be filled in by your team members. When configuring your QC rules, you can decide if certain empty fields should trigger an error, a warning, or a hint. Errors will keep the user from leaving that field without filling it out, warnings will make it clear to users that those fields should be filled out, and hints should be used for fields that are important but not critical.

Configuring Quality Control currently lacks a UI that a non-developer would be able to use easily. If you would like to implement this feature then please contact the Kiosk team with a specific set of requests: which things would you like the system to *remind* people to do, and which things you would like to *require* people to do.

You will receive a set of rules for your project and can do the installation yourself (see next paragraph)

How do I install a set of quality control rules?

Quality Control rules are configured in the recording app itself. So the first thing you need to do is download a fresh recording app to your computer (an iPad is not the best choice in this case) and start it with FileMaker. The Kiosk team will provide you with two files that contain your quality control set: A file with rules and a file with flags, called something like "rule_settings_…xml" and "flag_settings_…xml". It is these two files that you are going to import to the recording app, so make sure they are available on the computer on which you run the recording app. Now follow these steps:

- Log in to the recording app as admin
- On the Welcome page go to the admin tab
- Click "quality control" -> You enter the quality control configuration.
- In here click on the import button in the header. It has a tray and an incoming arrow like this:
- You'll be ask if you want to proceed; click "yes, I do"
- You'll be informed that the first thing to import are the rules. Click "okay".
- A dialog "Specify XML and XSL Options" appears. Select "file".

- A popup that allows you to select a file appears. If it does not automatically, you might have to hit "Specify" in the former dialog box.
- Select and open the rules settings file you got from the Kiosk team
- Back at the former dialog hit "Continue…"
- A strange "Specify Import Order" Dialog appears. Don't do anything here except clicking the "Import" button right away.
- You'll get a summary that should look something like this, except that the number of added or updated records might be different:
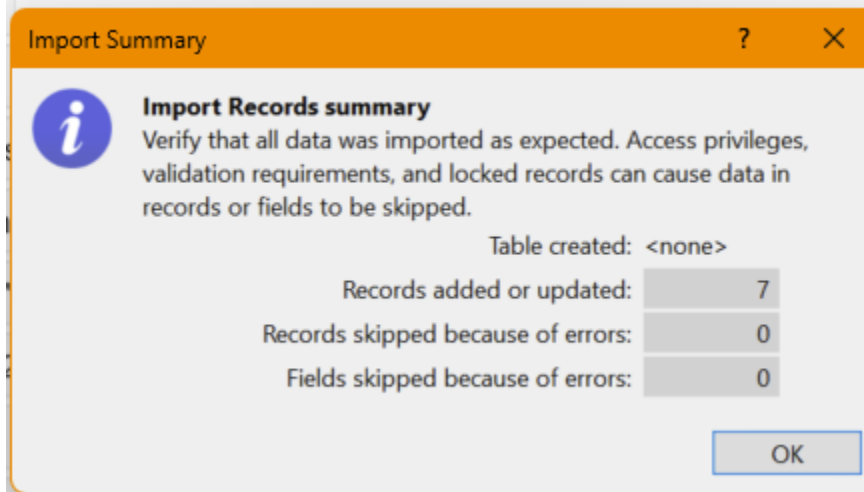
- Click OK. Now you are going to do the same thing with the flag settings file:
- Click "okay" when you are asked if your want to import flags.
- In the "Specify XML .." dialog this time choose the flags settings file and continue
- In the "Specify Import Order" dialog only hit import right away
- You'll get an "Import Summary" just like the one above.
- Finally you will see an "Import finished" message that encourages you to check your records now. That means you can go to some unit (area / trench) that already has loci (contexts/SUs) and hit the check quality control button to see if the quality control rules are working:
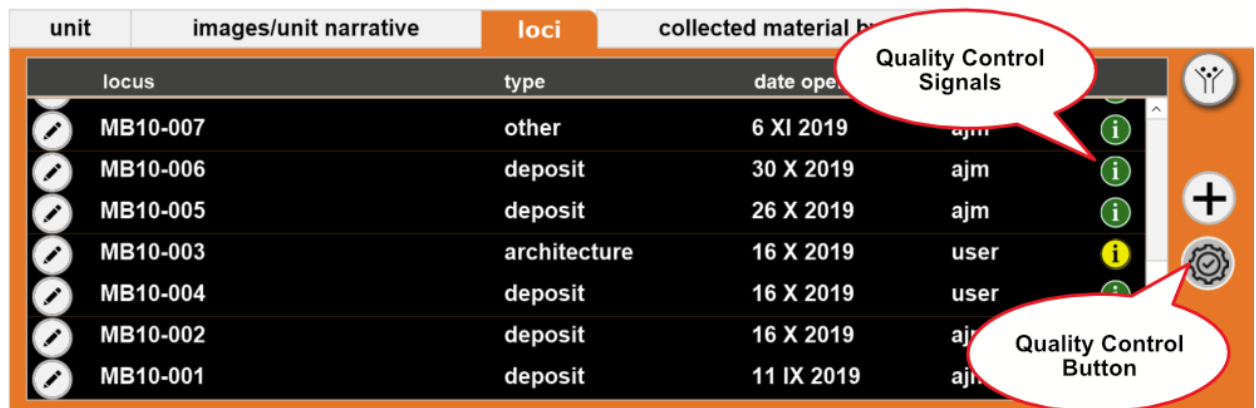
- Don't forget to upload and synchronize your recording app after the import. Only after synchronization will the quality control rules be distributed to all devices on next preparation.

How do I shrink the file size to make uploads and downloads faster?

You can use File Picking to decrease the size of workstations to make both uploads and downloads faster. File picking rules are configured for different recording groups, which allows you to set specific rules for workstations going to excavators and registrars, for instance. File picking allows you to set image resolutions to high, low, and dummy (in which case placeholders rather than images themselves would be transferred to the workstations). These file picking rules can be applied to specific contexts, record types, tags, and dates of record creation or modification. At this stage the UI that controls File Picking is not designed for the general public. So please ask Lutz if your filemaker database downloads get too slow or FileMaker gets into trouble processing your large amounts of images while recording. That's when you want to use this feature. Provided you have at least minimal internet access we can implement this for you mid-season if needed.

Will my team be able to access data and change records once we are no longer in the field?

Yes, if you want them to.

Once you are back from the field the development team will migrate your data from your local server to your online server; the same users will be there as were on your local server. Then dispersed team members will be able to download workstations, work in them, and upload, from wherever they are. The online server is much slower than the local server, so you should import all the images you want in the system before handing your stuff off for migration.

How do I find images?

You can find and use images without having a downloaded workstation or Filemaker installed.

In kiosk in the File Repository (accessible through the hamburger menu if you are in the Hub), you can find images by searching for their identifiers (including units, contexts,

collected material numbers, or any other type of identifier your project is configured to use), descriptions, tags, and/or record types. Thumbnails of images that match your search will be shown. If there are more images than fit on one page, they are paginated. Context information, date, and description can be seen below the thumbnails. Clicking on a thumbnail will bring the image and its information up in a popup where you can edit the information and download the image.

Some tags are automatically applied and allow you to search for sets of images you might want to see together. These include the tags "import" with a date and time stamp. This allows you to easily find all the images you last imported.

I have broken files in my File Repository. What's up?

A broken file was usually a duplicate created when the same image was used twice. In synchronization the contexts of both instances in which the image was used were applied to the image; it can be found searching for either context. You can delete the broken file without losing any information. This should be fixed by now, however, so if you see broken files please file a GitHub ticket and let the developer know what happened immediately so that he can make sure you are not losing data.

How do I deal with drawings made on paper?

You can use Kiosk to manage drawings that you have made on paper and not yet inked. This allows you to know what has been drawn and to produce a list of drawings even if those drawings are not yet in final electronic form and even if the drawings are not specifically linked to a recording context. For instance, you might have an artist making drawings of special finds where there are many small drawings on a single sheet of paper. Some will be inked at home, some may never be inked. The sheet of drawings as a whole does not belong to any single archaeological context. You could scan (or use the iPad to photograph) each individual drawing to add to its relevant context, but you would still want to manage the drawing as a sheet of paper. Scan or photograph the whole sheet, not from within the recording system. Upload it through the File Repository. Click on the image to open its dialog. The field "file name" allows you to attach a drawing name, such as "Drawing Sheet 23". Any image with a file name receives that file name when downloaded, and the file name can be mapped to a report. Only unique filenames are permitted by Kiosk. Filenames can be seen in the recording system for files that have a context, but can only be added or altered in Kiosk.

What types of files can I manage in the File Repository?

You can manage all kinds of files with Kiosk, but you can only see image files. Files associated with known contexts will be incorporated into the recording system and sent to the iPads. For instance, if you have a locus FA-004 and you upload a file to the File Repository and attach it to the context FA-004, it will show up on the iPads as an image of that locus after the next download. Note that not all file types would be transported to the ipads. By default Kiosk only allows these file types: nef, tiff, tif, jpg, jpeg, gif, png, bmp, raw, pcx, cr2, svg, pdf, heic to go to an ipad. And files larger than 30MB will be kept from the iPads as well. However, even if they are not sent to the iPads these types of files that are directly assigned to archaeological contexts can be found by searching for those contexts.

You can create new files of any type directly on the iPads, they are allowed to be of any size, and they will be imported into Kiosk if they are used in the recording system. Just keep in mind that large files will slow down the upload and import into Kiosk.

Some file types are unable to show thumbnails in the File Repository (most notably .ai). The files themselves can be uploaded and downloaded and information, including archaeological context, can be attached to them, but no thumbnails will be visible.

Can I manage photo models in Kiosk?

There is not currently a way of dealing with photomodels in Kiosk. We recommend storing your photos and resulting models for 3D modeling elsewhere; having that number of unprocessed images associated with a context will seriously clog your recording system without being of use to you. Consider exporting a gif or such from a model if you would like to have a record in the File Repository of which models have been shot and run.

How do I upload images to the File Repository?

Images made outside the recording system can be added to the File Repository through importing them. You can decide if you want those images to be in the recording system; to be so, they need to be assigned to a known identifier in the system (so, a unit, context, or collected material that already exists). Any image you import, whether assigned to a context or not, can have information added to it after the import. For

instance, you might tag images by the people in them and thus be able to search by team member for candid shots. You can also add contexts after import, provided the context is one known to the system.

There are multiple ways to import files based on how many you have, where they are, and what strategy you want to use to recognize contexts. First, how many files are there? For a small number of files (10 or fewer) that are not sequence-QR code photos (see below) you can use the "bunch" import. If you have shot 200 SLR photos during the day you want to use the "ton" import and let it run while you have dinner or so; if you have used sequence QR codes for any of those images you want to run that option even before you run the "ton" import. Sequence and ton imports require that the server have direct access to the images in question; they is only available when you use a local server.

File Import is accessed from the File Repository. For smaller numbers of images you do not need to have the images accessible to the server directly, which means that you can upload them from any recording device. Choose "bunch" from the file import menu and navigate to the images you wish to upload.

To import a ton of images, start by putting your images where you can find them. This is different for a server that runs on a PC or one that runs on a virtual machine. For a PC server you can either move the images onto the machine itself or use an SD card. If you have an SD card with images on it, plug that into the server machine and see what drive it is named (such as e:\). The easiest way to do this is to make sure that there is nothing on the SD card except the images you wish to import. Once you've plugged your SD card in, go to the hamburger menu while in the File Repository and choose import files. If you have any Sequence QR code photos, run that option first. What this will do is scan through all of the images on your SD card, recognize when two similar QR codes bracket a bunch of images, and import all the images between those brackets with the assignment of the identifier given in the QR code. After doing this, both the imported images and the bracketing QR code images will be moved into a "done" folder.

If you have used other strategies as well and have images left after that import, go back to select "import images" again and this time choose ton. The file path should be the same as for the sequence import. Choose if you want to import all images or only those that have contexts. (Candid images will come in without a context in this case, and will be in the file repository but not given to the recording system.)

Subsequent imports will remember your path and the process will be more straightforward.

If you have a virtual machine running your server, you cannot simply connect an SD card to your laptop and import from that, as the server will not recognize the SD card as a drive. Detailed instructions can be followed in a video tutorial. Basically, you can plug in your SD card and copy its contents to the backup harddrive. On the Mac partition you can find the backup drive called something like USTP backup. Plug your SD card reader in and open that on the Mac. Move whatever files you want to import onto the backup drive. Consider setting up a folder called "image_import" or some such. (You can empty that after import and keep it clean so that the path is remembered.)

The backup harddrive is a known path for the server; it is configured as drive z:.

While the images must be accessible to the server directly, you can issue the commands to Kiosk to import images from any device connected via the local network, not just from the server machine.

In File Repository, go to the hamburger menu.

Click "Import images"

Click "sequence" or "ton" as above.

If using "ton", configure your import to decide how to get the context of images. You can run multiple methods at once.

For any import, you want the system to automatically attach any image that is of a context (be it a unit, locus, object, whatever) to that context in the recording system. To do this, the system needs to recognize that there is an identified context already in the system that it can also see attached to the image. This is a little more legwork on the front end but it will be one of the most helpful features for most archaeologists. You will not have to open and add metadata to individual files in order to have them attached to and searchable by context.

There are multiple ways to get the identifier of an image attached to it, and when you perform your import Kiosk will ask you to choose a method or methods. The most straightforward is to have a QR code with the identifier in the image itself. If the image has a QR code with a known identifier in the image and you have selected QR code recognition during the upload, the images in the import will be read by Kiosk and assigned to the proper place. (See below "How do I use the iPad as a photoboard" in the field recording section to get QR codes in your photos in the first place). The sequence QR codes are a bit more complicated for the system but much more failsafe.

Prior to sequence QR codes being implemented in Summer 2023, there were multiple additional means of getting identifiers attached to images. We suspect you will not need these any longer, but they are still kicking around if you do or if you are importing older images from before this new feature.

Other means of getting identifiers onto images include either setting a default for the entire import, or using file names on your images that are identifiers. But that would assign the same archaeological identifier to all imported photos and that is rarely what you want.

A better choice is using either the file name or the file's parent folder to recognize the identifier. If you import a file using the "context from operating system file" option the filename must start with the context and may have an additional description but separated from the rest by a space: a filename like "mb10-009-26.jpg" is okay and so is "mb10-009-25 my description". In this instance "mb10-009-26_1" would not be correct if there is not an archaeological identifier "mb10-009-26_1".
If you use the option "identifier from operating system folder" you can move all files that belong to the same identifier to a folder. If the name of that folder is a known archaeological identifier the system will assign it to all those files. In that case it does not matter what filenames the files themselves have. This option allows for a quick way of assigning files to identifiers if you have many files per identifier.

Tip: You can mix and match "context from operating system file" and "identifier from operating system folder". If a file has a known identifier as its filename it will be imported with that identifier even if the file is in a folder named after a different identifier.

You can decide if you want all file extensions or only certain ones (jpgs, NEFs, etc) imported.

Click the check button to run your import.

Once it is done and you accept that it is done you will see only those most recently imported photos in the File Repository so that you can check your import. Clear the tag search of the import tag to go back to seeing all images total.

Your import settings will be remembered (by user), with the exception of the exif data description checkbox.

After the import:

Note that imports move files that have been successfully imported into a subfolder "done" on your local drive. That way you can easily look at the remaining files that the import was not able to identify and decide what to do with them.

UPDATE! How do I use sequence QR codes for SLR photography?

If you are running a system from June 2023 or later you now have the option to use sequence QR codes. This is a different strategy than using the iPad as a photoboard and is preferable in cases where the glare or shadow or distance make a computer readable photoboard impractical. It is also simply easier.

What this does: all images taken in a sequence that is bounded, in front and back, by images of a QR code with the context embedded will be understood by Kiosk as belonging to that context. Sounds complicated. Is simple.

- In the recording system go to the trench/context/collected material you wish to photograph.
- Create a QR code by clicking on the hamburger menu in the upper left and choosing the QR code button.
- Choose "QR Code to Mark a Sequence"
- Make sure you can see the whole square QR code (might need to turn your iPad to be in landscape orientation).
- Take a photograph just of the iPad.
- Now shoot as many photographs as you want of that trench/context/collected material.
- Shoot another photograph of the QR code. (If your iPad fell asleep or you did something else in the meantime it's not a problem; recreate the same code.)
- Close the QR code screen.
- During the import of photographs whoever is doing the import should run them through the sequence import. Voila. All those photographs sandwiched between those QR codes will now be in the recording system in their proper place.

NOTE! You have to synchronize the day's data before you do an import if your import will include any QR codes with identifiers that were created that day. Kiosk cannot contextually import an image until it knows the context in question.

I want to encode my archaeological identifiers in my file's names to import them. But they have special characters that are not allowed for filenames. What can I do?

The file import of Kiosk version 1.5.6 and up supports a feature called "identifier substitution". It allows you to translate what the import takes for an identifier in a filename or directory name (or qr code) into an actual archaeological identifier known in your database. Let's assume you have a unit in your recording system called "123\a". To import a file so that it gets connected to the recording data of that unit you would have to name the file "123\a.jpg". But that is not a valid filename (at least not on Windows, and Kiosk is running on Windows).
To import this you could name the file 123__a.jpg (two underscores here, but you could choose whatever you wish) and tell the file import to replace double underscores (or whatever you chose as a pattern) with a backslash.

To achieve this, first name your files (or folders depending on your strategy) according to your pattern, so the unit would be 123__a.jpg and the loci (contexts) of that unit would be something like 123__a-001.jpg, 123__a-002 etc. Make sure that your pattern only occurs where it has to be replaced with the actual character used by the unit.

When you start the file import you can select the checkbox "substitute patterns in identifiers" on the first page of the import (this does not exist in sequence import). When moving to the next page you can enter the pattern that you want replaced and the text you want to insert wherever the pattern is found in an identifier. In our example we enter the double underscore __ as the pattern and the backslash as the replacement text.

That's it. If Kiosk finds a file named "123__a.jpg" it will recognize the filename as your archaeological identifier "123\a" and connect the file to the recording data. The same will work for a file "123__a-001.jpg", it will be connected to locus"123\a-001".

This is the simplest way to use identifier substitution. In fact the tool is more powerful, so get in contact with Kiosk support if you have a case that you cannot solve with the simple version.

How often should I upload images?

We recommend uploading every day. This has two benefits. First, images attached to contexts are then available in the field for consultation during excavation. Second, if a QR code is unreadable or an image otherwise needs attention, you are much more likely to be able to figure it out and get it assigned to the right context or properly tagged if you do this in manageable chunks near the time time the images were shot. Waiting until the end of the season is, we can say from experience, not in your own best interests.

How do I get images from Kiosk to the recording system?

If you have candids or other types of images without contexts in the File Repository but you would like them to go back to the recording system, you can tag them as "map" in the File Repository. A file picking rule ensures that those images tagged "map" will get to the recording system once the workstation has been prepared and downloaded again. Once in the image gallery in the recording system, those images can be added to different places in the recording (such as maps, but also units, contexts, etc.).

Can I delete images from my SD card after uploading them?

Yes. Once you have backed up your File Repository you can safely delete any images from your SD cards, and from any folders you moved them to in order to upload. Or if you are importing from an SD card you can just keep them hanging around in the "done" folder on your SD card. Kiosk knows not to read them again from that folder and they will not slow down future imports.

How can I add information to image files in the File Repository?

Once you have found an image and clicked on it you can add additional information, including assigning it to additional contexts or providing a context-independent description; you can also tag images in the File Repository. (This is unrelated to locus tagging in the field recording.) Only contexts that already exist in the recording system can be added. If this is done, the image will appear in that context in the recording system after the next synchronization cycle.

How do I download images for my final report, presentation, or publication?

Images can be downloaded from the File Repository. Find the image(s) you need as above. Download by clicking on the downward arrow on the top left of the image in the popup. Choose the resolution to download.

Wait, I need to give an electronic copy of my report to the government and I need file names for photos that can be referred to in my report. My downloads are all just labeled with the context. What can I do?

See above, "How do I deal with drawings". Any image in the File Repository, not just drawings, can be given a filename that is then the file name used in the download. This must be unique, and so can be referenced in a report. If your project utilizes the reporting function, filenames can be mapped in reporting.

I want to tag a large selection of images as possible ones to download, and then choose amongst my selection later. Can I do that?

Sure. Tag the photos you are considering, then when you are ready to choose, search in the File Repository by that tag so you only return those images. You can also tag things in bulk. If you have a large number of images in your search results, for instance all of the images of an excavation unit, you can mark the thumbnails of those you might be interested in with the star button visible just below the image. Once you have starred all the images you wish to consider, click the tag button on the File Repository menu bar below the search fields. You will be able to choose from existing tags or make a new one.

What are reports and how do I use them?

Reports are structured outputs of your data that meet criteria that have been predetermined. For example, if you dig in Italy and are required to turn over context

sheets that are formatted in a particular way at the end of the season, Kiosk can do that. You enter your data using Kiosk's own interface, as optimized for the iPad. But you export those data mapped onto a form that takes the shape of the context forms needed by the government. Or you may want to export collected materials records by context as an attribute table so that you can analyze density in your GIS, where the same contexts exist as shape files.

How do we get there?

Multiple steps.

First, you need to make a PDF (or Excel sheet) showing Lutz what you want the report to look like and to include in terms of data. There is not currently a way to do this yourself; he will need to hand-make your report and then will give you the ability to install and run that report.

How do I install and run a report on Kiosk?

See the video tutorial for visuals.

Whenever we create a new report or update one that you have used previously, you will get a bunch of files from us.

Go to your Kiosk Hub.

Create a new report dock.

- Hamburger menu, new dock, reporting dock: now you have a popup.
- In the popup give the dock an ID and a descriptive name (ie: "context_list" and "list of contexts")
- Before you leave the popup, attach the files we have sent you. There is a drag and drop box at the top of the popup for this purpose.
- Now choose those files in the dropdown menus in the popup (if they have not been automatically chosen) for the reporting definition, the mapping instructions, and the template for the report. We will have given you instructions as to which is which; the first two are likely yml files, sometimes the same one, and the third is the formatted file that will get your data, perhaps a PDF or an xlsx file.

Now you can run that report.

- Click on the dock. You will get a popup that looks different depending on the nature of the report; it may ask you to define the boundaries of the report, for instance a list of contexts may ask you which trench you want, or what date span you want.
- The dock will change to "Ready to download" when the report is done.
- Click on the dock and choose "download".
- You will be taken to the file manager.
- Download via the download button under "actions" on the left.

If you get an update from us (more files for you) for an existing report you can click on the dock you previously created and click "more options" and "report setting" so you can import the new files, update the dock by selecting those files as above in the dropdowns, and then re-run the report.

How do I query my data?

This function is in development and is not rolled out yet beyond two basic demo queries (you might not find it at all on local servers, yet). To access this, in kiosk go to the hamburger menu and choose query and view data. Choose between options there. PLEASE: we ask for feedback from users as to real queries you would like to perform of your data. We can currently do bespoke data queries for you even while you are in the field. We will build into future releases the ability to repeat that query on your own.

Please help us build this component of the software by telling us what you want to know from your data and how you want to see it (tables, graphs, etc)!

How do I connect my context data recorded in this software to my GIS?

Right now this is hypothetical; no one has ever done it. However, it should be possible provided that the context numbers you generate in the recording software are also applied to entities in the GIS. For instance, if you create a shape file for a context/locus/stratigraphic unit in your GIS, give it the same number as the context has in the recording system. This should enable you to export data from the recording system as an attribute table that can be brought into GIS. Likewise, if you're taking a point on a special find in the trench, number that point with the system-given number for that special find. As long as things have the same identifiers in the recording system and the GIS it should be possible to bring them together for spatial analysis. If you are

ready to do this, please contact the development team so they can write you a specific report.

How can I connect to the internet using a Virtual Machine?

First of all: You should not run the Kiosk Server and connect to the internet at the same time.
If you are running VirtualBox on a Mac this is how you switch from running a Kiosk server to using the internet:
Shut down the virtual machine and quit VirtualBox. Only if the virtual machine is not running can you unplug the ethernet cable from the little router (otherwise MacOS tends to try to get the internet through the router).
Now you can switch on the wifi in MacOs and connect to a wifi or whatever other internet connection is available to you.

When you are done, deactivate the network connection you used to get the internet. So. e.g. switch off wifi on the Mac.
Now you can plug the ethernet cable back in and it cannot hurt to restart the Mac.
When it is up again make sure the wifi stays off and the only network connection you have is the ethernet cable that connects to the little router.
Now you can start your virtual machine again.

On Windows it is easiest to just click on the Wi-Fi icon in the Taskbar Notifiation Area (lower right corner of your screen) and disconnect from the wireless network.
By the way: NEVER connect the computer running the virtual machine to your local kiosk Wi-Fi.

How to eject a usb hard drive on Windows PROPERLY

All remote drives should be ejected before you detach them physically from the computer. While on a Mac you do that with a right click -> eject, on Windows it is strangely complicated and unreliable:

1. In the taskbar notification area you find this symbol:
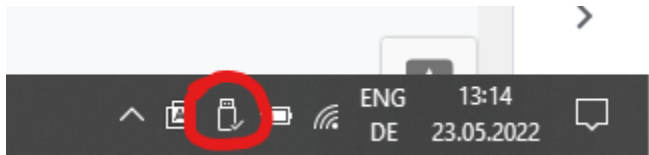
2. Right mouse click on it and after what sometimes is quite a wait you'll see all of your connected USB drives with the option to eject any of them.
3. Eject your drive and hope it works. If it doesn't you will get an error message that the device is still in use. Otherwise you'll get a message that the hardware can now safely be disconnected.
4. If you get the error, first of all make sure that there are no apps that still need the drive you are about to disconnect.
5. Close them if there are any and try again with 1. If there are none, you need Windows' Disk Management: Press Windows Key + R and then type 'diskmgmt.msc'. (you can also open the start menu and type 'diskmgmt.msc').
6. In the disk management find the disk that Windows did not want to eject, right click on it and choose "offline":
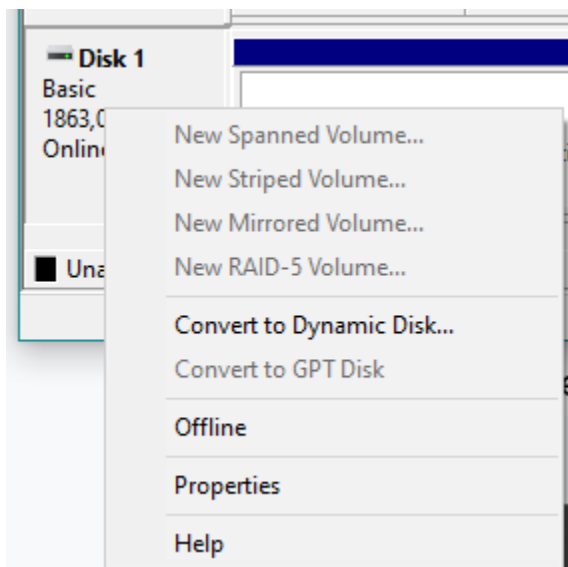
7. Then another right click and this time choose "online". So you manually unmounted and mounted the drive again.
8. Now you can close the disk management and start with 1. again. Now it should work.

Is there an easy way to check what the local time zone setting is and how to fix it? I'm getting an error message "this database has been prepared in the future" and I do not see an easy work-around.

This should not be an issue when you are actually in the field because all devices and the server will be (or rather you have to set them to be) in the same time zone. If you are encountering this in the field, check your devices to make sure they are all in the same time zone!

However, if you are not in the field but have migrated your data online and are encountering this problem while your team is dispersed, you do have some steps to follow. You need your workstations to know where they are in time relative to the server because synchronization relies on time stamps.

So, in this situation, you have to tell Kiosk that your workstation(s) are in a different time zone than the server. For instance in Chicago the time zone during CDT is GMT-5. This is how you set it:

- Go to the Hub in Kiosk and make sure that your dock is in state "synchronized - needs preparation", because it is only then that you have access to the dock's options.
- Click on your dock, choose "more options" and "edit workstation".
- enter GMT-5 as time zone and leave with Ok.
- Do this for all the workstations that are not in the same time zone as the server (which is located in Providence, RI), setting them all to their local times.

Now you can prepare the dock or docks again, download, and when you enter the filemaker db this time you should get more of a warning message that informs you of the same time zone difference but lets you in.

Once you are in the field again, don't forget to remove the time zone setting from your dock (or use a different dock).