

## REDCap LTS Update to Version 10.6.x User Experience Changes and Improvements

### Version 10.6.3 (released on 2020-12-30) CHANGES IN THIS VERSION:

- 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.

### Version 10.6.2 (released on 2020-12-18) CHANGES IN THIS VERSION:

- 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.

### Version 10.6.1 (released on 2020-12-10) CHANGES IN THIS VERSION:

- 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.

### Version 10.6.0 (released on 2020-11-30) CHANGES IN THIS VERSION:

- 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.
- 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].
- 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)

Version 10.5.2 (released on 2020-11-20) CHANGES IN THIS VERSION:

- 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)
- 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.

Version 10.5.0 (released on 2020-11-12) CHANGES IN THIS VERSION:

- New action tag: @PREFILL - 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 @PREFILL="????", in which the desired value should be inside single or double quotes. A field with @PREFILL 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., @PREFILL='Name: [first\_name] [last\_name], DOB: [dob]'. For checkbox fields, simply separate multiple checkbox values with commas - e.g., @PREFILL='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 @PREFILL 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 @PREFILL 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., @PREFILL='2007-12-25' - regardless of the field's set date format. NOTE: The only difference between @PREFILL and @DEFAULT is that @DEFAULT is only applied when an instrument has no data yet, whereas @PREFILL will always be applied on an instrument, meaning that @PREFILL 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., @PREFILL='[my\_dropdown:value]'.
- 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.

  - 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".
  - 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.'.
- 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.

Version 10.4.1 (released on 2020-11-06) CHANGES IN THIS VERSION:

- Change: On the Data Quality page, the text boxes used for adding/editing custom data quality rules were enlarged and are now resizable.

Version 10.4.0 (released on 2020-10-30) CHANGES IN THIS VERSION:

- New action tag: @CALCDATE - Performs a date calculation by adding or subtracting a specified amount of time from a specified date or datetime field and then provides the result as a date or datetime value - e.g., @CALCDATE([visit\_date], 7, 'd'). The first parameter inside the @CALCDATE() function should be a text field with date, datetime, or datetime\_seconds validation, in which you may specify (if needed) the event and repeating instance - e.g., @CALCDATE([baseline\_event][visit\_date], 7, 'd'). The second parameter represents the offset number amount that should be added or subtracted. It can be a decimal number or integer. Tip: To subtract (i.e., go backwards in time), use a negative number. The third parameter represents the units of the offset amount, which will be represented by the following options: 'y' (years, 1 year = 365.2425 days), 'M' (months, 1 month = 30.44 days), 'd' (days), 'h' (hours), 'm' (minutes), 's' (seconds). The unit option must be wrapped in quotes or apostrophes. NOTE: Both the source field and the result field must be a text field with date, datetime, or datetime\_seconds validation. It is important to realize that a field with @CALCDATE will not be editable on the survey page or data entry form, and the field will function almost exactly like a normal calculated field, in which its value may get updated via a data import, when running Data Quality rule H, or in real-time during normal data entry on a form or survey.
- New action tag: @CALCTEXT - Evaluates logic that is provided inside a @CALCTEXT() function and outputs the result as text, typically performed with an if(x,y,z) function - e.g., @CALCTEXT(if([gender]='1', 'male', 'female')). NOTE: It is important to realize that a field with @CALCTEXT will not be editable on the survey page or data entry form, and the field will function almost exactly like a normal calculated field, in which its value may get updated via a data import, when running Data Quality rule H, or in real-time during normal data entry on a form or survey. If desired, it is possible to return the value as a number - e.g., @CALCTEXT(if([age] >= 18, 'adult', 5\*[other\_field])).

- New feature: Data Access Group import/export and DAG-User assignment import/export - The Data Access Groups page in a project now displays a drop-down list of options for users to import/export Data Access Groups, which allows users to bulk create or rename DAGs via a CSV file. It also allows for the import/export of DAG-user assignments via CSV file to bulk assign/reassign/unassign users from DAGs in a project. Note: The DAG-user assignment import affects only a user's \*current\* DAG assignment; thus, it has no effect on the DAG Switcher assignments for the user.
- New feature: Data Quality Rule import/export - The Data Quality page in a project now displays a drop-down list of options for users to import/export custom Data Quality rules via a CSV file. Note: This does not apply to the pre-defined DQ rules (rules A-I). Also, when DQ rules are imported, the process is additive only, meaning that the CSV upload cannot replace or edit existing DQ rules but will only add new ones to the project.
- Improvement: On a user's My Profile page, there is a new setting under "Notification Preferences for REDCap Messenger" to enable/disable email notifications specifically for General Notifications and System Notifications. This setting will be enabled by default for all users. This is intended to help users who ignore messages from Messenger to become more informed about messages sent from administrators (via General Notifications) and to become more aware of new features (via System Notifications). Note: Users with this option enabled will not receive an email notification for General/System Notifications if they have not logged into REDCap in the past 6 months. Also, if you wish to automatically disable this setting for all users, simply run the following SQL immediately after the upgrade has completed: `update redcap_user_information set messaging_email_general_system = 0;`

Version 10.3.6 (released on 2020-10-09) CHANGES IN THIS VERSION:

- Improvement: The filename of a file uploaded to a File Upload field will now be displayed in a downloaded PDF with saved data and also in the download button for File Upload fields displayed in reports. The filename will also be displayed as the value of a File Upload field in a data export (excluding CDISC ODM exports, including API exports).
- Change: When editing a field in the Online Designer, if the field's variable name is longer than 26 characters, the page no longer gives the warning popup about this when clicking the Save button in the Edit Field dialog but only at the point when the variable name is actually changed. This new behavior should be a lot less annoying to users with very long variable names.
- Change: Some warning text was added to the Edit Alert dialog on the Alerts & Notifications page in the event that the user selects the third radio option for Step 1A while selecting the "every instance of a repeating instrument" option in Step 1C, which can cause the alert to be triggered off of every new repeating instance that is added to \*any\* repeating instrument in the project. Such behavior is often not intended, and could mistakenly cause many unintended alerts to be sent. New warning text: "WARNING: It is generally not recommended to use 'Using conditional logic...' in Step 1A together with the option '...on every instance of a repeating instrument' in Step 1C. If these are used together, that means that this alert will be trigger by EVERY repeating instance that is saved for ANY repeating instrument in the project."

Version 10.3.5 (released on 2020-10-02) CHANGES IN THIS VERSION:

- Change: When a user submits production changes via Draft Mode in the Online Designer, if the changes are approved automatically, it no longer sends an email to the user themselves. This email was superfluous since the user was already notified of this in the user interface. (Ticket #91415)
- Change/bug fix: When clicking the "Re-evaluate Alerts" button on the Alerts & Notifications page, it was only re-evaluating alerts that had only conditional logic and thus was not re-evaluating alerts that had the first two options selected in Step 1A of the Edit Alert dialog (i.e., "When a record is saved on a specific form/survey..."). The Re-evaluate Alerts now considers all three options in Step 1A when it is evaluating.

Version 10.3.0 (released on 2020-08-27) CHANGES IN THIS VERSION:

- New feature: Added "Language of text to be spoken" for the "Text-To-Speech" survey functionality, which is available on the Survey Settings page. For several years, REDCap has had a Text-to-Speech feature for surveys that, when enabled, allows questions and other text on survey pages to be converted into natural-sounding audio for the participant to hear. Up until now, it supported English only, but now REDCap users may utilize the Text-to-Speech feature in a variety of non-English languages and voices, assuming that the survey text is in a non-English language. This includes Arabic, Brazilian Portuguese, English (UK and US), French, German, Italian, Japanese, and Spanish (Castilian, Latin American, and North American).
- New feature: Users may re-evaluate some or all Automated Survey Invitations for all records in a project. If an ASI has been modified after data has already been entered in the project, users may click the "Re-evaluate Auto Invitations" button in the Online Designer, which will re-evaluate selected ASIs for all records to ensure that invitations get properly sent or scheduled based on the new conditions of the ASI (otherwise they could only be triggered if each individual record had data modified). If a user modifies the conditional logic of an ASI, it will recommend that they utilize the "Re-evaluate Auto Invitations" functionality. If an ASI has the "Ensure logic is still true..." option checked, then it is possible during this process that some already-scheduled invitations might get removed (and thus would no longer be scheduled) based on the new conditions.
- New feature: Users may re-evaluate some or all Alerts & Notifications for all records in a project. If an alert has been modified after data has already been entered in the project, users may click the "Re-evaluate Alerts" button on the Alerts & Notifications page, which will re-evaluate selected alerts for all records to ensure that notifications get properly sent or scheduled based on the new conditions of the alert (otherwise they could only be triggered if each individual record had data modified). If a user modifies the conditional logic of an alert, it will recommend that they utilize the "Re-evaluate Alerts" functionality. If an alert has the "Ensure logic is still true..." option checked, then it is possible during this process that some already-scheduled notifications might get removed (and thus would no longer be scheduled) based on the new conditions.
- Improvement: When deleting an invitation from the Survey Invitation Log (either as a single invitation or using the multi-select option to delete many invitations at once), it now provides a new option in the dialog prompt to "Permanently cancel this invitation?", in which the phrase "permanently cancel" implies that the invitation cannot be re-triggered/scheduled again in the

future even if the ASI conditions are met again. If the user chooses to uncheck the option, then the scheduled invitation will be removed, but could possibly get re-triggered in the future if the ASI conditions are met again (assuming it was originally scheduled via an ASI).

- Improvement: The Survey Invitation Log has a new filter drop-down option to view “only deleted invitations” (i.e., permanently cancelled invitations).
- New developer method: `REDCap::reserveNewRecordID()` - A thread-safe way to reserve a new record ID in a project prior to creating the record by using record auto-numbering or by manually providing a new record name to reserve as the `$recordIdToReserve` parameter. NOTE: This method will not create the record but will merely reserve the record ID so that it will not be used by any other processes in REDCap when creating a record in the near future. Once the record ID is reserved, it will remain reserved for up to 72 hours. When using this method, the assumption is that after reserving a new record ID, you should create a new record with that record name shortly thereafter.
- Improvement: Import Records API method has a new parameter “`csvDelimiter`” to specify the delimiter character when sending data in CSV format. Options include: comma `'`, (default), `'tab'`, semi-colon `';`, pipe `'|'`, or caret `'^'`.
- Improvement: Large performance improvement when importing lots of records (via Data Import Tool, Mobile App, API, or `REDCap::saveData`) when record auto-numbering is enabled in a project and the import process is forcing the new records to be auto-numbered on the fly. (Ticket #90747)
- Improvement: Smart Variables and regular field variables can now be piped into the URL of Project Bookmarks. Note: While many Smart Variables can be piped successfully outside of a record context (e.g., `[redcap-base-url]`), all field variables (e.g., `[age]`, `[dob]`) and some Smart Variables (e.g., `[record-name]`, `[previous-event-name]`) can only be piped into the URL while the user is inside a record context, such as viewing the Record Home Page or data entry form. (Ticket #75783)
- Improvement: When using the “Custom Surveys for Project Status Transitions” feature (as seen near the top of the User Settings page in the Control Center), administrators may now create a new field having the variable name “`project_id`” in any of the custom survey projects, in which it will automatically save the PID value (Project ID) of the project for which the user is completing the survey. This will allow the survey responses for these custom surveys to be easily identifiable with the project for which each corresponds. Note: This will make project tracking much easier for these. Regarding the “`project_id`” field being added, if the custom survey project is longitudinal, the field must exist in the first event of the first arm in the project.
- Improvement/change: When using the “Custom Surveys for Project Status Transitions” feature, the embedded “Create Project” survey is now utilized when a user is copying a project. In previous versions, the survey was only displayed with creating new projects on the Create New Project page. (Ticket #90911)
- Change: When a user is using the E-signature feature at the bottom of a data entry form, the database query to determine the user's last login time was not optimized and might be very slow in certain circumstances.

- Change: Slight re-organization of buttons at the top of the instrument list on the Online Designer.

Version 10.2.3 (released on 2020-08-21) CHANGES IN THIS VERSION:

- Improvement: When importing a CSV file of data on the Data Import Tool or when importing a CSV Data Dictionary, users may now specify the delimiter of the CSV file as a Comma (default), Tab, or Semicolon.
- Improvement: In previous versions, the DAG Switcher would not be very performant if there existed very many users and/or Data Access Groups within a project, thus the DAG Switcher would (by design) be automatically disabled for projects in those situations, which was not ideal with regard to user experience. The DAG Switcher is now no longer limited in that way and will now function fully regardless of there being many users and DAGs in a given project.
- Change: Due to the amount of users complaining about the fact that SAS exports will truncate long field labels and long multiple choice option labels, this behavior has been changed so that those will no longer be truncated in the SAS syntax file for SAS data exports. Note: This behavior to truncate labels in SAS exports was originally changed in REDCap 10.0.3.

Version 10.2.1 (released on 2020-08-07) CHANGES IN THIS VERSION:

- Improvement: The "Response Limit" option on the Survey Settings page now allows for the use of the rich text editor when defining custom text to display to respondents on the survey when limit is reached.
- Change: For the option "Survey-specific email invitation field" on the Survey Settings page, it adds a note that the survey-specific email field is not required to be set if a project-level email field has already been defined in the project. This was added to reduce confusion for users.
- Change: When viewing the Participant List page, if the survey has the "survey-specific email invitation field" enabled, it will now display a small notice about this fact near the top of the Participant List table to inform the user and provide more clarity regarding the source of the email addresses being used for that particular survey.
- Change: A warning message is now displayed for users that attempt to use both the Survey Queue and Survey Auto-Continue features together in the same project. If one is already enabled while attempting to enable the other, the warning will inform the user that these two features can sometimes conflict with each other.

Version 10.2.0 (released on 2020-07-31) CHANGES IN THIS VERSION:

- New feature: Integration of Paul Litwin's Stealth Queue external module
  - New "Keep the Survey Queue hidden from participants?" setting in the "Set up Survey Queue" dialog on the Online Designer
  - This setting will keep the Survey Queue table hidden from participants, and will force Auto Start to be enabled for all queue-activated surveys. This is useful if users wish to use the Survey Queue to automatically guide survey participants to the next survey without displaying the queue of surveys.
- Improvements to the Data Resolution Workflow feature
  - When a user is opening a new data query and assigning the query to a user, there are new options to send a notification to the assigned user via email and/or REDCap Messenger to inform them about their query assignment.

- Attachment files that have been uploaded to an opened data query may now be deleted after the fact, if needed. Note: As a precaution, only REDCap administrators may delete such attachments.
- For existing data queries, users may now be assigned to an opened query after the fact, and if the data query already has a user assigned to it, it may be reassigned to another user.

Version 10.1.5 (released on 2020-07-24) CHANGES IN THIS VERSION:

- Improvement/change: When running Data Quality rule H on a project with many hundreds or thousands of records, the rule might mistakenly time out or might crash due to a PHP memory limit error, in which none of the calculations could ever be corrected by rule H if it timed out or crashed. To prevent this, rule H will perform an internal batching of 100 records at a time to ensure that the rule will execute more efficiently and thus will finish successfully. Note: The internal batching process will occur invisibly, so nothing will appear different at all with regard to user experience.
- Change: In the field-view display of the Online Designer, each field will no longer have a link to open the instructional popup for Field Embedding (since this is a bit repetitive), but instead there will be a single floating box on the right side of the page for informing users on how to utilize Field Embedding and for opening the popup. (Ticket #88418)

Version 10.1.1 (released on 2020-07-09) CHANGES IN THIS VERSION:

- New feature: Select and modify multiple fields together on the Online Designer - Users may select multiple fields on the Online Designer by holding the Ctrl, Shift, or Cmd key on their keyboard while clicking on the field in the table, which will reveal the options to Move, Copy, or Delete all the selected fields. To make users aware of this feature, a floating note now appears near the right side of the page in the Online Designer with instructions on how to use this.
- Change: When a user accesses a project for which their user privileges have expired, it now tells them to contact the project owner rather than telling them to contact the REDCap administrator.

Version 10.1.0 (released on 2020-06-30) CHANGES IN THIS VERSION:

- Change/improvement: In Alerts & Notifications, the email "To" field that is used for an alert now allows fields having custom email validation (i.e., added manually in the redcap\_validation\_types database table) to be utilized as the recipient. Previous versions only allowed fields to be used that had the explicit "email" field validation.
- Change: Support for Internet Explorer 9 has been removed.