

## REDCap Flex Upgrade Changelog – May 25, 2021

### New Features

- New action tag: @SETVALUE - Sets a field's value to static text or dynamic/piped text whenever a data entry form or survey page is loaded, in which it will always overwrite an existing value of the field. The format must follow the pattern @SETVALUE="????", in which the desired value should be inside single or double quotes. A field with @SETVALUE will always be read-only, thus its value cannot be modified manually on the data entry form or survey page. For text fields, you may pipe and concatenate values from other fields in the project - e.g., @SETVALUE='Name: [first\_name] [last\_name], DOB: [dob]'. For checkbox fields, simply separate multiple checkbox values with commas - e.g., @SETVALUE='1,3,[other\_field:value]'. NOTE: The piped value does *not* get applied during any data imports (via API or Data Import Tool) but only operates when viewing survey pages and data entry forms. NOTE: A field with @SETVALUE will have its value updated **ONLY** when the page loads, which means that its value will not be updated in real-time if you modify other fields on the same page that are piped into the @SETVALUE tag. NOTE: If being used on a date or datetime field, the date value inside the quotes must be in Y-M-D format - e.g., @SETVALUE='2007-12-25' - regardless of the field's set date format. NOTE: The only difference between @SETVALUE and @DEFAULT is that @DEFAULT is only applied when an instrument has no data yet, whereas @SETVALUE will always be applied on an instrument, meaning that @SETVALUE will **ALWAYS** overwrite the value if a field value already exists. TIP: To pipe the value of one multiple choice field into another multiple choice field, make sure you append ':value' to the variable being piped - e.g., @SETVALUE='[my\_dropdown:value]'.
  - left (text, number of characters) - Returns the leftmost characters from a text value. For example, left([last\_name], 3) would return 'Tay' if the value of [last\_name] is 'Taylor'.
  - right (text, number of characters) - Returns the rightmost characters from a text value. For example, right([last\_name], 4) would return 'ylor' if the value of [last\_name] is 'Taylor'.
  - length (text) - Returns the number of characters in a text string. For example, length([last\_name]) would return '6' if the value of [last\_name] is 'Taylor'.
  - find (needle, haystack) - Finds one text value within another. Is case insensitive. The "needle" may be one or more characters long. For example, find('y', [last\_name]) would return '3' if the value of [last\_name] is 'Taylor'. The value '0' will be returned if "needle" is not found within "haystack".
- New special functions: left(), right(), mid(), length(), find(), trim(), upper(), lower(), and concat(). These nine new functions can be specifically used when dealing with text values and may be especially useful when using them in conjunction with the @CALCTEXT action tag. To learn more and to see some practical examples of their usage, click the blue 'Special Functions' button in the Online Designer in any project.

- mid (text, start position, number of characters) - Returns a specific number of characters from a text string starting at the position you specify. The second parameter denotes the starting position, in which the beginning of the text value would be '1'. The third parameter represents how many characters to return. For example, mid([last\_name], 2, 3) would return 'AYL' if the value of [last\_name] is 'TAYLOR'.
- concat (text,text,...) - Combines/concatenates the text from multiple text strings into a single text value. For example, concat([first\_name], ' ', [last\_name]) would return something like 'Rob Taylor'. Each item inside the function must be separated by commas. Each item might be static text (wrapped in single quotes or double quotes), a field variable, or a Smart Variable.
- upper (text) - Converts text to uppercase. For example, upper('John Doe') will return 'JOHN DOE'.
- lower (text) - Converts text to lowercase. For example, lower('John Doe') will return 'john doe'.
- trim (text) - Removes any spaces from both the beginning and end of a text value. For example, trim(' Sentence with spaces on end. ') will return 'Sentence with spaces on end.'
- New feature: New logic editor for conditional logic, branching logic, calculations, report filters, etc. In every place where users might add/edit logic or calculations, the new logic editor will be displayed in a modal dialog to provide a better user experience for entering their logic. The logic editor provides much more space for entering large amounts of logic, including a fullscreen mode to take maximum advantage of their screen's real estate. It also provides bracket-matching and parentheses-matching where it will highlight a pair of matching brackets/parentheses to make it easier for users to gauge which brackets/parentheses belong together in the logic, thus reducing possible errors in the logic when typing.
- New feature: Auto-numbering of repeating instances for data imports - When using repeating events or repeating instruments, it may be difficult when performing dynamic imports of data for these because it is not easily known how many repeating instances already exist in a project for a given repeating event/instrument, thus often forcing users to invent clever ways to determine this, such as performing data exports beforehand and then dynamically determining what the next repeating instance number should be. However, that is no longer necessary. When performing a data import now for a repeating event/instrument, users may use the literal value "new" as the value for the "redcap\_repeat\_instance" field in their data import. By doing so, REDCap will perform the instance auto-numbering on its own to increment the repeating instances properly based on the highest numbered instance that already exists in the saved data in the project.
- New feature: New survey option "Save a PDF of completed survey response to a File Upload field" - On the Survey Settings page in the Online Designer, users may select a File Upload field in the project where a static PDF file of a participant's survey response will be stored immediately after they complete the survey. For longitudinal projects, if

the target field exists on multiple events, users may set this feature so that it stores the PDF in the selected field in the current event (default) or else in a specific event in the project. Thanks to Philip Chase and his team at University of Florida for their inspiration for this feature, in which it was based on their “Save Survey PDF to Field” external module. NOTE: Upgrading to REDCap 10.6.0 will *\*not\** automatically disable the “Save Survey PDF to Field” module if it is installed and enabled on any projects, nor will it transfer the saved settings of that module into this new feature in REDCap.

- New feature: Field Bank - When adding new fields via the Online Designer, users will see an "Import from Field Bank" button, which will allow them to search different standardized catalogs of commonly used fields, such as in the U.S. National Library of Medicine catalog. The Field Bank helps users add new fields quickly and easily to their data collection instruments. Over time, more standardized catalogs of fields will be added to the Field Bank.
- New feature: @INLINE action tag - Allows a PDF file or image file (JPG, JPEG, GIF, PNG, TIF, BMP) that is uploaded to a File Upload field to be displayed in an inline manner on the survey page or data entry form so that the PDF/image can be viewed by the user or survey participant without having to download it.
  - The PDF/image will be displayed inline on the page immediately above the download link for the field and will be displayed with 100% width by default (i.e., 100% width of the area in which it is contained).
  - Images will be displayed with their native width:height ratio, although PDFs will be displayed with a 300 pixel height by default. If you wish to manually set the width and/or height of the image/PDF, you may put the width/height values inside parentheses after the action tag in the following manner: @INLINE(width) or @INLINE(width,height). The width/height can be a percentage value (e.g., 50%) or a number representing size in pixels (e.g., 400). Thus @INLINE(50%) will display an image at 50% size for the area in which it is contained on the page, and @INLINE(400,100) would display the image always at 400px tall and 100px wide. To make an inline PDF appear taller on the page, you might use @INLINE(100%,600) since 300px is the default height for inline PDFs.
  - The @INLINE action tag also works if the File Upload field is embedded inside another field on the page.
  - Thanks to Andy Martin for his inspiration for this feature, in which it is based on his “Image Viewer” external module. NOTE: Upgrading to REDCap 10.7.0 will *\*not\** automatically disable the “Image Viewer” module if it is installed and enabled on any projects, nor will it conflict with the “Image Viewer” external module.
- New feature: New “:inline” piping option for File Upload fields
  - If piping using the ':inline' option for a File Upload field, such as [my\_field:inline], in which the uploaded file is a PDF file or image file (JPG, JPEG, GIF, PNG, TIF, BMP), the file will be displayed in an inline manner so that it is viewable on the page.

- The ':inline' option DOES work inside emails, so you can pipe a field with ':inline' inside the email body, thus allowing you to display inline images inside survey invitations or Alerts & Notifications.
  - The @INLINE action tag does not need to be used on a field in order to utilize the “:inline” piping option.
  - Note: Inline images are not able to be displayed inside a downloaded PDF of a survey/instrument that contains data.
  - New feature: New “:link” piping option for File Upload fields - If piping using the ':link' option for a File Upload field, such as [my\_field:link], the file's filename will be displayed as a clickable hyperlink for downloading the file, which works on webpages and also inside the body of email text (i.e., survey invitations or Alerts & Notifications).
  - New feature: Export Data Quality rule results - After running a data quality rule, users may export the results/discrepancies of the rule as a CSV file. The CSV file will be structured exactly like a data export/import file, which should allow for faster and easier cleaning of data so that values can be fixed and then re-uploaded as a data import.
  - New feature: Custom offline message for surveys in offline status- Users can provide custom text that is displayed to participants only when the survey is offline. This custom text will be displayed in place of the default offline text on the survey while the survey is in offline mode. This text can be set at the top of the Survey Settings page.
  - New feature: Survey-level Stop Action controls (new section on Survey Settings page)
    - Alternative survey completion text - Users can optionally set alternative survey completion text that is displayed in place of their standard survey completion text whenever a survey is ended via a Stop Action on any field. This is useful when it doesn't make sense for non-eligible participants to see the same survey completion text as those who completed the survey fully.
    - Prevent survey responses from being saved if the survey ends via Stop Action - Users can optionally choose to prevent submitted responses from being saved as data in the project if the survey ends via Stop Action. This is useful if survey administrators do not wish to keep the data for ineligible participants, for example. This means that if a one-page public survey is started but ends via Stop Action, no data from that response will be saved into the project (i.e., no new record will be created), but it will log this event on the project Logging page (so that users are at least aware of this happening despite no data being saved).
1. NOTE: If any data has been saved on the survey instrument for a given record prior to the Stop Action being triggered, that data will be deleted from that instrument. For example, if the survey is a multi-page survey in which data has been entered on previous pages prior to triggering the Stop Action, all data collected thus far in that survey will be deleted as if the survey was never taken. Additionally, if the record does not contain data in any other instruments, the entire record itself will be deleted during this process. If data does exist in other instruments, the record will not be deleted.

2. **PRIVACY NOTE:** If the option for Data Privacy/GDPR has been enabled in the project, in which it removes the contents of the log for a record that is deleted from the project, then if an entire record is deleted via this particular survey setting via a Stop Action, then all logged data values for the record will be removed from the log as per this project's data privacy setting.

## Bug Fixes / Improvements

### Version 10.4.1

- Bug fix: If a checkbox field whose variable name matches a PHP function (including REDCap-defined PHP functions) is used in conditional logic, report filter logic, branching logic, calculations, etc., it would not get parsed correctly, and the logic/calculation would mistakenly be considered syntactically invalid.
- Bug fix: When viewing the project Logging page, any "Sent Alert" logged events that pertain to records would mistakenly not be displayed. Bug fix: When importing data via the Data Import Tool for a Text Field with min/max range validation, if the value being imported is out of range, it would correctly display it inside an orange box but would mistakenly fail to list the existing value in red below the new value if the field already contained an existing value. on the page when filtering by record name. (Ticket #95222)
- Bug fix: When an administrator is approving Draft Mode changes for a production project in the To-Do List, the dialog popup on the page would mistakenly not close itself after an action was taken on that To-Do List item. (Ticket #95292)
- Bug fix: When using certain Smart Variables inside @CALCDATE or @CALCTEXT, it might mistakenly cause a calculation error to occur on the data entry form or survey page.
- Bug fix: When using the @DEFAULT action tag on an instrument that is not the first instrument, if the record has the record name "0" and is an existing record, the action tag would fail to work successfully. (Ticket #95296)
- Bug fix: If an administrator sends a General Notification to users in REDCap Messenger, it might mistakenly send an email notification multiple times to each user when instead it should only send a single email notification (if the user's permissions dictate that they receive email notifications). Bug emerged in REDCap 10.4.0.
- Change: On the Data Quality page, the text boxes used for adding/editing custom data quality rules were enlarged and are now resizable.

### Version 10.5.0

- Improvement: The Configuration Check page will now provide MySQL/MariaDB database configuration recommendations to improve database performance and stability. REDCap will check and compare various MySQL/MariaDB configuration settings to identify any settings that are not set correctly or should be changed. Most of the suggestions are based on the same recommendations from a popular open-source product named MySQL Tuner.

If no recommendations have been identified, the Configuration Check page will display a green checkmark icon with a short message saying that the configuration settings appear sufficient for optimal performance and stability.

- Bug fix: One Laboratory field and its associated LOINC code was not originally included on the field mapping page for Clinical Data Pull and Clinical Data Mart.
- Bug fix: Certain third-party PHP packages used in REDCap were mistakenly not compatible with PHP versions lower than PHP 7.2.5, and this would prevent some REDCap installations from upgrading to a recent release.
- Bug fix: When using Missing Data Codes in a project that has a drop-down field or a radio button field with a @NOMISSING action tag, in which one of the choice codings of the drop-down/radio is exactly the same as a Missing Data Code, if the field's value was set to a choice that corresponds to a Missing Data Code, after saving the data entry form and then returning to it later, the field would mistakenly be disabled on the page, thus preventing anyone from changing its value. In this scenario, the field should not be disabled if the @NOMISSING action tag is being used. (Ticket #95510)
- Bug fix: When an admin is using the "View Project as User" feature in a project, it might mistakenly display the "External Modules" link on the left-hand menu, even though the user being impersonated would never actually see that link displayed. (Ticket #95371)
- Bug fix: When exporting a PDF of saved data, if the PDF contains a survey response in which a Participant Identifier value had been entered into the Participant List for that participant, the PDF would mistakenly always display the Participant Identifier at the top right corner of the PDF. If a user that has De-Identified export privileges or Remove Identifier export privileges is exporting the PDF, or if a survey participant is exporting the PDF of their own responses, it should not display the Participant Identifier inside the PDF. (Ticket #95435)
- Bug fix: When importing certain PROMIS instruments or batteries from the REDCap Shared Library in which the instrument contains a T-Score and Standard Error field, if the PROMIS instrument is viewed as a data entry form in the REDCap interface, it might mistakenly display a branching logic error on the page. In these cases, the bug cannot be fixed except by deleting the instrument from the project (beware: this might delete or orphan any already-collected survey responses for the PROMIS instrument) and then by re-downloading it from the Shared Library. Bug emerged in REDCap 9.10.0 Standard and 9.5.28 LTS. NOTE: This would not impact the display of the PROMIS instrument when being taken as a survey by a participant.
- Bug fix: When assigning records to Data Access Groups via data import, in certain scenarios the records being imported would get assigned to DAGs properly but the Record List Cache would mistakenly not get updated during the import process, thus causing specific pages (e.g., reports, Record Status Dashboard) not to display those records when filtering by their DAG. If this issue occurred, the only thing that would fix it would be for an admin to know to click the "Clear the Record List Cache" button in the project. (Ticket #95133)
- Change: Added the project PID to the prepopulated email subject field when clicking the blue "Contact REDCap administrator" button on a project's left-hand menu.
- Change: When uploading a file to the File Repository and when uploading an attachment to an alert, it now specifies the max file upload size in each location.

- Bug fix: The User Access Dashboard's drop-down list filter of project statuses mistakenly included "Archived" projects, which is a mistake since "Archived" is no longer a valid option for a project status as of REDCap 9.8.0.

#### Version 10.5.1

- Major bug fix: If a user is in a classic/non-longitudinal project and selects an instrument after clicking the "Show data collection instruments" link on the left-hand menu, the instrument page displaying the record drop-down lists would mistakenly be only partially displayed due to a fatal PHP error on the page.
- Bug fix: On the Configuration Check page, it was mistakenly displaying MySQL database configuration suggestions for the MySQL query cache setting even though the query cache is deprecated in MySQL 8.0. It will now no longer suggest changes to the query cache if using MySQL 8.0. (Ticket #95873)

#### Version 10.5.2

- Improvement: The "E-signature and Locking Management" page in a project now displays information with regard to record-level locking, whereas in previous versions it only displayed information for instrument-level locking. (Ticket #95496)
- Bug fix: In the Add/Edit Field popup in the Online Designer, if the user selects "Slider" from the Field Type drop-down, whenever they have their cursor inside any of the fields in the "Labels displayed above slider" section in the popup and then they click Enter on their keyboard, it would mistakenly display an unrelated popup dialog about SQL Fields. (Ticket #96061)
- Bug fix: The action tags @CALCDATE and @CALCTEXT might fail to work correctly or might display an error on the form/survey page if they are referencing a field from another event in a longitudinal project. (Ticket #95993)
- Bug fix: If using the Smart Variables [form-link], [form-url], [survey-link], [survey-url], [survey-queue-link], [survey-queue-url], [survey-time-completed], or [survey-date-completed] in branching logic or in a calculated field's equation, an error message might mistakenly display on the data entry form or survey page saying that there is something syntactically incorrect about the logic/calculation. (Ticket #96080)
- Change: Added more informative text in the Biomedical Ontology information popup regarding the use of the BioPortal API web service and also how to contact BioPortal directly if a user has specific questions about their service.
- Bug fix: When new records are created rapidly in a project, especially when they are created nearly simultaneously, it could cause the record list cache on the database back-end to mistakenly get out of sync, thus causing record dashboards, reports, etc. to display the records in an incorrect order. (Ticket #94027)
- Bug fix: If a field with variable name "title" is used in the branching logic of another field, it would mistakenly display a branching logic error on the page. (Ticket #96154)

- Bug fix: If a data entry form or survey page has many fields with branching logic, the page might load unexpectedly slow because of an inefficiency with the process of checking if any embedded fields exist on the page. The inefficient code has been fixed so that if field embedding is not being used on a data entry form or survey page, the branching logic of all fields on the page will be processed 10x-30x faster than in previous versions of REDCap 10.X, thus making the page load much more quickly, especially when the instrument contains many fields. (Ticket #92556)
- Bug fix: If a Signature field or File Upload field is embedded inside another field on an instrument, if the field is Left-aligned (LV or LH) and the instrument has been taken as a survey, in which the survey participant has uploaded a file for the field, the field would fail to embed and would appear invisible when viewed on a data entry form prior to the user clicking the "Edit response" button.
- Bug fix: If the record name is very long for a record in a project, the record name in the Action column of the Logging page might overflow onto other text in the Logging table, thus sometimes making it unreadable.
- Bug fix: If a survey has the e-Consent Framework enabled and is using a survey theme, the e-Consent certification box and text on the last page of the survey would mistakenly not respect the survey theme colors. (Ticket #96277)

#### Version 10.6.0

- Improvement: File Upload fields and Signature fields may now be used in piping. If you are piping *\*from\** a File Upload field or Signature field, the field's numerical value will be piped by default, but you may pipe the original filename of the uploaded file by appending the *:label* option, such as `[my_field:label]`.
- Improvement: The REDCap::`saveData` method for plugins/hooks/modules now has an alternative way of passing parameters to the method. Rather than providing the method's parameters individually, they instead may be passed to the method in an associative array, in which each key in the array exactly matches the parameter names listed above (must match case). Note: Not all the parameters have to be included in the array, but only the ones one wishes to set explicitly. Example: `$params = array('dataFormat'=>'json', 'type'=>'flat', 'data'=>'[{"record_id":"1","age":"41","dob":"1978-07-20","form_1_complete":"0"}]');``$response = REDCap::saveData($params);`
- Change/improvement: Users are now permitted to import data values for Biomedical Ontology fields. In previous versions, this was not allowed and would return an error message when a user attempted this. The Data Import Tool now displays a warning (instead of an error) that informs users that importing data for such fields is allowable but is not recommended because the value might not display correctly if viewed afterward on a report or in the data entry interface, in which this is caused by the fact that the label is missing because it has not been fetched via the BioPortal web service and then cached in REDCap's database tables. (Ticket #8096)
- Bug fix: If a user has REDCap Messenger opened and is viewing the System Notifications or the General Notifications channel, if they navigate from page to page while leaving



Messenger opened, the messages in either of those channels would mistakenly fail to display until they clicked the "System Notifications" or "General Notifications" links in the Messenger window.

- Bug fix: If a user is using REDCap Messenger, the height of the Messenger window might not get calculated correctly and thus might mistakenly run off the bottom of the page (making it impossible to read all the messages) or else might leave unnecessary extra space at the bottom of the page.
- Bug fix: When importing the value for a field that is referenced inside the @CALCTEXT action tag of another field, the import process would mistakenly fail to update the @CALCTEXT field. (Ticket #96419)
- Bug fix: In a longitudinal project where a checkbox field is referenced in the branching logic and/or calculation of another field on the same instrument, in which the branching logic or calculation references that checkbox field on the same event and also on other events (i.e., cross-event logic/calc), the branching logic and/or calculation will evaluate correctly when the page is initially loaded, but if the checkbox's value gets modified on that page by checking/unchecking any of its choices, the branching logic and/or calculation might begin not to evaluate correctly anymore on that page until the page is refreshed or returned to at a later time. (Ticket #95744)
- Bug fix: Forty-three Laboratory fields and their associated LOINC codes were not originally included on the field mapping page for Clinical Data Pull and Clinical Data Mart.
- Change: On the Survey Settings page, the e-Consent Framework setting "Allow e-Consent responses to be edited by users?" is now pre-selected by default when enabling the e-Consent Framework.
- Bug fix: When importing data for pseudo-calc fields (i.e., fields with the @CALCDATE or @CALCTEXT action tag), it would mistakenly allow values for such fields to be imported. It should instead prevent values for pseudo-calc fields from being imported since their value will be calculated automatically during the import process. Similar to calculated fields, any pseudo-calc fields will be ignored during the data import process. If values for pseudo-calc fields need to be updated en masse, this can be done by running Data Quality rule H.
- Bug fix: The "View project as user" feature would mistakenly not work correctly on the Other Functionality page in a project, and thus it might display some things that it should not and also might hide some things that should be displayed.
- Bug fix: The "Time Limit for Survey Completion" option on the Survey Settings page would mistakenly not function correctly if using MySQL 8. (Ticket #94256)
- Bug fix: When a repeating instrument is enabled as a repeating multi-page survey in a longitudinal project, and all the fields on a given survey page are hidden by branching logic, in which the the fields in the branching logic does not have [current-instance] appended to them, then in certain circumstances a survey page might mistakenly get skipped while a participant is taking the survey. (Ticket #96426)
- Bug fix: The ontology Current Procedural Terminology (CPT) was removed from the list of BioPortal Ontology Services since that ontology is no longer usable by the BioPortal service due to licensing reasons.

## Version 10.6.1

- Improvement: The Logging page in a project now defaults to only displaying the logged events from the past week, although users can always adjust the filter settings to expand the time range values after initially loading the page. This change makes the Logging page load much faster when initially loaded by a user.
- Improvement: The Logging page in a project now has helpful buttons to quickly adjust the time range filters to Past Day, Past Week, Past Month, Past Year, and all time (“no limit”) to make it easier for users to view the logging from various time ranges.
- Improvement: The Logging page in a project now has more download options for exporting the logging. In addition to exporting all logged events, there are now the following new buttons: 1) Export all pages using current filters and 2) Export current page.
- Improvement: When downloading a PDF of a data collection instrument containing a File Upload field that is embedded in another field, it will now display the file name of the uploaded file in the PDF rather than the doc\_id number (i.e., the raw data value). This change only involves embedded fields since normal/non-embedded File Upload fields already display the file name of the file in the PDF.
  - Bug fix: When viewing certain adaptive instruments that have been downloaded from the REDCap Shared Library, in which one of the multiple choice options has both a code and value of "0", the label for that choice would mistakenly not be displayed next to its radio button, so it would appear not to have a label.
  - Bug fix: For the Data Mart and Clinical Data Pull services, the action “Fetching data from FHIR endpoint” was mistakenly getting logged on the project Logging page for every time that REDCap would make a call to the EHR, even when no new data is stored in REDCap from the EHR. It should not have been logging that but instead only logging when data points are actually imported.
  - Bug fix: For unknown reasons, the Ace Editor library (used by the new Logic Editor) is not compatible with Bootstrap dialogs when using the Firefox browser. This prevents the Logic Editor from being usable on the Alerts & Notifications page. To deal with this conflict (until a solution has been found), if a user is using Firefox, the Logic Editor will not be used on the Alerts & Notifications page. (Ticket #96992)
  - Bug fix: When a calc field or pseudo-calc field (e.g., @CALCTEXT) has an equation that references a multiple choice field that contains dashes in one or more of its choice values/codes, in which the value/code is greater than a certain length, the calculation may return a blank value rather than the correct value. (Ticket #97055)
  - Bug fix: When moving a project to production and deleting all records in the process, or if a user clicks the "Erase all data" button in a development project, any records that have been locked at the record level would mistakenly still have their locked status maintained after the record deletion. This could cause issues in the future if a record is created afterward and has the same record name as a previously-locked record. (Ticket #97167)

- Bug fix: When a plugin, hook, or external module calls the method REDCap::getProjectXML(), it would mistakenly not include the "redcap::SurveysGroup" entry and other project-level information in the resulting XML. (Ticket #97151)
- Bug fix: When viewing a data entry form that has drop-down fields with the auto-complete option enabled, the drop-down list might mistakenly be displayed incorrectly as if it is very narrow and has no options to select. Note: This issue occurs on data entry forms but not on survey pages.
- Bug fix: The survey-date-complete or survey-time-complete Smart Variable would mistakenly not work correctly in some calculations and in many cases would display a calculation error message. Bug emerged in REDCap 10.0.29 LTS and 10.5.2 Standard. (Ticket #97057)

## Version 10.6.2

- Improvement/change: REDCap is now compatible with PHP 8.0
- Improvement: Field variables and Smart Variables can now be piped into the "src" attribute of HTML image tags ("img"). Previous versions did not allow this but would allow the piping of values into the "href" attribute of hyperlinks. Now both are possible. Note: The value being piped into the "src" attribute must have already been saved prior to the page loading, which is how piping for the "href" attribute has always worked.
- Bug fix: If a user clicks on a status icon for a repeating instrument on the Record Status Dashboard, in which there are many repeating instances for the record-instrument, it might display the popup list of repeating instances so that they mistakenly run off the top of the page, making it impossible to close the floating popup or to view it completely.
- Bug fix: If a radio button or slider field has a Missing Data Code as its value, clicking the "reset" link next to the field would mistakenly not remove the Missing Data Code label from the user interface below the field, even though it would correctly set the value to blank/null for the field. (Ticket #97028)
- Bug fix: If a slider field has a value and is being hidden by branching logic, in some scenarios it might mistakenly display the "survey errors exist" error on surveys or might keep displaying the "erase value" prompt repetitively in an infinite loop on a data entry form. (Ticket #97395)
- Bug fix: If a survey participant clicks the "Survey Queue" icon at the top right of the survey page, in which the queue contains a lot of items so much that the queue is taller than the page itself, the queue would mistakenly run off the top or bottom of the page and would not be closable. (Ticket #96613)
- Bug fix: If a survey title contains HTML tags, the tags would mistakenly be displayed in the drop-down list of surveys in the Participant List.
- Bug fix: When an Automated Survey Invitation is triggered by a data import where a new record is being create, and the ASI email body contains a [survey-link] or [survey-url] Smart Variable that points to a survey other than the current one for which the ASI

is being triggered, it would mistakenly not pipe the survey link/URL successfully into the email body. (Ticket #96305)

- Bug fix: If the REDCap web server is running a version of PHP that is higher than the recommended PHP versions supported by REDCap, the "Server info" text at the top of the main Control Center page might mistakenly display a warning with incorrect text about the need to upgrade PHP. (Ticket #96749)
- Bug fix: When using the SendGrid API to send emails from REDCap, the Reply-To email header would mistakenly not get set correctly and would thus cause all replying emails to be sent to the Global "From" Email Address instead of the actual sender's email.
- Bug fix: If a date or datetime field is embedded inside the choice label of a checkbox field, clicking the Today/Now button for the embedded date/datetime field would mistakenly check or uncheck the checkbox choice in which it is embedded. (Ticket #97719)
- Bug fix: On the Alerts & Notifications page, when modifying an alert that previously had the option set to send it "Every time the form/survey in Step 1B is X", and then when the alert was later opened after being saved, if it was changed in Step 1A (selecting the third radio option) so that that choice was no longer viable and was hidden in the dialog, it would still keep the alert listed as a recurring alert in the backend database table, which could cause it to not get triggered or sent at the correct times. Note: This fix will prevent this issue from occurring in the future and will also retroactively fix any alerts that have been saved incorrectly due to this bug. (Ticket #97507)
- Bug fix: 13 Laboratory and Vital Signs fields and their associated LOINC codes were not originally included on the field mapping page for Clinical Data Pull and Clinical Data Mart.
- Bug fix: When calling the "Export List of Export Field Names" API method or the REDCap::getExportFieldNames() method for a project that has Missing Data Codes defined, it would mistakenly fail to add the Missing Data Codes as extra choice options for checkbox fields (excluding fields with the @NOMISSING action tag). (Ticket #96240)
- Bug fix: When a project is being permanently deleted (either by an administrator on the Browse Projects page or via the cron job 30 days after a user has "deleted" the project), it would mistakenly fail to log the very last event for the project (i.e., that the project is itself being permanently deleted), which should include the following info about the project in this last logged event: the project title, project ID, number of fields, number of records, current project status, and list of current project users.
- Bug fix: When processing a user request on the To-Do List page, in which the user making the request has an apostrophe in their email address, it might cause the request not to load successfully in the dialog on the To-Do List page. This only affects certain types of requests, such as moving a project to production. (Ticket #96958)
- Bug fix: When a matrix field is embedded inside another field on a survey page or data entry form, in which some other fields on the page contain branching logic that reference the embedded matrix field, the branching logic might silently fail to show or hide the other field correctly. (Ticket #97114)

- Bug fix: When accessing the REDCap server from a domain that is not the domain seen in the REDCap Base URL value (i.e., when using REDCap over multiple domains), the HTTP redirecting that occurs when REDCap is building a project's record list cache (which is an automatic process), would mistakenly redirect the user to the other domain that is set in the REDCap Base URL. Thus the user ends up on the other server/domain by mistake. It now keeps the user on the current domain during this redirect process. (Ticket #97777)
- Bug fix: When an administrator is using the "View Project as User" feature, the "Dynamic Query (SQL) Field" option would mistakenly be displayed for them when adding a new field in the Online Designer. (Ticket #96865)
- Bug fix: The Java code that is auto-generated by the API Playground mistakenly had some missing closing parentheses in the MyClass constructor. (Ticket #96565)
- Change/improvement: Small changes to improve the overall web accessibility of REDCap, especially on survey pages, such as increasing the contrast ratio of many light-colored labels and adding/removing "aria-X" HTML attributes where appropriate.
- Bug fix: The Java code that is auto-generated by the API Playground mistakenly had some syntactical errors for certain API methods. (Ticket #97855)
- Bug fix: In a longitudinal project where a field is used both in a non-repeating context and in a repeating instrument or repeating event, if a calculation or branching logic references the field in which it has the Smart Variable "[current-instance]" appended to it, the calc/logic might not get parsed correctly in the non-repeating context and thus would cause the calculation/branching logic not to evaluate correctly. (Ticket #96777)
- Bug fix: When a field is embedded using the ":icons" attribute (e.g., {date\_of\_birth:icons}), it might not display correctly on the page, in which it might be displaying too widely or creating unnecessary text wrapping. (Ticket #96838)

### Version 10.6.3

- Database performance improvements: New cron job was added to check the percentage of database connections being used, in which it will notify the REDCap administrator if more than 2/3 of MySQL's max connections have been used. Also, to preserve system performance, the cron job will automatically kill any long-running database queries (queries running longer than 30 minutes or any sleeping connections that are more than 60 minutes old).
- Improvement: Field embedding can now be used for embedding a Descriptive field inside another field (even though descriptive fields do not have an actual input element for saving data). Embedding a descriptive field would merely relocate the field's label to the new location where it is embedded. This is typically only useful if the descriptive field has branching logic, in which you could use branching logic to make the descriptive field's text appear conditionally in a specific place on the page.
- Improvement: A link to the "REDCap Language Library" has been added to the Control Center's left-hand menu. The Language Library is a centralized place where

administrators can download and share language files where the stock text in REDCap has been translated into another language.

- Major bug fix: If using the `datediff()` function in a calculated field or in the `@CALCTEXT` action tag, if the `returnSignedValue` parameter is provided and has a `TRUE` value in the function but the `dateFormat` parameter is not provided, then the calculation might mistakenly return a positive number value on the page if the value is actually a negative number. Note: This could be fixed if running Data Quality rule H.
- Bug fix: If a survey participant sends an SMS message to a Twilio phone number that is set up for a REDCap project, REDCap would reply simply with "Please enter your access code to begin the survey", which might be unexpected in some situations, such as if the participant sent the SMS to this number by accident or if they sent it before they were invited to take the survey. More response text has been added to the message now to provide more clarity to the respondent in these situations. (Ticket #97520)
- Bug fix: When clicking the "M" icon to open the Missing Data Code menu for an embedded field on a data entry form, it would mistakenly not display the menu at all or it would display it on the wrong location on the page.
- Bug fix: Fatal PHP error occurs in some branching logic parsing if running PHP 8.0. (Ticket #98045)
- Bug fix: When using Twilio telephony services for Alerts & Notifications, the Notification Log would mistakenly fail to display the recipient's phone number on the page if a phone/number field is being used as the recipient's phone number. Instead it would merely display the unpiped variable name in the Recipient column.
- Bug fix: When using Twilio telephony services for Alerts & Notifications and viewing a scheduled or sent notification via the View Notification dialog on the Notification Log, it would mistakenly fail to display the recipient's phone number in the dialog if a phone/number field is being used as the recipient's phone number. Instead it would merely display the unpiped variable name.
- Bug fix: When viewing the Notification Log for Alerts & Notifications, it might mistakenly fail to display unsent/scheduled notifications in the log in certain cases if the "End time" filter is set to a blank value. This might make it appear as if the notification has not been scheduled.
- Bug fix: The Configuration Check page was mistakenly displaying MySQL database configuration suggestions for the MySQL query cache setting even though the query cache is deprecated in MySQL 5.7.20+. It will now no longer suggest changes to the query cache if using MySQL 5.7.20+. (Ticket #97786)
- Bug fix: If users cannot create projects on their own but must request that admins create them on their behalf, an administrator creating the project for a user mistakenly needs to have the "Allow this user to request that projects be created for them by a REDCap administrator?" privilege enabled for their user account. This should not be required but should be implied via their status as an admin. (Ticket #98128)
- Bug fix: When performing a data import of a CDISC ODM (XML) file that contains only data (i.e., metadata not included), in which the XML file contains base64-encoded binary

files for File Upload fields, those File Upload files would mistakenly be ignored during the import process and would not be imported with the rest of the data. (Ticket #96800)

- Bug fix: When creating a new REDCap project using a Project XML file, in which the XML file contains surveys and fields with Stop Actions, the Stop Actions would mistakenly not get added to the fields for the new project created. (Ticket #97959)
- Bug fix: When performing a data import where the uploaded data set contains checkbox fields, REDCap would mistakenly allow values of "1.0" and "0.0" (and other approximations of "1" and "0") to be imported for checkbox fields. This would also cause the values not to save correctly for these fields, even though the logging implies otherwise. It should only explicitly allow values of "1" and "0" for checkboxes. (Ticket #97972)
- Bug fix: When editing conditional logic for surveys in the Survey Queue dialog on the Online Designer, if the logic contains a syntactical error, it might persistently keep opening the Logic Editor over and over, thus preventing the user from successfully closing it and saving their changes. (Ticket #98213)
- Bug fix: If a project has Double Data Entry enabled and DDE person #1 or #2 is viewing a custom record status dashboard, the dashboard will mistakenly return incorrect results on the page for custom dashboards that have filter logic defined. (Ticket #97174)
- Bug fix: In a longitudinal project that contains repeating instruments and/or repeating events, if a custom data quality rule has logic that contains a field whose data collection instrument exists in both repeating and non-repeating contexts in the project, the data quality rule might not always return all the discrepancies that exist. (Ticket #97508)
- Bug fix: If a project was marked as Completed, any Alerts & Notifications or survey invitations that had been previously scheduled would mistakenly continue to send. They should not send if a project is marked as Completed.
- Bug fix: If reordering Report Folders inside the Report Folder dialog while using PHP 8.0, it would fail with a fatal PHP error. (Ticket #98217)
- Bug fix: The language in the Account Expiration email to users (and their sponsor, if applicable) has been modified to provide more clarity to the user receiving the email. (Ticket #58767)
- Bug fix: If a project has Double Data Entry enabled and DDE person #1 or #2 is viewing the record status dashboard, the Custom Record Label (if enabled) would fail to display on the page next to the record names. (Ticket #97116)
- Bug fix: If a data collection instrument's unique instrument name contains a triple underscore, in which its name was manually set via Column B in a data dictionary upload, when entering data for this instrument on the data entry form, the value for the instrument's form status complete field would fail to save successfully and thus would always get set to Incomplete ("0"). Note: This would not affect data imports or surveys but only data entered on the data entry form. (Ticket #96547)
- Bug fix: If using the @NONEOFTHEABOVE action tag on a checkbox field that is embedded inside another field, the @NONEOFTHEABOVE functionality would not function correctly if the user clicked the checkbox label to check/uncheck the option (as opposed to clicking the checkbox element itself). (Ticket #98269)

## Version 10.7.0

- Improvement: In the Online Designer, any fields that have action tags will have those action tags listed immediately below the field in the table on that page. This makes it easier to know if a field has a certain action tag without having to open the Edit Field dialog for the field.
- Major bug fix: On a survey page or data entry form, if a slider field already has a value saved for it before the time that the page is loaded, and a user then modifies the slider field value, while it would appear that the slider's value has changed, it mistakenly has not. Bug emerged in REDCap 10.6.2. (Ticket #98450)
- Change: PHP 7.0.0 is now the new minimum PHP version that is required for running REDCap. Thus all versions of PHP 7 and PHP 8 are currently supported.
- Bug fix: The Configuration Check page was mistakenly displaying MySQL database configuration suggestions for the MySQL query cache setting even though the query cache is deprecated in MySQL 5.7.20+. It will now no longer suggest changes to the query cache if using MySQL 5.7.20+. Note: This issue was supposedly fixed in REDCap 10.6.3 but mistakenly was not. (Ticket #97786)
- Bug fix: If using an if() function inside the @CALCTEXT action tag, in which the if() function is outputting text that contains a comma, it would mistakenly display an error message on the survey page or data entry form.
- Bug fix: If a longitudinal project's Automated Survey Invitation (ASI) has conditional logic that contains datediff() with "today" or "now" as a parameter and also has a field in the logic that is prepended with any "event-name" Smart Variable, then the ASI cron job that runs every 4 hours might mistakenly schedule invitations when it shouldn't or might mistakenly remove some already-scheduled invitations (but only if the "Ensure logic is still true before sending invitation?" option is checked).
- Bug fix: The option "UNK, Unknown" was missing from the "race" field options when using the Clinical Data Pull (CDP) feature.
- Bug fix: Two Laboratory fields (including a COVID-related one) and their associated LOINC code were not originally included on the field mapping page for Clinical Data Pull and Clinical Data Mart.
- Bug fix: In some cases, the @CALCDATE action tag might mistakenly return the value "NAN" when it should return a blank/"" value. This often happens when one or more of the parameter values for @CALCDATE are blank. Bug emerged in REDCap 10.6.3.
- Bug fix: In a longitudinal project, if a field on a repeating instrument or repeating event has branching logic that contains a field name appended with the Smart Variable "first-instance" or "last-instance", the branching logic might mistakenly not get parsed correctly and would display a branching logic error popup on the survey page or data entry form. (Ticket #98427)
- Change: The "Help & FAQ" page was updated with new content.
- Bug fix: In certain situations where an [X-instance] Smart Variable in piping, it would cause PHP to crash with a fatal error if using PHP 8. (Ticket #98920)



- Bug fix: Ways were found where a user could access a file uploaded to a File Upload field that exists in another project, specifically via the Send-It link on data entry forms or via downloading the "ZIP file of uploaded files (all records)". However, this could only be done if the user has access to that other project.

#### Version 10.7.1

- Improvement/change: When using the ":inline" piping option for File Upload files inside an email body (e.g., survey invitations, alerts), if the uploaded file is not an image file, it will still attach the file to the email but will display the file's filename in the email text as an alternative to displaying it as an inline image.
- Major bug fix: A race condition can occur when two records are being randomized at the exact same time, in which it is possible that they both mistakenly receive the same allocation and same value for the randomization field in the project. (Ticket #99159)
- Change: In order to help emphasize the "NIH/NLM Catalog" more in the new Field Bank feature, the "REDCap Catalog of Common Data Fields" has been removed indefinitely as an option in the Field Bank dialog in the Online Designer.
- Change: The Field Bank feature in the Online Designer can now be disabled at the system level on the "Modules/Services Configuration" page in the Control Center. Once disabled, the "Import from Field Bank" button will no longer appear in the Online Designer for any user.
- Change: Some language on the Survey Settings page was modified for clarity with regard to the Time Limit for Survey Completion feature to note that it is not applicable to survey links sent via Alerts & Notifications.
- Bug fix: In some situations where embedded fields have branching logic that is triggered by other embedded fields, if the parent field of those embedded fields is itself triggered by branching logic, then some of the embedded fields inside the parent might mistakenly be displayed when they should be hidden by branching logic.
- Bug fix: When using the ":inline" piping option to display a PDF file inline on a webpage after it had been uploaded to a File Upload field, in specific circumstances with regard to the text/HTML surrounding the piped field, the inline piping of the PDF file may fail to display on the page.
- Bug fix: When using the ":inline" piping option to display a PDF or image file inline on the same instrument on which the File Upload field itself exists, the inline piping of the PDF/image would fail to work. However, it would coincidentally work if the File Upload field was using the @INLINE action tag.
- Bug fix: When clicking the "Send-It" link to send a file from inside a project (e.g., a data export file or a file from File Repository), after submitting the page to send the file to the desired recipients, an error message would mistakenly display saying that the user does not have permission to the file. Thus the file would not be sent. Note: This does not affect the main Send-It page that is accessible via the tab on the main REDCap home page, etc.

- Bug fix: When a survey participant is taking a PROMIS, NeuroQoL, NIH Toolbox, etc. assessment that is adaptive or has auto-scoring, the "Anchor Text" would mistakenly not be displayed on the survey page for the first and last choices of the survey question (assuming anchor text exists for the question).
- Bug fix: When using the Custom Record Label and/or Secondary Unique Field in a project that contains many records (i.e., thousands or more), running Data Quality rules would mistakenly take an inordinate amount of time to return the results.
- Bug fix: When using the Custom Record Label and/or Secondary Unique Field in a project that contains many records (i.e., thousands or more), the Resolve Issues page (available when using the Data Resolution Workflow) would mistakenly take an inordinate amount of time to load.
- Bug fix: The Configuration Check page might mistakenly display a yellow recommendation saying that the MySQL/MariaDB query cache is not enabled but mistakenly does not tell the user that they should set the setting `query_cache_type` to "ON" or "1" in their `My.cnf` or `My.ini` config file. It now checks the `query_cache_type` setting to recommend that it be enabled.
- Bug fix: On a data entry form or survey, it might be possible in very specific situations for hidden radio elements to mistakenly be selected and be somewhat visible on the page. This would not affect any data but might cause confusion to the user. (Ticket #99271)
- Bug fix: Fixed a fatal PHP error that occurs on certain pages in PHP 8 only. (Ticket #99323)
- Bug fix: If an embedded checkbox field has the `@READONLY` action tag, it would mistakenly be possible to check/uncheck the checkbox and thus change its value by clicking its choice label, although clicking the checkbox element itself would do nothing and would remain read-only, as expected. (Ticket #99322)
- Bug fix: If a file that is uploaded for a File Upload field or for a message in REDCap Messenger exceeds the maximum file size as defined by the server or by REDCap's configuration, the file's metadata would mistakenly remain in the database and (if the file size exceeded the REDCap limit but not the server limit) the file might still remain on the server. It will now set the file to be removed from these places when this occurs. (Ticket #99324)
- Bug fix: When piping a field into a label on a data collection instrument in a longitudinal project in which the piped field variable is prepended with the `[previous-event-name]` Smart Variable, the piping would fail to work in certain specific contexts, such as if the instrument of the field being piped is not designated on the previous event when viewing a different instrument on the next event. In these cases, it would mistakenly display six underscores (as if there is no value) rather than the real value. (Ticket #99342)
- Change: For longitudinal projects that are in production, the Define My Events now displays an extra warning that warns that renaming events could cause disastrous effects if any unique event names are utilized in conditional logic, branching logic, calculations, reports filters, data quality rules, etc.

- Bug fix: In the field-view in the Online Designer, the floating help boxes on the right of the page might mistakenly overlap some of the instructional text. (Ticket #98688)
- Bug fix: When a multi-page survey has fields utilizing the @CALCTEXT or @CALCDATE action tag, in which those fields themselves are used in a calculation or branching logic on a separate page that also does not display the fields utilized inside the @CALCTEXT or @CALCDATE logic, it would mistakenly display an error message on the survey page. (Ticket #98545)
- Bug fix: If a user is attempting to enable the Secondary Unique Field on a field that somehow has records with blank values (for the "value" column) saved for that field in the database, REDCap would mistakenly not allow the user to enable the Secondary Unique Field for the field. (Ticket #83279)
- Bug fix: If utilizing certain Smart Variables inside the query of a Dynamic SQL Field (e.g., [record-name]), the Smart Variable would mistakenly not get escaped in the query, which might cause the query to fail and not return the desired results.
- Bug fix: When editing logic in the Logic Editor for the Survey Queue or Automated Survey Invitations, if a syntactical error exists in the logic, it might mistakenly create an infinite loop where the error popup keeps displaying and is not able to be fully closed, thus causing the user to have to reload the page. (Ticket #99412)

#### Version 10.8.0

- Improvement: Custom ranges (min/max) for slider fields - Users may now set a custom minimum and/or custom maximum integer value for slider fields. The default min and max is still 0 and 100, respectively. If no value is entered for the min or max value, it will assume the default value. These can be set via the Edit Field popup in the Online Designer, and via the "Text Validation Min" and "Text Validation Max" columns in the Data Dictionary.
- New feature: New API "Export Logging" method - This new API method allows users to export a project's logging via the API using very similar methods and filters as in the project's user interface. See the documentation for all filter parameters that are available.
- New feature: Ability to import/export user rights via a CSV file on the User Rights page - Users can download a CSV file to view all the user privileges of the existing users in a project, including their instrument-level user rights. Users can upload a CSV file to grant new users access to the project and/or to modify the user privileges of existing users, including their instrument-level user rights.
- Improvement: The rich text editor is now utilized when editing the following system-level custom text settings in the Control Center: Custom login text, Homepage announcement custom text, Homepage informational custom text, Help & FAQ custom text, Custom message when creating/copying project, and Custom message when moving project to production.
- Improvement: The Email Users page in the Control Center now has a new quick-select link to select and email only the currently logged-in users. (Ticket #99532)

- Bug fix: When using the ":link" piping option for a File Upload field on a survey or data entry form, in which the field being piped exists on that same page, if a user initially uploads a file for that File Upload field, it would mistakenly pipe the value instead of the hyperlink for downloading the file. However, if the page is reloaded or revisited later, the piping works correctly to display the hyperlink. This issue only occurs at the moment in which the file is uploaded when piped on the same page.
- Bug fix: In specific cases when using the ":inline" piping option for a File Upload field that has a PDF uploaded to it, instead of displaying the PDF inline on the page, it would mistakenly cause the PDF to be auto-downloaded by the user's browser. (Ticket #99572)
- Bug fix: When a REDCap administrator is using the "View project as user" feature to impersonate a user when viewing an "initial survey" in the Participant List while the project is in production, it would mistakenly not disable the "Enable" button for the Participant Identifier column in the Participant List. In this scenario, that button should remain disabled since it would be disabled for the user being impersonated.
- Bug fix: The style of the text displayed inside the rich text editors did not match the general style and CSS classes of text on REDCap webpages (e.g., the text in the editors were much larger). This made it more difficult to accurately determine what the resulting text would actually look like on the page.
- Bug fix: When using the Field Bank feature, some specific field types that are imported into a project might mistakenly have choices that belong to other fields that appear in the Field Bank search. However, this only appears to occur when searching in the 'REDCap Catalog of Common Data Fields', which was deprecated in REDCap 10.7.1 and thus is no longer accessible. (Ticket #99552)
- Bug fix: When the text inside the @CALCTEXT action tag contains an opening parenthesis inside quotes but does not contain a closing parenthesis inside those same quotes (and vice versa), the @CALCTEXT equation would mistakenly not get parsed correctly and might cause an error to display on the survey/form or might cause the @CALCTEXT field to display as a normal editable text field instead of a pseudo-calc field.
- Bug fix: When a required field is left empty/blank on a survey or data entry form, in which the required field has no field label defined, instead of displaying a bullet point with no text in the error prompt, which is confusing, the variable name of the field will be displayed as an alternative. (Ticket #99551)
- Bug fix: When using the ":link" or ":inline" piping options pointing to a File Upload field, in which the field is from a different event than the event where it is being piped, the user would receive an error message when attempting to download or view the file. (Ticket #99754)
- Change/improvement: The maximum repeating instance number that can be added for a repeating instrument or repeating event has been increased from "9999" to "32767".
- Bug fix: When running the "Re-evaluate Alerts" feature on the Alerts & Notifications page in a longitudinal project, in which the alert is set to be triggered on "[Any

event]" if an instrument is saved with a Complete status, it would mistakenly trigger alerts for records that do not have a Complete status for the instrument. If the alert is set to be triggered by completing the instrument on a specific event (rather than on "[Any event]"), this issue does not occur. (Ticket #99889)

- Bug fix: Data Quality rule F would mistakenly return false positives if the project is a multi-arm longitudinal project and a field's branching logic references fields/events in arms where the record currently doesn't exist. (Ticket #99922)

#### Version 10.8.1

- Bug fix: If an API user belongs to a Data Access Group, the project's back-end Record List Cache would mistakenly get reset every time the user would import a batch of records via the API. This would cause performance degradation of the project if many API imports are occurring for the project in a relatively short amount of time.
- Various fixes and updates for the External Module Framework
- Bug fix: When a project has enabled the "Delete a record's logging activity when deleting a record" setting, the action of deleting a record would correctly delete the record's logging activity with regard to what can be viewed via the front-end user interface, but it was mistakenly not additionally deleting the back-end SQL logging details that are stored in the database log\_event tables (even though this information can only be accessed if you have direct access to the database or via a special plugin or external module for doing such). (Ticket #100131)
- Bug fix: When a calc field or @CALCTEXT field exists on a repeating instrument or repeating event, the calculation might not get triggered during a data import or when running Data Quality rule H, in which it will fail to find discrepancies for this field when some discrepancies exist (but only in specific situations depending on the calculation being used for the field). (Ticket #82961)
- Bug fix: When a field has an @HIDDEN-PDF action tag in the Field Annotation/Action Tag text in which "@HIDDEN-PDF" is preceded with a line break with no space before the line break, the field would mistakenly not be hidden when downloading a PDF of the instrument.
- Bug fix: When attempting to download a file that was just uploaded to a File Upload field on a survey page, it would display an error message and prevent the downloading of the file if the survey had not been saved yet (i.e., if the participant was still on page one of the survey, whether public or private). This should not occur at all when the participant is using a private/unique survey link. This error message now only displays on public surveys in which the survey has not been saved yet at all (before the record has been created), which is appropriate. (Ticket #99754)
- Bug fix: When using cross-form or cross-event calculations or branching logic involving a DMY or MDY formatted date or datetime field, if the field referenced on the other instrument/event has a Missing Data Code saved for it, saving the current instrument would cause the "Invalid values entered!" warning to appear mistakenly. (Ticket #100238)

- Bug fix: When a project has thousands or more records and has several records being created every minute, there might exist a slight lag in the back-end Record List Cache immediately after creating a new record, in which it could cause REDCap to mistakenly assume that a record doesn't exist yet when in fact it was just created. This might cause a record's data to get duplicated as a new record if a user is not paying attention while attempting to create another record.
- Bug fix: In some rare cases for projects that have calculated fields on repeating instruments, running Data Quality rule H would return valid discrepancies, but clicking the "Fix now" button on the page would mistakenly fail to fix the calculations.
- Bug fix: When attempting to download an instrument's Instrument ZIP file in the Online Designer when the instrument was created in Draft Mode but does not yet exist in the live version of the project, it would display a generic error message, which could be confusing to users. It now displays a more informative message regarding why exactly the zip file cannot be downloaded. (Ticket #100290)

#### Version 10.8.2

- Change: New "Applications Overview" video added to Training Videos
- Change/improvement: When viewing the Survey Settings page for a repeating instrument, the "Location of the button on survey" option for the "Allow respondents to repeat the survey" setting now includes a new choice not to display the repeating survey button at all on the survey page. This is useful if users are utilizing the Survey Queue as the path for participants to enter new responses for the repeating responses instead of displaying the repeating survey button on the survey page itself.
- Bug fix: When importing data from a CDISC ODM XML file (whether it be a Project XML file with data or a data-only ODM export file), in which the file contains data for repeating instruments, only the first repeating instance of any repeating instrument would get successfully imported.
- Bug fix: When importing data from a CDISC ODM XML file (whether it be a Project XML file with data or a data-only ODM export file), in which the file contains data for repeating events, only the last repeating instance of any repeating event would get successfully imported and would mistakenly get saved into the first repeating instance of the event.
- Bug fix: If a signature field is embedded on a survey page or data entry form, depending on where it is embedded, the signature image might mistakenly not be displayed directly above the download link after the user/participant adds their signature. It should always be displayed directly above the download link.
- Bug fix: In a longitudinal project that contains calculated fields whose equations reference fields on other events, Data Quality rule H might fail to return discrepancies for events that do not contain any data for any fields.

- Bug fix: Auto-calculations (i.e., the server-side processing of calculated fields) would mistakenly try to include all the fields in the project when assessing if calculated fields are being triggered and thus need to be updated, rather than only considering the fields that are being updated at that moment, such as during a data import or data entry. This could cause certain data imports to take much longer than they should.
- Improvement: Performance improvements for the "datediff+today/now" cron job for Alerts & Notifications
- Bug fix: A fatal PHP error would occur in certain situations when running PHP 8.0. (Ticket #100549)
- Bug fix: A fatal PHP error would occur in certain situations when running PHP 8.0. (Ticket #100456)
- Bug fix: A fatal PHP error would occur in certain situations when running PHP 8.0 while performing a data import via the API Import Records method. (Ticket #100416)
- Bug fix: The "Quick Add" dialog on the "Create New Report" page might mistakenly not work correctly if a data collection instrument's name/label contained a backslash.
- Bug fix: When viewing the Survey Invitation Log for a project displayed in a non-English language, the "Delete all selected" button might mistakenly not be displayed on the page. (Ticket #100480)
- Bug fix: When using advanced filter logic for reports, the logic would not get interpreted correctly if it contained certain Smart Variables, especially if it contained only Smart Variables with no field variables (e.g., [current-instance] <> ""). With this issue fixed, users may now utilize X-instance Smart Variables in a more intuitive way for filtering reports, such as the following: 1) Display only repeating instance data - [current-instance] <> "", 2) Display only non-repeating instance data - [current-instance] = "", 3) Display only the first instance of only repeating instance data - [current-instance] <> "" and [current-instance] = [first-instance], and so on. (Ticket #45618)
- Change: Added a tip in Step 3 when creating a new report to inform users how to use [X-instance] Smart Variables to filter repeating data. This tip is only displayed in projects that have repeating instruments and/or repeating events.
- Bug fix: On a project's Project Setup page, some things would mistakenly display incorrectly (or display when they should not) if an administrator was using the "View project as user" feature.
- Bug fix: If using the survey setting "Save a PDF of completed survey response to a File Upload field" in which an Alert is set to send "Immediately" with the PDF as an attachment on the alert, the PDF would mistakenly not get attached to the alert. However, if the alert was set to send after a delay of any kind, the PDF would correctly get attached.
- Bug fix: When copying a project via the Copy Project page, in which the Survey Queue settings are being copied, the following Survey Queue settings would fail to

be copied to the new project: "Custom text to display at top of survey queue" and "Keep the Survey Queue hidden from participants?".

- Bug fix: Calculated field values were mistakenly not getting saved via cross-form or cross-event calculations (via Auto-Calculations) if the calculation was based on the value of a field being blank when the field's value was not being changed.
- Bug fix: When an action tag has text enclosed inside escaped apostrophes (e.g., @PLACEHOLDER='DD-MM-YYYY'), it would cause the Online Designer page to crash and throw a fatal PHP error. (Ticket #100543)
- Bug fix: It was recently discovered that due to a security fix added to REDCap 10.3.3 (Standard) and thus to all subsequent versions, some survey-specific features in REDCap do not function correctly if not using MySQL/MariaDB 5.5.5 or higher. Anyone using a version lower than MySQL/MariaDB 5.5.5 should upgrade their database to v5.5.5 or higher. The Configuration Check page now reflects MySQL/MariaDB 5.5.5 as being the minimum required database version that REDCap supports.
- Bug fix: When a project has thousands or more records and has several records being created every minute, there might exist a slight lag in the back-end Record List Cache immediately after creating a new record, in which it could cause REDCap to mistakenly assume that a record doesn't exist yet when in fact it was just created. This might cause a record's data to get duplicated as a new record if a user is not paying attention while attempting to create another record.

### Version 10.8.3

- Bug fix: The "Instant Adjudication" panel in CDP-enabled projects would mistakenly not be displayed on the CDP field mapping page in projects with record auto-numbering disabled.
- Bug fix: When copying a project that contains surveys with the e-Consent Framework enabled, it would mistakenly not copy over some e-Consent settings, such as the "force signature" fields and "Allow e-Consent responses to be edited by users".
- Bug fix: When running Data Quality rule H's "Fix calcs now" button, if any fields listed in the discrepancy list are calc or pseudo-calc fields that exist on a survey that was completed using the e-Consent Framework, it would not change the values of those fields (as expected) but would mistakenly not return any error messages regarding why the values weren't changed, which could be confusing to users. It now displays error messages (if any) after clicking the "Fix calcs now" button for DQ rule H.
- Bug fix: When an Automated Survey Invitation is set to be triggered by survey completion OR conditional logic, in which the ASI is set to send "Immediately" and also has the "Ensure logic is still true" checkbox checked in the ASI setup, if a user/participant completes the trigger survey while the conditional logic still evaluates as FALSE, it would mistakenly fail to send the survey invitation, but it



would correctly schedule any reminders for that survey invitation if the ASI has reminders defined. (Ticket #100770)

- Change: In addition to the stock Action Tags that come bundled with REDCap, the field view in the Online Designer now displays custom action tags (in pink text below the field) that are utilized by hooks or external modules. (Ticket #101045)
- Bug fix: When using X-instance Smart Variables in report filter logic (e.g., [current-instance] = [last-instance]), in which the report is returning data for multiple repeating instruments in the project, the report might mistakenly display rows of repeating instance data that should not be returned. (Ticket #100577)
- Bug fix: Fixed PHP 8 fatal error caused when parsing certain logic or calculations. (Ticket #101033)
- Bug fix: Descriptive fields could not successfully be embedded if the Descriptive field's field label does not contain any HTML tags and was not created using the rich text editor. (Ticket #101130)
- Bug fix: When opening an existing field for editing in the Online Designer, it would mistakenly convert <br> tags that exist in the "Action Tags/Field Annotation" text into literal line breaks. (Ticket #101178)

#### Version 10.8.4

- Improvement: The rich text editor is now utilized when editing the following system-level custom text settings on the "Edit a Project's Settings" page in the Control Center: "Custom text to display at top of Project Home page in project" and "Custom text to display at top of all Data Entry pages in project".
- Change/improvement: The custom text settings "Custom text to display at top of Project Home page in project" and "Custom text to display at top of all Data Entry pages in project" no longer default to being contained in a DIV with class="green" but can be styled with any color container (or none) using the rich text editor on the "Edit a Project's Settings" page. Any custom text values that existed beforehand will be grandfathered in and will still be displayed with the green class, but they can be modified after the fact to remove/change it.
- Change: The input element for @CALCTEXT fields was made wider on survey pages and data entry forms to be able to fit more viewable text.
- Bug fix: When displaying Action Tags beneath fields in the field view in the Online Designer, the last letter of the Action Tag name would mistakenly get removed for certain Action Tags.
- Bug fix: When a user is using the My Profile to reset their password while using certain versions of Internet Explorer, it might mistakenly fail to reset their password due to various JavaScript errors occurring on the page. (Ticket #100595)
- Bug fix: Fixed issue with text and embedded images displayed for an item on the Help & FAQ page. (Ticket #101384)
- Bug fix: Clicking on the "Past Day", "Past Week", etc. buttons near the top of the project Logging page might mistakenly add the "seconds" component of the

- timestamp into the time range filter fields, thus causing an error message to display on the page if the user puts their cursor inside the field and then then tabs out of the field. (Ticket #101369)
- Bug fix: If the survey setting "Save a PDF of completed survey response to a File Upload field" is enabled on a survey that also has the e-Consent Framework enabled, and the File Upload field specified for the "Save a PDF" setting exists on that same survey (often hidden by @HIDDEN-SURVEY), the PDF of the completed survey response would fail to be saved to the specified File Upload field when the participant completes the survey.
  - Bug fix: When using an Adaptive or Auto-Scoring instrument from the REDCap Library (e.g., PROMIS, Neuro-QoL), the "reset" link next to each question's radio buttons would mistakenly fail to reset the radio button, if selected.
  - Bug fix: The API Playground's example R code for the API Import File method was not correct and has been fixed. (Ticket #101454)
  - Bug fix: The API Playground's example R code for the API Export File method was not correct and has been fixed. (Ticket #101454)
  - Bug fix: When setting a survey's text-to-speech value to "English (United Kingdom) Female" on the Survey Settings page, it would mistakenly fail to save that setting correctly, thus preventing it from working as expected on the survey. (Ticket #101419)
  - Bug fix: When an administrator is processing a "Move to production" request on the To-Do List page, clicking the "Check For Identifiers" link in the dialog while processing the request would mistakenly make the dialog go blank/empty. It will now open a new browser tab. (Ticket #101426)
  - Bug fix: When a slider field is the first field displayed on a data entry form, the field receives focus when the form loads (which always occurs for the first field on any form), which makes it appear as if the field might already have a value. If the user misunderstands this and doesn't enter a value because they think it already has one (when it does not), data loss could result. Thus slider fields will no longer receive focus by default on a data entry form when they are the first field on the form. Note: This does not apply to surveys. (Ticket #101420)
  - Change: Small change to text describing the Designated Email Field on the Project Setup page.
  - Bug fix: If an Adaptive (CAT) survey has been downloaded into a project from the REDCap Shared Library, and the setting "Allow participants to skip questions?" has been set to "Yes" on the survey's Survey Settings page, a participant attempting to skip a survey question without answering it would mistakenly receive an error message saying that an unknown error occurred and that they cannot continue with the survey.
  - Bug fix: When fields are embedded using the ":icons" parameter in order to additionally embed the field's associated icons, depending on how the embedded fields are laid out on the page, the SPAN tag containing the icons might mistakenly

wrap to the next line and appear below the embedded field rather than displaying to the right of the field. (Ticket #101466)

- Bug fix: When the Smart Variable [survey-queue-link] or [survey-queue-url] is used in the email body of an Automated Survey Invitation or an Alert, if the record is being created via the API, which then triggers the sending/scheduling of the invitation or alert, the link/URL of the record's survey queue would mistakenly be blank (not displayed at all) inside the email body. (Ticket #101536)
- Bug fix: When a REDCap administrator attempts to add Stop Actions for a Dynamic SQL field on a survey instrument in the Online Designer, an error message would mistakenly be displayed, thus preventing them from doing so.

#### Version 10.8.5

- Improvement: The upload max file size for File Upload fields and general file attachments can now be increased or decreased on a per-project basis if needing to be different from the system-level settings as defined on the "File Upload Settings" page in the Control Center. This can be changed at the bottom of the Control Center's "Edit a Project's Settings" page for any given project.
- Change/improvement: The institution name is now included in the email subject for all emails sent regarding user expiration and account suspension due to inactivity. This is done to provide greater clarity to the user regarding which REDCap installation is being referenced in the email.
- Bug fix: When clicking "Cancel" inside the Logic Editor dialog, it might mistakenly revert the value of the text box being modified to the value of another text box that was previously edited via the Logic Editor while on that same page. (Ticket #101200)
- Updates to various third-party PHP packages.
- Bug fix: The rich text editors used for setting system-level custom text settings at the bottom of the General Configuration page in the Control Center would cause the custom text to display in its appropriate places but would mistakenly display a blank message when the custom text is blank, in which it should not display anything at all when the custom text is left blank.
- Bug fix: Calculations or conditional logic containing >1000 variables might mistakenly cause PHP to crash while processing and parsing them.
- Bug fix: Multi-page surveys that contain calculated fields might mistakenly take an unnecessarily long time to load each survey page due to inefficient calculation/logic processing on the server side.
- Change: More tweaks to improve the style of the text displayed inside the rich text editors because they still did not quite match the general style and CSS classes of text on REDCap webpages.
- Change: The language of the "Stop Action" prompt (displayed on survey pages when a Stop Action has been triggered) has been slightly modified to be more succinct and clear.

- Bug fix: When adding a new Table-based user on the "Add Users (Table-based Only)" page in the Control Center, it would mistakenly allow admins to create usernames with spaces or apostrophes when not using LDAP or LDAP+Table authentication, which is the only time that spaces and apostrophes are allowed in usernames. (Ticket #101773)
- Bug fix: When using the Smart Variables [survey-date-completed] and [survey-time-completed] in the Custom Record Label, they would mistakenly not have their date displayed according to the user's preferred date format (as defined on their My Profile page) but instead would display it always in Y-M-D date format. (Ticket #102141)
- Bug fix: Since calculations typically do not expect fields to have a ":value" signifier attached to field variables (because it is assumed), an error message would occur on a data entry form or survey page if any fields in branching logic, calc fields, or pseudo-calc fields (@CALCTEXT) have ":value" appended to the field variable (e.g., [race:value]). REDCap will now allow ":value" to be appended to field variables in branching logic or calcs/pseudo-calcs and will treat them as equivalent to using just the field variable. (Ticket #102149)
- Bug fix: The "Check For Identifiers" page was mistakenly displaying any HTML that existed in a field label, thus making it unreadable on the page in certain instances. It now strips all HTML from the field label when displaying it.
- Bug fix: When setting up the REDCap cron job on the Control Center's "Cron Jobs" page on a Windows server, the page failed to mention the important fact that the cron job's scheduled task needs to be set to "Run a new instance in parallel", which can be set under the Settings tab in the Windows Task Scheduler.
- Bug fix: On the Browse Users page in the Control Center, the "Display User List" button on the "View User List By Criteria" would fail to load the user list table if using Internet Explorer 11. (Ticket #90646)
- Bug fix: Clicking on the "Perl" tab at the bottom of the API Playground page when the "Import A File" API method has been selected would cause a fatal PHP error in PHP 8 and certain versions of PHP 7, thus causing that page to crash. (Ticket #102291)

## Version 10.9.0

- Improvement: New project-level option for importing email addresses for patients from an EHR via REDCap's Clinical Data Interoperability Services (CDIS) - When this option is enabled at the system level on the CDIS page in the Control Center, an administrator can then enable this option for any given project via the "Edit A Project's Settings" page. Once enabled for a project, users will then be able to map the "email address" field in either a Clinical Data Pull or Clinical Data Mart project, thus allowing them to import patient email addresses for the EHR. This option is disabled by default.

- Improvement: If a project contains more than 25,000 records, the Logging page will no longer display the record filtering drop-down at the top of the page but instead will display an auto-complete text box to allow the user to enter the record name if they wish to filter the logging by record. This behavior is similar to the "Add/Edit Records" page when not using record auto-numbering if a project contains more than 25,000 records.
- Major bug fix: When using randomization in a longitudinal project in which randomization strata fields exist on a different event than the randomization field, if the values of the strata fields are added or modified during the randomization process, their values would mistakenly not get saved or logged in the correct event, thus orphaning those values. (Ticket #103189)
- Major bug fix: If signature image files are being uploaded for Signature fields across multiple REDCap projects simultaneously (within milliseconds of each other), there is a small chance that one of the signature files might mistakenly get associated with a field in another project where someone was adding an image at the same moment. (Ticket #102764)
- Bug fix: If a survey participant receives a survey link via email in Microsoft Outlook (in either the desktop client or web version), in which Microsoft Outlook Safe Links has been implemented and has replaced the survey link in the email body, whenever the Safe Link version of the survey link is clicked by the participant, a Microsoft service (located in the IP address range 40.94.\*.\*) will make a POST request to the survey page about 10-20 seconds after the participant loads it (unbeknownst to them). This service actually submits the survey as if a real person was taking the survey, including submitting values for the survey questions. This means that for public surveys it is submitting false responses like a bot, and for private/unique survey links it is actually submitting the survey for the user, in which the participant is not able to enter their own response if they wait 10-20 seconds before submitting the survey themselves because this service has already completed the survey for them. To prevent this odd behavior by Microsoft Outlook Safe Links, REDCap survey pages now block all POST requests that originate via the IP address range 40.94.\*.\*, in which it immediately returns an error message.
- Bug fix: When record auto-numbering is enabled in a project, the process used to generate new record names is 2-5x slower than it should have been due to some inefficient structuring of SQL queries being used. This fix results in a performance improvement, especially for very active public surveys.
- Bug fix: If a project's "record list cache" is currently being built, which is done automatically via a back-end process, at the same time that new records are being created in the project, it might cause the cache not to be built for many minutes or hours (due to repeated failures while building the cache) if the project has lots of activity, all of which could cause the project to get extremely slow and might affect the performance of the overall system.
- Bug fix: In certain situations, such as public surveys being taken by hundreds or thousands of participants in a very short period of time, a project's "record list

cache" (which is built automatically via a back-end process) might mistakenly get reset/reverted, which causes the record auto-numbering mechanism to mistakenly use a very slow SQL query for generating the next proposed record name. This can cause the public survey to get increasingly slow as more participants attempt to take it.

- Change: The section for "e-Consent Framework: PDF External Storage Settings (for all projects)" on the File Upload Settings page in the Control Center has been moved to the Modules/Services Configuration page to be more consistent from an organizational standpoint with regard to other similar system-level features that utilize a separate SFTP or WebDAV server for securely storing files outside of REDCap.
- Bug fix: If the system's "Auto logout time" is set to a value of 2 or less, it will cause the user interface to become mostly unusable due to all the auto-logout popups being displayed immediately on every page. The minimum value for "Auto logout time" has been set to "3" on the Security & Authentication page to prevent this issue from occurring. (Ticket #102319)
- Bug fix: When a survey participant is taking an Adaptive or Auto-scoring instrument from the REDCap Shared Library, if a survey question contains stem text at the beginning of the question text (e.g., "In the past 7 days"), the stem text was not being as displayed sufficiently separated from the rest of the question text. Certain validated instruments require that they be more separated.
- Bug fix: When building a list of participants on the Participant List, a database query on that page was suboptimal and was causing the page to load slowly for some projects. That query has been modified to be faster.
- Change: For convenience, a hyperlink to the To-Do List was added inside the blue box at the bottom of the Project Modification Module page where an administrator reviews the drafted changes before approving/rejecting them.
- Bug fix: If a project contains File Upload fields but no records have any files uploaded to those fields, a user can click the ZIP icon on the Other Export Options page to download a "ZIP file of uploaded files (all records)", in which it will correctly state a notice that there are no files to download. However, if during that same session the user goes and uploads a file and returns to download the ZIP of all files again, it will mistakenly still say there is nothing to download, which is incorrect. If they log out and log back in again, this issue goes away. (Ticket #103117)
- Bug fix: A SQL query was slow and inefficient when determining if the "FHIR Statistics" link should be displayed on the Control Center's left-hand menu. This would sometimes cause all Control Center pages to load unnecessarily slowly.
- Bug fix: If a user is viewing a survey response on a data entry form to which they have viewing access but do not have privileges to edit survey responses, any fields with @NOW, @TODAY, or other similar Action Tags would mistakenly have new values pre-filled for them on the page if those fields did not already have a value. This should not happen since the current user is not able to modify any values (i.e., they are not allowed to submit the form).

- Bug fix: Data Quality rule H might fail to complete if the project contains a large amount (>300) calculated fields.
- Bug fix: When uploading an image file to a File Upload field in which that field is piped somewhere using the ":inline" parameter, it would mistakenly not pipe the inline image successfully on the page if the image's file extension was not all lower-case. (Ticket #103473)
- Bug fix: When using Missing Data Codes in a project, if multiple fields are embedded together inside another field on a data entry form, it would cause the click event of the "M" icon not to function correctly in which the Missing Data Code popup would mistakenly fail to open for those particular fields. (Ticket #103213)

#### Version 10.9.1

- Improvement: Further performance gains for projects with lots of records (25K+), especially during the process of creating new records via data entry forms and via data imports, which have been known to be slow in the past for large projects.
- Change/improvement: The "Phone (North America)" field validation now allows phone numbers that begin with "800" and "811".
- Bug fix: When using the survey feature "Prevent survey responses from being saved if the survey ends via Stop Action?" to prevent responses from being saved, if a one-page survey (which must be the first instrument in the project) contains a required field that is left blank when the survey is submitted, and then the survey later ends via a Stop Action, the saved data on the survey would mistakenly not get deleted when the survey ends.
- Bug fix: Fixed a compatibility issue when hosting REDCap using the PHP7 version of Google App Engine.
- Bug fix: If a report's filter logic contains only Smart Variables and no real project fields (e.g., [current-instance] = [first-instance]), the report would mistakenly not return any results for fields that exist on the first instrument if the first instrument is a repeating instrument.
- Bug fix: When uploading an Instrument Zip file into the Online Designer, any field variables in the Action Tag/Field Annotation text would mistakenly not get renamed (as they do for calculations and branching logic) if those variables exist on the instrument being uploaded and already exist as variables in the project. (Ticket #102968)
- Bug fix: When copying an instrument via the "Choose action" drop-down in the Online Designer, if a matrix of fields has a very long matrix group name, the action might fail and return an error message. (Ticket #103564)
- Bug fix: When performing a CSV data import via the Data Import Tool, if the CSV file contains a byte order mark (BOM), it can cause processing issues in certain situations, thus returning an error about not being able to find the Record ID field in the file. To remedy this, the BOM is now always removed (if it exists) before the CSV gets processed during the data import process.

- Bug fix: In a longitudinal project that uses Automated Survey Invitations in which a user deletes an entire event via the Define My Events page, any already-scheduled invitations via ASIs would mistakenly remain in the Survey Invitation Log but would no longer be associated with any event (i.e., partial orphaning). This would cause the invitations to still be sent, which is not expected, and thus causes issues because those invitations no longer point to a real survey/event anymore, in which they would display a message to the recipient opening the survey link that they are not a participant for that survey. This has been fixed so that any already-scheduled invitations connected to the deleted event will also get appropriately deleted. (Ticket #103930)
- Change: Increased the max execution time for cron jobs to 2 hours (was previously 1 hour) to allow for some long-running cron jobs to finish.
- Bug fix: Fixed typo in field label for Twilio-related phone options for Alerts & Notifications on the "Modules/Services Configuration" page in the Control Center.
- Change: Removed the "up arrow" and "down arrow" icons used to represent Field Embedding because the arrow was potentially confusing to some users, especially in the Online Designer. (Ticket #103988)
- Change: If a user in a project with lots of calc fields and/or lots of records attempts to execute Data Quality rule H in which it ends with an error after running too long or running out of server memory, it will now display the "Fix calcs now" button inside the results dialog (despite the error occurring) to at least allow the user to attempt to fix the calcs little by little even though the initial evaluation process of the calcs has failed.
- Bug fix: When deleting a project, due to a SQL query error, the contents of the project logging (e.g., data values that were saved, record names, other record-specific logged events) were mistakenly not being deleted from the log when the project gets officially deleted after 30 days (or if an administrator clicks the "Delete it now" option in the Control Center). (Ticket #103532)

## Version 10.9.2

- Improvement: Assign a user to a DAG at the same time as adding the user to the project - Whenever a user is being added to a project via the User Rights page, if Data Access Groups are being utilized in the project, a new option will appear (whether if adding the user with custom rights or if assigning them to a user role) that allows you to assign the user to a DAG at the same time as adding them to the project. This helps prevent a common issue where a newly added user might temporarily have access to the records of *\*all\** DAGs in the project prior to the user being assigned to a DAG immediately after getting added to a project. By making this two-step process a single step, it avoids possible data access issues for users who need to be assigned to a DAG.
- Improvement: When exporting a PDF of all record data via the "Other Export Options" page, a copy of the downloaded PDF will now be archived and stored in the File Repository, similar to how other data exports (i.e., CSV, SPSS) are archived. This will help



REDCap users keep better track of exactly what data was downloaded by someone when they export a PDF of all records in the project. Note: This does not apply to other PDF exports but only to the "all records" PDF export on the "Other Export Options" page.

- Improvement: The project logging page now displays more information for PDF Exports that contain data, such as displaying the record name, event, and instrument for the downloaded PDF.
- Change/improvement: When using the "Upload Users (CSV)" option on the User Rights page, it now displays a checkbox option in the dialog to allow the user to optionally send an email notification to all new users being added to the project via this import process. In previous versions, no users would be notified via email if they were added to the project via the "Upload Users (CSV)" option but only if added using other methods.
- Improvement: Minor performance improvement when loading the Participant List page, especially for surveys that are not repeating instruments and surveys that do not exist on repeating events.
- Change/improvement: There is a new check on the Configuration Check page for Windows web servers only that checks if the REDCap Cron Job's Scheduled Task is set to "Run a new instance in parallel". If the scheduled task is not set with that setting, then the REDCap Cron Job will not be able to run in parallel to itself, which is often needed. This check merely checks to see if the cron job has been running every minute over the past 3 days, and if there are gaps and it has not been running every minute, this implies that perhaps the Scheduled Task is not set properly to run in parallel.
- Change/improvement: The User Access Dashboard now displays "Last logged activity" for each project displayed on that page.
- Bug fix: If the body of an alert contains an inline image with a "src" attribute value containing "&file=" followed by an integer, there is a small possibility that an unrelated file that belongs to another REDCap project might get mistakenly attached to the alert that is sent.
- Bug fix: The User Access Dashboard was mistakenly displaying projects that have been "marked as completed". Such projects are not accessible by normal users and therefore should not be visible on that page.
- Bug fix: When a calc or @CALCTEXT field is used in the calculation of another calc or @CALCTEXT field, depending on the specific arrangement and order of the fields on the page, it could mistakenly cause the field to trigger itself over and over on the webpage, even when just initially loading a survey page or data entry form, in which it will use more and more web browser memory as time passes until the page crashes in the user's browser after several seconds or minutes. (Ticket #104217)
- Bug fix: When using the randomization feature and viewing any data entry form on an already-randomized record, in very specific circumstances the values of some embedded fields on the page might mistakenly not get saved successfully after being modified.
- Bug fix: On multi-page surveys, a section header might mistakenly be displayed on the page even though all fields in the section are hidden. (Ticket #66721b)

- Bug fix: For every webpage in REDCap, the HTML DOCTYPE declaration and the HTML tag's "lang" attribute were mistakenly hard-coded as "EN" (English). This was causing issues with regard to browsers assuming that the webpage was always in English, which is not always true. (Ticket #104487)
- Bug fix: If a user contains an apostrophe in their username and they attempt to create a new project, the process would fail due to a SQL query error. (Ticket #79647b)
- Bug fix: If a user contains an apostrophe in their username and an administrator clicks the "Edit user info" button on the "Browse Users" page when viewing their account, it would mistakenly display an error message saying "User names can only contain letters, numbers, underscores, hyphens, and periods" and would not let them leave the field, thus forcing the admin to refresh the page. (Ticket #79647c)
- Bug fix: When using Twilio for survey invitations, if a participant sends an SMS message to the Twilio phone number being used in a REDCap project, it might mistakenly reply back to the participant from a different Twilio phone number if the Twilio account has multiple phone numbers associated with it, in which the other number is associated with another REDCap project that is also using Twilio.
- Bug fix: Several places in REDCap were mistakenly still linking to the old Language Center on the REDCap Community site instead of the newer plugin page that now serves as the current Language Library.
- Bug fix: When exporting data to SAS, fields that have a number, integer, date, or datetime data type might mistakenly not have their "informat" or "format" syntax set correctly in the SAS syntax file, which could cause warnings or errors when loading the exported data into SAS. (Ticket #96569)
- Bug fix: If checkboxes are embedded and they are also piped to other places on the same page, then the piping action would mistakenly not occur in real time if the checkbox's choice label is clicked. Note: The piping would work correctly if the checkbox element itself is clicked or if the page was saved and reloaded, but it would not act in real time when clicking the label of the checkbox. (Ticket #104317)
- Bug fix: The Data Access Group drop-down filter was mistakenly not being displayed at the top of the project logging page for projects that contain DAGs. (Ticket #104574)
- Bug fix: If certain user-defined text (e.g., field labels, survey instructions) contain HTML character codes, there is a chance that the HTML character codes might not get parsed correctly when being sanitized for security purposes prior to being displayed on the page. This could cause them not to display correctly on the page or (worst case) cause the page to result in a PHP error if it gets stuck in an infinite loop while processing this text. (Ticket #104583)

### Version 10.9.3

- Improvement: When viewing files in the File Repository that are archived from a data export, it now displays the data export details (as seen on the Logging page) for each export listed in the table on the "Data Export Files" tab. This provides more context regarding the contents of the data in the archived export files.

- Change: The @PREFILL action tag has been renamed to @SETVALUE, which more accurately captures how it behaves. Some confusion had occurred regarding this action tag's behavior simply because of its name. This change to the name is backward compatible so that projects already using @PREFILL will still work with its legacy counterpart (i.e., @PREFILL and @SETVALUE will work equivalently), but @SETVALUE will be the preferred name going forward. The description of the @SETVALUE action tag in the Action Tags documentation notes this name change.
- Change: Any fields using the @PREFILL/@SETVALUE action tag will no longer be read-only/disabled on survey pages and data entry forms but will be editable. Some users had complained of the read-only attribute as being too restrictive and inflexible, thus preventing some valid use cases. If users wish to make the field read-only, it is recommended they simply add the @READONLY action tag as a means of maintaining the previous read-only behavior.
- Change: In many places in the REDCap code where MD5 hashing is performed on non-security-related things, the MD5 function has been replaced with the SHA1 function. (Note: MD5 is never used on any security-related code in REDCap.)
- Bug fix: When adding a user to a project by assigning them to a role, if the user's username contains spaces or apostrophes, the process might break due to a JavaScript error, thus preventing the user from being added to the project and role. Bug emerged in REDCap 10.9.2.
- Bug fix: When viewing a "PDF Export with data" logged event on a project's Logging page, it might mistakenly display "(Event #)" next to the record name when the project is not longitudinal. It should only display the event for that logged event in longitudinal projects. Bug emerged in REDCap 10.9.2.
- Bug fix: When generating System Notifications for REDCap Messenger during a REDCap upgrade, it was mistakenly using the PHP constant NOW instead of the MySQL function NOW() in a specific query. For that specific process, it now uses the MySQL function NOW() only when hosting REDCap on Google App Engine, otherwise it uses the PHP constant NOW, as it did in previous versions. Bug emerged in 10.9.2.
- Bug fix: When a field with the @PREFILL action tag is being piped somewhere on the same page, the field would mistakenly not have its value piped successfully when the page is loaded. (Ticket #104613)
- Bug fix: It was impossible to disable the "Auto logout time" setting (i.e., by setting its value to "0") on the Security & Authentication page in the Control Center because it would prompt the admin to enter a minimum value of "3". (Ticket #104680)
- Bug fix: If a File Upload field is embedded inside a checkbox choice label, in which the File Upload field has branching logic so that it is only displayed when the checkbox next to it is checked, the upload or download process for the File Upload field would mistakenly cause the checkbox to be checked/unchecked, thus causing the issue of hiding the File Upload field while trying to upload/download its file. (Ticket #104664)
- Bug fix: When a user attempts to assign a new user to a DAG and user role at the same time on the User Rights page, the pop-up for selecting the DAG and role would

mistakenly close immediately after selecting an item from one of the drop-downs. Bug emerged in REDCap 10.9.2 Standard. (Ticket #104655)

- Bug fix: In the "Compose Survey Invitations" dialog on the Participants List page, the "Display name" drop-down (when setting the "From" address) would mistakenly be disabled and could not be used. Bug emerged in REDCap 10.9.2. (Ticket #104749)
- Bug fix: When performing a data import that contains checkbox fields in which a checkbox has a Missing Data Code previously saved for it, any checkbox options being set to "1" for that field during the data import will mistakenly not remove the existing Missing Data Code from the field. Thus the field ends up with a Missing Data Code and other checked values, which should not happen. Additionally, when viewing the field on a data entry form afterward, the field would mistakenly still appear to have a Missing Data Code. (Ticket #104712)
- Bug fix: When an instrument has already been enabled as a survey and it does not have the e-Consent Framework enabled, if a user then navigates to the Survey Settings page and enables the e-Consent Framework for that survey, the "Allow e-Consent responses to be edited by users?" option is mistakenly not checked by default. That option should be checked by default when enabling the e-Consent Framework. (Ticket #104869)
- Change: Added a recommendation in the "Configure Twilio Settings" popup to suggest that the users consider adding a field that says, 'I agree to be contacted by text or phone' (or something similar) as means of them consenting participants to being contacted by text or phone.
- Bug fix: When a matrix checkbox field is embedded on a survey page or data entry form, and another field has branching logic that references that embedded matrix checkbox, the branching logic would fail to work successfully when the trigger checkbox is checked/unchecked. (Ticket #104866)
- Bug fix: If an administrator has set a project to be "Offline", users could inadvertently still use the API for that project, which should not be allowed. (Ticket #104931)
- Bug fix: Depending on the username or the name of a Data Access Group, the "(+1)" text that signifies the amount DAG Switcher assignments might mistakenly not display next to the user's current DAG on the User Rights page's table of users.
- Change: Slight change in an SQL query used to generate the Participant List that improves the loading performance of that page. (Ticket #95693)
- Bug fix: If a user/participant adds a signature to a Signature field in which they resize the popup to make it larger while signing it, it would result in a larger image being saved that would mistakenly not always fit correctly in an exported PDF of that instrument. (Ticket #104927)
- Bug fix: Data Quality rules A and B might mistakenly not display all valid discrepancies for a field if the field's branching logic contains certain Smart Variables. (Ticket #99077)
- Bug fix: When performing an API data export of CSV data in EAV data format, it would mistakenly display the CSV "event" header as "event\_id" instead of "redcap\_event\_name".

- Bug fix: When importing data via the API in EAV format (where type=eav) and using the value "new" to perform auto-numbering of the redcap\_repeat\_instance field, it was mistakenly not returning an error for this. This is not allowed since the "new" value for redcap\_repeat\_instance cannot be used when type=eav but only for type=flat. This has also been added to the API documentation to inform users of this limitation. (Ticket #104491)
- Bug fix: If a user is idle on a data entry form, and the red auto-logout message appears and states that their session has ended, if they attempt to close that browser tab, it would mistakenly display the prompt asking them if they wish to leave the site. It should not display that prompt. (Ticket #104948)

#### Version 10.9.4

- Bug fix: When upgrading to REDCap version 10.9.2 from a version lower than 10.5.0, the REDCap Messenger system notification that announces the @SETVALUE action tag was mistakenly still referring to it by its previous name (@PREFILL).
- Bug fix: The description of the @SETVALUE action tag mistakenly mentioned that it makes the field read-only, which is incorrect. (Ticket #105072)
- Bug fix: When a @CALCTEXT field is used in a longitudinal project, in which its value gets set but all other fields on its instrument do not have a value saved, a red form status icon would mistakenly be displayed for its instrument on the Record Home page and Record Status Dashboard. The status icon should instead remain gray in this case even when calc fields and @CALCTEXT fields have a value. (Ticket #105061)
- Bug fix: PHP 8 compatibility error in LDAP authentication code. (Ticket #105100)
- Bug fix: If questions are being prepopulated on a survey using the @DEFAULT action tag, in which those fields are also being piped to other places on that same survey page, then the piping would mistakenly not occur when the survey page loads but only after one of the piped fields' values are modified on the page. Bug emerged in REDCap 10.9.3. (Ticket #105220)
- Bug fix: If a record is deleted via the Delete Record API method, and then another record is created later having the same record name, the Data History popup for a given field would mistakenly list the logged events from the previously-existing record when instead it should not. (Ticket #105144)
- Bug fix: If using the :inline piping parameter for a File Upload field when uploading an image file to the field while the piping location exists on the same page, deleting the image from the File Upload field via the "Remove file" link would mistakenly not remove the inline image that is piped on the page until the page is reloaded. (Ticket #105106)
- Bug fix: If submitting a public survey, and the record ID field is referenced in the equation of a calculated field located on another instrument, the calculated field's value would mistakenly not get saved. (Ticket #105178)
- Bug fix: If using Twilio telephony services for surveys, in which the "Control each participant's invitation preference using a multiple choice field" option is enabled and references a field that exists on an instrument that is not enabled as a survey, then

modifying that field's value on a survey/form would mistakenly not change the participant's invitation preference as reflected in the Participant List. (Ticket #104907)

- Bug fix: When using Twilio telephony services in which multiple projects are using the same Twilio Account SID but have different Twilio phone numbers, some of the Twilio logs on the Twilio website might mistakenly not get erased as they should (REDCap automatically deletes all Twilio logs after each SMS or phone call for privacy purposes).
- Bug fix: If a repeating survey has one repeating instance of the survey that has been locked at the instrument level, then if another repeating instance (that is not locked) of that same survey is opened, it would mistakenly display an error to the participant saying that the response has been locked, which is not true.
- Bug fix: When using the Data Resolution Workflow and viewing an opened query that has not yet been assigned to a user, it would mistakenly not allow you to assign the query to a user. (Ticket #105205)