

# IU REDCap 14.0.x

## Release Notes

### New Features:

#### New feature: Background Data Import

- In the Data Import Tool, users may now alternatively import data using an asynchronous background process (as opposed to the existing real-time process). The background process is better for large data files. The background process will email the user after the data file has been fully imported, and the email will note any errors that may have occurred during the import process.
- During the background data import process, which is performed by several simultaneous cron jobs, each record will be imported one at a time. If there is any error with a record being imported, none of that individual record's data will be imported, after which the user will be able to view all the errors with the option to re-download the records/data that failed to import, thus allowing the user to fix the data and attempt to import it again.
- Note: The background data import works with the "Reason for Change" project-level feature, which requires a reason for any changes made to an existing record.
- The feature is currently only available in the user interface (not in the API), but it may be available for the API in the future.
- If the background data import has begun, the user who initiated the import (or an administrator) can cancel the import process at any time. However, any data that was imported by the import process prior to it being canceled will not be undone after it is canceled. All changes made by the process up until cancellation are permanent.

**New feature: Longitudinal functionality for MyCap-enabled projects** - In previous versions, longitudinal projects could not utilize MyCap (the feature would be disabled automatically). Now with the release of the new MyCap mobile apps on Android and iOS, longitudinal functionality is possible and is supported in the new MyCap mobile app. For any projects currently using MyCap, there will be a "transition" button on the MyCap Participants page that will allow the users to transition the project and any existing participants to use the new MyCap mobile app (note: this transition process is completely optional and not required unless wanting to use longitudinal functionality and other new MyCap features). The older MyCap

mobile apps will still be available and updated in the Apple App Store and Google Play Store for the time being.

**New action tag: @MC-PARTICIPANT-JOINDATE** - This action tag is a MyCap annotation that can be used with Text fields with date/time validation. When using this action tag on a field, the field will capture the install date/time of the MyCap participant whenever the participant joins a project via the MyCap mobile app. NOTE: This is used only for the MyCap mobile app. The field's value is not generated when viewing the data entry form but only when the MyCap app is making a call to REDCap when the participant joins the project. Additionally, while this action tag can be added to a new field in already-existing MyCap projects, a field with this action tag will be auto-added to any projects where MyCap is enabled in the project after the fact and for any new projects created using the MyCap project template.

**New action tag: @MC-PARTICIPANT-CODE** - This action tag is a MyCap annotation that can be used with Text fields. When using this action tag on a field, the field will capture the MyCap participant's participant code whenever they join a project via the MyCap mobile app. NOTE: This is used only for the MyCap mobile app. The field's value is not generated when viewing the data entry form but only when the MyCap app is making a call to REDCap when the participant joins the project. Additionally, while this action tag can be added to a new field in already-existing MyCap projects, a field with this action tag will be auto-added to any projects where MyCap is enabled in the project after the fact and for any new projects created using the MyCap project template.

**New action tag: @SHOWCHOICE** - When applied to a multiple-choice field, this action tag will hide all choices except for the ones listed in its argument. This action tag is useful if you wish to only show a subset of choices depending on some logic (e.g., depending on data access groups) via the IF action tag. The format must follow the pattern @SHOWCHOICE='??', in which the coded values should be inside single or double quotes for the choice(s) you wish to show. If more than one choice needs to be shown, then provide all the coded values separated by commas. For example, to show the choice 'Monday (1)', you would have @SHOWCHOICE='1', but if you wanted to additionally show 'Tuesday (2)', you would have @SHOWCHOICE='1,2'. NOTE: The @SHOWCHOICE action tag supports piping into its argument - e.g., @SHOWCHOICE="[my\_checkbox:checked:value]".

### **New text string functions**

- **replace\_text** (haystack, search, replace) - Replaces parts of a text value with a specified replacement text value - Finds text ("search") inside another text ("haystack") and replaces all found occurrences with the given text ("replace"). For example, assuming [field1] has a value of "Paul Taylor, Rob Taylor", `replace_text([field1], "Taylor", "Harris")` would result in "Paul Harris, Rob Harris". Note: This function performs a case-sensitive replacement. Additionally, you can search for line breaks (e.g. in Notes fields) with "\n".

- **concat\_ws** (separator, text, text, ...) - Joins the text from multiple text strings with a separator - This works exactly like concat but inserts the separator in between each concatenated item. For example, concat\_ws(" and ", [veggie1], [veggie2], "Tomatoes") might result in "Peas and Carrots and Tomatoes".

### **New math functions**

- **mod** (dividend,divisor) - Modulo - Returns the remainder of the (integer) division (modulo) dividend/divisor. Both values must be integers. E.g. mod(10,4) will result in 2 because 2 is the remainder of 10 divided by 4.
- **exponential** (number) - Exponential of e - Returns "e" (Euler's Number) raised to the power of a number:  $e^x$ . Note: The value of the exponent x must be a number. E.g. exponential(1) will return 2.718281828459045.

### **New special functions for date/datetime fields:**

- year() - Returns the year component of a date/datetime field - e.g., year([dob]).
- month() - Returns the month component of a date/datetime field - e.g., month([visit\_datetime]).
- day() - Returns the day component of a date/datetime field - e.g., day([visit\_date]).

### **New piping parameters for date/datetime fields:**

- :year - Returns the year component of a date/datetime field - e.g., [dob:year].
- :month - Returns the month component of a date/datetime field - e.g., [visit\_datetime:month].
- :day - Returns the day component of a date/datetime field - e.g., [visit\_date:day].

### **New page-level caching feature: "Rapid Retrieval"**

- REDCap now implements an automatic, transparent form of page-level caching (known as "Rapid Retrieval") to help speed up certain pages that are known to be slow. Currently, Rapid Retrieval operates only on reports and on the Record Status Dashboard page. When a cache is being utilized, a note will appear at the top of the page that says "Page speed was boosted using Rapid Retrieval". The Rapid Retrieval cache can be cleared for an entire project by an administrator using the "Clear the Record List Cache" button on the Project Setup->Other Functionality page, in which the button text now says "Clear all record & page caches."

## Improvements:

**Improvement:** The Data Import Tool page now provides options in Step 1 to download the Data Import Template with alternative delimiters, such as tabs and semicolons.

**Improvement:** New background process that will help prune abandoned/zombie database processes (e.g., long-running queries that continue running on the database after a user has left the page on which the query is being run) that might decrease the overall performance of the database server. This process is performed every couple minutes by a cron job. This may or may not result in a noticeable database performance improvement.

**Improvement:** The full file name of a file uploaded to a File Upload field will be displayed when a user hovers over the file download link. This is helpful when the file name is very long and is thus not displayed in full on the page.

**Improvement:** When viewing the Survey Access Code dialog on the Public Survey Link page, users may now click a button to copy the QR code to their clipboard. Additionally, users may now click the QR code to download it or click a link below the QR code to download it in the higher resolution SVG format, if desired.

**Improvement:** Enhancements to the Codebook page - For longitudinal projects, a table of all events names is displayed near the top of the page. If events and/or missing data codes exist, the table of them may be included in or excluded from the page printout via a checkbox at the top right corner of their table. Also, in the printout of the page, the time and project title are now displayed.

**Improvement:** The MyCap Help document has been updated, and a new Transition Guide has been added to help inform users regarding the process of transitioning to the new MyCap mobile app from MyCap Classic (the guide is linked in the popup that notifies users about transitioning). Additionally, a new PDF displaying a list of all MyCap app features has been linked in several places where MyCap documentation is located, in which the PDF compares the features of the new MyCap app with the previous MyCap Classic app.

**Improvement:** When setting up recurring Alerts & Notifications, users can now set the repeating interval value as a number with a decimal (in previous versions, the value could only be an integer). This will allow users to approximate the interval of a monthly recurring alert as 30.44 days since it is currently not possible for recurring alerts to be scheduled on exactly the same day and time each month. To help users, a note has been added in the repeating survey section of the alert setup dialog to inform them how to approximate a month as 30.44 days.

**Improvement:** When using the Field Bank in the Online Designer to search specifically within the NIH CDE Repository, a new checkbox option exists in the search utility called "Search NIH-Endorsed CDEs". If this search option is checked, REDCap will search only for fields that are "NIH-Endorsed" in the NIH CDE Repository. NIH-Endorsed CDEs have been reviewed and approved by an expert panel, and meet established criteria.

**Improvement:** When using Multi-Language Management, it is now possible to preset the language of a survey by supplying the URL parameter "`__lang`", which must be set to a valid (active) language id (and is case-sensitive).

Example: [https://redcap.vanderbilt.edu/surveys/?s=ABC123&\\_\\_lang=es](https://redcap.vanderbilt.edu/surveys/?s=ABC123&__lang=es). When used, this will override both a survey respondent's previous choice (stored in a browser cookie) as well as the language preference field. The `@LANGUAGE-FORCE` action tag will still take precedence, though.

**Improvement: Survey Queue Import/Export** - Users can now export and import their Survey Queue settings via a CSV file in the Online Designer. After clicking the "Survey Queue" button on the page, it will reveal a drop-down list of options to 1) edit the SQ, 2) download the SQ as a CSV file, or 3) upload the SQ as a CSV file. This new feature will make it much easier for users to make modifications to their Survey Queue when they have many instruments and/or events that they wish to utilize in the SQ.

**Improvement: Form Display Logic Import/Export** - Users can now export and import their Form Display Logic settings via a CSV file in the Online Designer. After clicking the "Form Display Logic" button on the page, it will reveal a drop-down list of options to 1) edit the FDL, 2) download the FDL as a CSV file, or 3) upload the FDL as a CSV file. This new feature will make it much easier for users to make modifications to their Form Display Logic when they have many instruments and/or events that they wish to utilize in the FDL.

**Improvement:** The rich text editor has been updated to TinyMCE v6.

**Improvement:** The "Help & FAQ" page has been updated with new content (thanks to the FAQ Committee).

**Improvement:** New MLM-related Action Tags - If using Multi-Language Management, the `LANGUAGE-SET` action tag can now be selectively applied to data entry forms via `LANGUAGE-SET-FORM`) or surveys via `LANGUAGE-SET-SURVEY`.

**Improvement:** When using MyCap in a longitudinal project, a more streamlined process is provided for helping users add new active tasks and designate them for specific events in the project. This process is now much less confusing and less disjointed than in previous versions.

**Improvement:** The `@HIDECHOICE` action tag now supports piping into its argument - e.g., `@HIDECHOICE="[my_checkbox:checked:value]"`.

**Improvement:** Improved user interface elements on the Codebook page. A new instrument table lists instrument names and also event designations, if longitudinal. The instrument and event tables are now collapsible. Additionally, the tables denote if an instrument is a repeating instrument or is designated to a repeating event, and the event table denotes if an event is a repeating event. All tables on the page are now collapsed by default.

**Improvement:** For Descriptive Text fields on the Codebook page, the attachment's filename and its display format are now listed on the page if it has an attachment, and the media URL and its display format are now listed on the page if it has a media URL.

**Improvement/change:** For projects with the "Delete a record's logging activity when deleting the record?" setting enabled on the Edit Project Settings page, a request to the API Delete Record method may now include the parameter `delete_logging=0` if the user wants to prevent the record's logging activity from being deleted when the record is deleted. If the setting is enabled in the project, then the default value will be '1' for `delete_logging` (to maintain the existing behavior in previous versions), and if the project-level setting is not enabled, the default value will be '0'. If the project-level setting has been enabled, this API parameter must be provided with a value of '0' in order to prevent the record's logging activity from being deleted when the record is deleted.

**Improvement:** The Rapid Retrieval caching feature is now utilized for data exports and also for the API methods Export Records and Export Report, whereas in previous versions Rapid Retrieval was only utilized on report pages and the record status dashboard page.

## Changes:

Change: In longitudinal projects with Scheduling enabled, the "View or Edit Schedule" page will no longer render the record drop-down list of already-scheduled records on the page if the drop-down would contain more than 10,000 options. This is to prevent the page from becoming very slow for projects that contain lots of records that have been scheduled already. Users will still be able to view the schedule of individual records on the page though.

Change/improvement: The favicon was updated to a higher resolution image.

Change/improvement: When using Multi-Language Management and exporting CSV files of the MLM translations, a byte-order mark (BOM) is now added to all CSV files to allow them to be opened successfully in Excel.

Change/improvement: When executing Data Quality rules, the Logging page now lists the specific DQ rule by name that was executed in the logged event, whereas previous versions merely stated "Execute data quality rule(s)" generically in the Logging.

Change/improvement: If a longitudinal project contains one or more records, and a user moves a field to a different instrument via the Online Designer, a warning will be displayed saying that moving fields to other instruments might potentially cause the orphaning of data, in which it tells the user to double-check their instrument-event mappings to ensure that no orphaning/data loss has occurred. And if it has, it tells the user that they can move the field back to its original instrument to restore any orphaned data.

Change/improvement: Slight performance improvement when loading the Logging page in some projects.

Change: A note was added to the Smart Variable documentation, specifically for the charts, to denote that when using multiple fields in the chart, the data used in the chart will be naturally grouped from the same event and/or repeating instance. For example, if you're plotting age vs weight in a scatter plot in a longitudinal project, it will only create points in the plot where both the age value and weight value exist on the same event. If one or both values are missing from a given event in a record, then no point can be plotted for that given record.

Change: In Multi-Language Management, the "Default" language term has been renamed to "Base Language" on the MLM setup page and in various documentation for improved clarity regarding the purpose and function of the Base Language in MLM.

Change: When using MyCap in a project, the instructional text in the individual "Invite Participant" popup has been modified slightly to cater better to whether the project has been transitioned to use the new MyCap mobile app or not.

Change/improvement: When adding/editing a Descriptive Text field in the Online Designer, the text in the "Optional file attachment, image, audio, or video" section of the popup has been modified to instruct the user that the "Embed an external video" feature can be used for more than just videos but for websites and surveys too (i.e., the "Magic Box" feature, as some call it). The text has been changed to "Optional media to embed or attach:" and "Embed media (video, website, survey, etc.)", respectively. Other relevant text in the popup has also been modified to refer to "media" more generically rather than "video".

Change: When using MyCap, some REDCap server configuration info is now included in the MyCap configuration JSON that gets pulled by the MyCap mobile app when refreshing the MyCap configuration on the participant's mobile device. This server info will be stored on the mobile device and used only for troubleshooting purposes when any issues occur in the mobile app.

Change: When using MyCap in a project, in which the project has not been transitioned to use the new MyCap app (but instead is using the MyCap Classic app), if a user exports the project XML file to create a new project on the same server or on any server on REDCap 13.11.0, that new project will also be using the MyCap Classic app. In previous versions, the new project would always be using the new MyCap app, which could cause issues in specific situations.

Change: When copying a project on the Copy Project page, if the project being copied contains one or more Dynamic SQL fields, a notice will be displayed near the bottom of that page to inform the user that they may want to consider if the SQL query for the field(s) needs to be modified in order to work correctly in the new project.

Change: In a MyCap-enabled project, the MyCap Invitation Text has been updated for projects that are not yet converted to the new MyCap mobile app. This text change is to reduce confusion regarding the transition from the MyCap Classic app to the new app.

Change: When downloading the Survey Queue settings via CSV file, the CSV filename now contains the project title and timestamp of the download.

Change: When viewing the "View or Edit Schedule" tab on the Scheduling page when more than 10K drop-down options would be displayed in the already-scheduled drop-down list of records, in which the drop-down will display at all, the text on the page has been modified for better clarity since it was confusing regarding how to view an already-scheduled record in this situation.

Change: The PID number for a project is now displayed on the My Projects page for all user types, whereas in previous versions it was only displayed for admins (users with some kind of Control Center access).

Change: The length of time in which the record list cache will be automatically reset has been increased from 1 week to 2 weeks. This was done because the record list cache has seen years of stability and can now be trusted to be accurate for longer periods of time. This change will reduce how often the cache will need to be rebuilt for an active project, which should improve overall system performance.

Change: Some help text was added to the Form Display Logic and Survey Queue instructions to inform users that their conditional logic will be evaluated at the record level and not within the context of an event or a repeating instance, which means that it is not possible to use relative instance or relative event Smart Variables - i.e., those with the name 'current', 'next', or 'previous', such as [next-instance] or [previous-event-name].

Change/improvement: When using the eConsent Framework on a survey, the certification page now says "Working..." until the inline PDF finally loads on the page. This will reduce confusion for participants in case the PDF takes an abnormal time to load.

