Version 6.15.0 - (released 6/22/2016)

- New feature: Enhanced radio buttons and checkboxes for surveys - A new survey option "enhanced radio buttons and checkboxes" can be found on the Survey Settings page in the Online Designer in which a user can enable the feature so that radio buttons and checkboxes are displayed differently on the survey page, in which they appear as large animated buttons that look more modern and stylish than traditional radios and checkboxes. This new feature can be enabled for any given survey in a project where it will transform *all* radios and checkboxes on the survey into the enhanced version. Note: This feature does not work for radios and checkboxes in a matrix.

- Improvement: Server-side field validation - In addition to the existing client-side field validation that is performed on surveys and data entry forms, REDCap will now also perform server-side validation to validate all submitted values prior to saving them to ensure they are valid values. This means verifying the value via a text field's field validation type, or if a multiple choice field, verifying that the value is indeed a valid choice for the field. If they are considered invalid values, then the value will not be saved, and the page will be reloaded with an error message (similar to the Required Fields error message) informing the user that invalid values were entered and should thus be corrected, if desired. This new server-side validation improves the overall quality of data being entered on surveys and form.

- New feature: Create custom public survey link - On the "Public Survey Link" page in a project that utilizes surveys, users now have the option to create their own custom public survey link that begins with "http://is.gd" (e.g., http://is.gd/diabeticsurvey), in which the custom URL will simply redirect to the public survey in their project. They may enter a desired URL, and it will check if the URL has already been taken. If not, it will store that custom URL in the project so that it is always able to be obtained on the Public Survey Link page.

- New Action Tag: @HIDEBUTTON - Hides the 'Now' or 'Today' button that is typically displayed to the right of date, time, and date/time fields.

- New Action Tag: @APPUSERNAME-APP - In the REDCap Mobile App, this action tag sets a field's value to the app username of the current mobile app user - i.e., their username in the mobile app, which is not necessarily the same as their REDCap server username that can be captured using @USERNAME. NOTE: For use only in the REDCap Mobile App.

- Improvement: Updated "Help & FAQ" page. Has better navigation and is easier to read.

- Improvement/change: If a user has had access to REDCap for more than 7 days and they are logging in to REDCap's home page, then it will redirect them to the My Projects page after a successful login. This is to save them a click, assuming that they have no need to view the home page at this point. Note: Due to certain limitations, this feature is only available for installations using "LDAP", "Table-based", or "LDAP & Table-based" authentication methods.
• Improvement: Users can now only send the request one time for moving a project to production or requesting that a production project be deleted. In previous versions, the request could be sent many times and could thus cause confusion for the administrator regarding which request should be processed. Additionally, any user that has submitted either of these types of requests may also manually cancel the request by clicking a "Cancel request" button next to the disabled button where the request was originally submitted.

• Improvement: Administrators can now add comments to items in the Control Center To-Do List. A comment can be added or edited for any item in the To-Do List.

• Change: Modified the "Table-based User Mgmt" link on the Control Center's left-hand menu so that its text says "Add Users (Table-based Only)" instead for greater clarity.

• Change: Added new video "Mobile App Project Setup" on the REDCap Mobile App page in a project that discusses the process of setting up the mobile app for a given project.

• Change: If an entire data entry form is disabled due to a user's form-level privileges being set to "read-only", the user would mistakenly not be able to add an E-signature to the form even if they have E-signing privileges. This is inconsistent since they can Lock or Unlock the form but cannot E-sign it. Users with E-signing privileges will now be able to e-sign a data entry form that is disabled. This is allowable since Locking and E-signing privileges are separate from data entry privileges.


• Change: A link to the Control Center was added (for super users only) at the top left of a project page (to the right of the "My Projects" link).

• Change: All links pointing to pages on the Trac wiki have now been replaced with their corresponding pages on the new REDCap Community website (https://community.projectredcap.org) since the Trac wiki at devguard.com has now been officially retired.


• Improvement: A field's Section Header and Field Annotation are now displayed in the Codebook for the project.

• Change: Updated some of the language in the Install module to provide better guidance and clarity for the installation process, and also to remove language that caters heavily to phpMyAdmin as a preferable MySQL client. Additionally, text was added to stating that MariaDB is a completely compatible alternative for MySQL as a database back-end.
• Change: The attribute autocomplete="off" was added to all text input fields on surveys and data entry forms (and to the form tag itself) to allow institutions to better comply with certain regulatory requirements, even though most modern browsers ignore this attribute.


NEW FEATURES & IMPROVEMENTS:

• New feature: Administrator To-Do List

• New page in the Control Center that allows all REDCap administrator requests to be processed in a single place. This includes approving production drafted changes, API token requests, create/copy projects (if applicable), and move projects to production (if applicable).
• All requests will be listed in a table on this page and will include all associated information about the request, such as time of request, requestor, project, request type, etc.
• If desired, email notifications can be disabled on this page if administrators no longer wish to receive the emails associated with these requests, but instead wish to solely use the To-Do List page without any email notifications.
• NOTE: This page will always reflect the current status of all requests, whether or not they were processed using the tables below or using the link inside the email to the administrator (if email notifications are enabled).

• New action tag: @USERNAME - Sets a field’s value to the username of the current REDCap user. If this is used on a survey, the value will be “[survey respondent]”. Once the value is captured, it will not be changed when visiting the page at a later time.
• New action tag: @DEFAULT - Sets a field’s initial value.

- This action tag allows a field to have a specified default value when viewing the field on a survey or data entry form that has not yet had any data saved for it (i.e., when the form status icon is gray or when a survey has not been started).
- The format must follow the pattern @DEFAULT="????", in which the desired default value should be inside single or double quotes.
- For checkbox fields, simply separate multiple checkbox values with commas - e.g., @DEFAULT='1,3,6'. NOTE: The default 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.
- For text fields, you may even perform Piping inside the default value to pipe data from another field in the project - e.g., @DEFAULT="Name: [first_name] [last_name], DOB: [dob]".
- 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., @DEFAULT='2007-12-25'.
- If this action tag is used on a survey question that is utilizing a survey pre-fill method (via query string or POST submit), then the pre-fill values supplied will override the default values provided by the action tag.
• New hook: redcap_every_page_top - Allows custom actions to be performed at the top of every page in REDCap (including plugins that render the REDCap page header)
• New hook: redcap_every_page_before_render - Allows custom actions to be performed by every PHP script in REDCap (including plugins) before the script itself begins to be formally processed.
• Improvement: When in production, users can now request that a project be deleted by an administrator. The request will be added to the To-Do List in the Control Center, and the administrator will be emailed (if email notifications are enabled).
• New method for hooks/plugins: REDCap::getCopyright - Returns the REDCap copyright text to be displayed on all pages - i.e., "REDCap X.X.X - © 20XX Vanderbilt University". This is recommended to be used if a hook is utilized to alter an existing REDCap page so much that the normal page footer that contains the REDCap copyright notice is no longer displayed. Thus you may use this method to display the copyright notice on that page but in a different way or in a different location. This is to conform to the REDCap license agreement that stipulates that the REDCap copyright notice should not be removed from any REDCap pages (this excludes plugins).
• Change: To be more consistent and simpler with regard to how REDCap administrators are notified about user-submitted requests, the “Person who will approve changes for production projects” option has been removed from the system-level and project-level configurations. Instead, REDCap will now use the “Project Contact Person” name and email for *all* requests rather than using the two options for various requests, which can be confusing regarding which will be used for what type of request. This will keep things much more simplified going further.
• Change: On the General Configuration page and Edit A Project's Settings pages in the Control Center, the option “Project Contact Person” has been re-labeled as “Name of REDCap Administrator” to improve clarification regarding what this option refers to.
• Change/improvement: Piping can now work recursively in case the initial data that is piped also contains variables that should then be piped.
• Change/improvement: The mailto link at the bottom left of a project has now been replaced with a "Contact REDCap administrator" button that, when clicked, opens the user’s default email client and pre-fills the email body with their username, the title of the current project, and a link to the project. This should help administrators in case this information is not provided by the user themselves, which is often the case.
• Change: When adding a new field in the Online Designer, the Custom Alignment setting no longer resets back to "Right Vertical (RV)" alignment every time as it did in previous versions, but instead it now reverts to the alignment value of the previous field that was opened beforehand while on that page.
• Change/improvement: The Browse Projects page in the Control Center now displays a project's PID (i.e, its project ID number) next to the project title to allow administrators to more easily identify a project, especially when some projects are similarly named and thus difficult to tell apart.
• Improvement: Added an "Edit" link on the left-hand project menu in the "Project Bookmarks" panel to allow users to easily navigate to the Project Bookmarks page if they have Project Design/Setup privileges.
Improvement: When copying a user role on a project's User Rights page, the Edit Role popup now opens immediately after copying a role to allow the user to more easily modify the newly created role.

Change: Small clarification in instruction text when a REDCap administrator is creating an API token for a user.

Change: If the REDCap web server already has a large value set for the "max_execution_time" setting in PHP.INI, then REDCap will not lower that setting's value if REDCap's required value is smaller than the system value.

Change/improvement: The REDCap installation package now comes with the hook_functions.php file and a hooks directory, and the path to the hook_functions.php file is set automatically during the installation process.

Change/improvement: REDCap now uses the value of session.cookie_secure in the PHP.INI configuration file when setting the default cookie parameters. This allows for the "Secure" cookie attribute to be set to True if session.cookie_secure=On in PHP.INI. By default, the "Secure" cookie attribute is set to False.

Version 6.13.3 - (released 4/22/2016)

- Change: Added a compatibility notice for the embedded audio option for attachments for Descriptive fields on surveys and data entry forms. The compatibility notice informs the user that the embedded audio option for attachments is not 100% compatible for all audio file types across all web browsers. This is not a limitation in REDCap, but is simply a compatibility issue across web browsers. The most compatible audio file types to use are MP3 and WAV. Other audio types may work on some browsers but not in others. Unfortunately, there is not always an easy way to know what audio file will work for which browser, especially as operating systems and web browsers evolve over time.
- Improvement: When a user opens the Data History popup or the Data Resolution Workflow popup for a given record/field, the popup should now open a bit more quickly than before if it had been slow in the past, especially for projects with many records and/or data changes.

Version 6.13.2 - (released 4/19/2016)

- Change: Disabled the backspace-goes-back "feature" of browsers, which could cause unexpected issues and confusion if a user accidentally clicked the backspace button on a page.
- Change: Matrix fields are now no longer allowed to have a Field Label. (Ticket #1188)
- Change: The width of date and datetime fields was increased on surveys with "Large" or "Very Large" text so that the entire value is always visible.

- Change: The Configuration Check page now checks to make sure that the DOM extension in PHP is installed.
- Change: The enhancement added in a recent version to prompt the user to have a text field’s value automatically trimmed if the value begins or ends with whitespace was mistakenly being applied to Notes fields when it should have only been applied to Text fields.


- New feature: Responsive design of REDCap web pages
- Now has a more flexible and responsive user interface to conform to and fit screens on devices of all sizes.
- Major improvement for how surveys and data entry forms look on mobile devices (i.e., phones), including automatic font increase and forced left-alignment of questions for better user experience when screen real estate is limited.
- REDCap now has the Bootstrap front-end framework embedded inside it, thus allowing plugin/hook developers to utilize all the Bootstrap UI elements and features.
- Technical note: The “label” CSS class used for field labels in the question table on surveys and data entry forms has been replaced with “labelrc” to prevent conflicts with Bootstrap.
- Improvement: Slider fields on surveys and data entry forms are now much easier to use on mobile/touch devices.
- Improvement/change: When a user moves a project to production (or requests to have a project moved to production) on the Project Setup page, it now forces them to choose if they want to delete all project data or to keep all existing records. In previous versions, it would pre-check the “delete all data” checkbox, which could sometimes cause users to unwittingly lose all their data if not paying attention to what they are agreeing to.
- Improvement/change: A new system-level setting allows administrators to hide the option where users can export an entire project as a single REDCap XML file (i.e., project backup). Because some institutions are wary of users feeling the need to download an entire project and its data, they may unwittingly download unencrypted project backups (containing data) to store on their local drive, which could be a security or privacy concern. This option can now be disabled on the Modules Configuration page in the Control Center.
- Change: The Record Locking Customization page in a project now allows normal users to view the locking and e-signature information in read-only format when in production. In previous versions, only super users were allowed to view this page in production status.
- Improvement: The User Rights page in a project now prevents users from mistakenly assigning themselves to a role that does not have User Rights privileges, which could inadvertently cause them to be locked out of that page in their own project.
- Change: On the Survey Settings page in the Online Designer, the text for the "Delete Survey" button at the bottom of the page has been changed to "Delete Survey Settings" to reduce confusion regarding what the button does.

• New feature: Live Filters for reports

• Any report can now have up to 3 fields that can be designated as a Live Filter. The Live Filters are displayed as drop-downs when viewing a report at the top-right of the page, and selecting a Live Filter will cause the report to be re-run in real time using the Live Filter value as a filter.

• If exporting a report that has a Live Filter selected, the export popup window will provide an extra choice to allow the user to export the full report data set or to apply the currently selected Live Filter to the report when exporting.

• Note: Currently only multiple choice fields can be used as Live Filters (as well as Events, if longitudinal, and Data Access Groups, if any exist).

• Improvement: The left-hand menu of each project now has collapsible sections so that a user may collapse the section for easier navigation or to have a more compact page. The collapsed state of each section in each project is remembered using a cookie on the user’s device so that when a user returns to the project in the future, the menu section remains in the same collapsed/non-collapsed state as the last time they viewed it on that device.

• Improvement: Performing data exports or viewing reports for projects containing very large amounts records, especially in conjunction with lots of events and/or fields, should not halt the export process very often anymore. In the past this might cause REDCap to display an error message saying "the data export is not able to complete" due to the large amount of data being exported or viewed. In the case when too much web server memory is used during the data export process, REDCap will now invisibly revert to a backup process that utilizes a local temp file on the server for temporarily storing data during the export process (rather than relying on server memory solely for this). This will allow the export process to complete successfully; however, the process will take several times longer to complete than if simply using server memory.

• Change: When exporting an entire project as a REDCap Project XML file, it now provides the option "Include all uploaded files and signatures?", which is unchecked by default. In previous versions, it automatically included all uploaded files and signatures in the resulting XML file, but this often caused the export to fail due to the project either containing many files or containing very large files.

• Change: A new parameter "exportFiles" (boolean) was added to the REDCap::getProjectXML developer method for plugins and hooks. The parameter, which defaults to FALSE, specifies whether or not the resulting XML will include all files (base64 encoded) that were uploaded for File Upload and Signature fields for all records in the project. Please note that while the previous version (6.12.0) exported all files in the resulting XML by default, it no longer does that and must now be specified explicitly.

• Change: A new parameter "exportFiles" (boolean) was added to the "Export Project XML" API method. The parameter, which defaults to FALSE, specifies whether or not the resulting XML will include all files (base64 encoded) that were uploaded for File Upload and Signature fields for all records in the project. Please note that while the previous version (6.12.0)
exported all files in the resulting XML by default, it no longer does that and must now be specified explicitly.

Version 6.12.0 - (released 2/26/2016)

- **NEW FEATURES & IMPROVEMENTS:**
  - Improvement: New option to download charts displayed on the "Stats & Charts" tab of the "Data Exports, Reports, and Stats" module. The charts will download as PNG image files.
  - New feature: Users may now export a project’s data in CDISC ODM format. This new option is found on the “Data Exports, Reports, and Stats” page in the data export popup when selecting export format.
  - New feature: An entire REDCap project can now be exported as a single XML file (which happens to be in CDISC ODM format). The file includes events, arms, instruments, fields, and project attributes – even Descriptive field attachments. If the project contains data, then the user can also optionally export the project data (including uploaded files) in the same XML file. This XML file can serve as a snapshot or backup copy of the project, and can even be imported on the Create New Project page to create a clone (more or less) of the project.
  - New feature: Create a new project from a REDCap XML file (or other XML file containing metadata in CDISC ODM format). This is a new option on the Create New Project page, which allows the user to optionally upload their XML file rather than choosing a project template or creating the project from scratch.
  - New and improved SDK developer methods for plugins and hooks
    - REDCap::getProjectXML – New method – Returns the contents of an entire project (records, events, arms, instruments, fields, and project attributes – even uploaded files and Descriptive field attachments) as a single XML file, which is in CDISC ODM format.
    - REDCap::getData – Parameter for data format now accepts value of “odm” to export data in CDISC ODM format. This only returns data (not the project structure/metadata).
    - REDCap::saveData – Parameter for data format now accepts value of “odm” to import data in CDISC ODM format. This only returns data (not the project structure/metadata).
  - New and improved API methods
    - Export Project XML – New API method – Returns the contents of an entire project (records, events, arms, instruments, fields, and project attributes – even uploaded files and Descriptive field attachments) as a single XML file, which is in CDISC ODM format.
    - Export Records – Parameter for data format now accepts value of “odm” to export data in CDISC ODM format. This only returns data (not the project structure/metadata).
- Import Records – Parameter for data format now accepts value of “odm” to import data in CDISC ODM format. This only returns data (not the project structure/metadata).
- Create Project – New optional parameter named “odm” can be used to pass the ODM XML string of an entire project’s structure (the same as output by the Export Project XML method) when creating a new project using a Super API Token. This will allow you not only to create the project with the API request, but also to import all fields, forms, and project attributes (and events and arms, if longitudinal) as well as record data all at the same time.

- Change: Added a new check to confirm that the version directory of the current REDCap version (e.g., redcap_v6.12.0) has not been mistakenly removed from the web server, thus resulting in a strange non-styled Home page or My Projects page.

**Version 6.11.5 - (released 2/12/2016)**

- New feature: Domain whitelist for cross-domain HTTP access control - By default, for flexibility purposes, AJAX requests (via [JavaScript](https://developer.mozilla.org/en-US/docs/Web/JavaScript)) can be made to REDCap from any domain/URL. If you wish to restrict this so that only certain domains can make cross-domain AJAX requests to REDCap, then you will need to set the domain name of all allowed access control origins (i.e., the domain of the URLs) in the text box to the right. If the text box is left blank (default), then any domain will be able to make cross-domain AJAX requests to REDCap. Restricting access control to specific domains is generally considered to make REDCap more secure to prevent against possible Cross-Site Scripting attacks by malicious users. This setting can be found at the bottom of the Security & Authentication page in the Control Center.
- Improvement: When an instrument has been enabled as a survey and the survey has the setting "Auto-continue to next survey" enabled, then a down arrow icon will now appear in the Online Designer for that survey to denote that this setting has been enabled.
- Change: New videos for REDCap Mobile App

**Version 6.11.3 - (released 1/29/2016)**

- Change: "action" was added to the reserved variable name list to prevent users from creating fields with that variable name since it can cause [JavaScript errors](https://developer.mozilla.org/en-US/docs/Web/JavaScript) to occur on a survey or form in certain browsers when the field is used in branching logic. (Ticket #1093)
- Change: The Help & FAQ page was updated.
- Change/improvement: If the Survey Login feature is enabled in a project, it now offers a "Show value" checkbox immediately below each login field, and when checked it will remove the password mask from the field to allow the participant to view the value as clear text. Removing the mask may be necessary in certain cases, such as entering specially formatted values like dates/times and also when using mobile devices, on which it might be more difficult to type with accuracy. Note: The password mask feature for text fields on the survey...
login form were added recently in version 6.11.0, whereas in prior versions the password fields had unmasked clear text values. (Ticket #1084)

Version 6.11.2 - (released 1/16/2016)

- Change: When performing the field mapping step in the Dynamical Data Pull (DDP) module in a project, it would display a question mark icon next to each field in the tree of source fields even if the metadata web service does not provide a "description" attribute for the field. This could be confusing since the icon would essentially serve no purpose in this case. It now only displays the icon if a description is actually provided by the metadata web service for a given field.
- Change: When a project is in production status, it was too difficult for users to find the Check For Identifiers page, so it has now been added to the bottom of the Project Setup page when the project is in production.

Version 6.11.1 - (released 12/22/2015)

- Change/improvement: When users are being assigned to a role while being granted access to a project on the User Rights page, it now displays a checkbox option to have the user emailed in order to notify them of having been granted access to the project. In previous versions, there was no way to notify a user when being added to a project via role assignment. (Ticket #1051)

Version 6.11.0 - (released 12/18/2015)

- NEW FEATURES & IMPROVEMENTS:
  - New API methods (please see the API documentation embedded in REDCap for details regarding these methods)
    - Arm import/delete - for longitudinal projects only; requires API Import privileges and Project Design/Setup? privileges
    - Event import/delete - for longitudinal projects only; requires API Import privileges and Project Design/Setup? privileges
    - Import instrument-event mappings - for longitudinal projects only; requires API Import privileges and Project Design/Setup? privileges
    - Import metadata, i.e. data dictionary - available only in development status; requires API Import privileges and Project Design/Setup? privileges
    - Import users (import new users into a project while setting their user privileges, or update the privileges of existing users in the project.) - requires API Import privileges and User Rights privileges
    - Create project
- Allows a user to create a new REDCap project while setting some project attributes, such as project title, project purpose, enable/disable record auto-numbering, enable the project as longitudinal, and enable surveys in the project.
- This method requires a Super API Token that must be granted to a user by a REDCap administrator on the API Tokens page in the Control Center.
- After the super token has been granted, the user can view the super token on their My Profile page.

- Improvement: Added support for hosting REDCap in Google Cloud AppEngine? (with Google Cloud Storage). When hosted on the Google Cloud Platform, you can set file storage option to “Google Cloud Storage” on the File Upload Settings page and provide the names of the buckets where the files will be stored. It also works seamlessly to connect with Google Cloud SQL that would host the MySQL backend for REDCap.
- Improvement: REDCap now supports secure connections to MySQL using SSL/TLS. The following PHP variables must be added into database.php in the main "redcap" directory (the first 3 are required at minimum, while the last 2 might be optional for certain configurations).

  1. $db_ssl_key = ''; // e.g., '/etc/mysql/ssl/client-key.pem'
  2. $db_ssl_cert = ''; // e.g., '/etc/mysql/ssl/client-cert.pem'
  3. $db_ssl_ca = ''; // e.g., '/etc/mysql/ssl/ca-cert.pem'
  4. $db_ssl_capath = NULL;
  5. $db_ssl_cipher = NULL;

- Improvement: Users may now download and upload arms and events as a CSV file on the “Define My Events” page, as well as download and upload the instrument-event designations as a CSV file on the “Designate Instruments for My Events” page. Using these methods, users can now fully reconstruct the structure of a project if they wish to copy it, in which they could download the data dictionary file, arms file, events file, event mappings file, and data export file, and then upload all of them into a new project to recreate it. In previous versions, this could only be done for classic projects, but this now allows it to be done for longitudinal projects. When uploading the CSV file for arms, events, or event mappings, it will display a preview to the user to show what changes will be made, such as which things may be added, modified, deleted, or stay the same.
- Improvement: “select all” and “deselect all” links were added to the “Designate Instruments for My Events” page to allow users to more easily check off the checkboxes if many instruments and/or events exist in the project.
- Improvement: When assigning projects to Project Folders, there is now a checkbox option to hide archived projects in the project list. This should make it easier for users to ignore those projects during the folder assignment process.
- Improvement: A new optional API parameter named "filterLogic" was API method “Export Records”. filterLogic should be a string of logic text (e.g., [age] > 30) for filtering the data to be returned by this API method, in which the API will only return the records (or record-events, if a longitudinal project) where the logic evaluates as TRUE. This parameter is
blank/null by default unless a value is supplied. Please note that if the filter logic contains any incorrect syntax, the API will respond with an error message.

- **Improvement:** The Activity Graphs page in the Control Center now includes two new charts: 1) Database Usage (MB), and 2) Usage by Uploaded Files (MB).*

**BUG FIXES & OTHER CHANGES:**
- **Change/improvement:** If the Survey Login feature is enabled in a project, it now performs a password mask for the text fields on the survey login form in order to obscure the participant's password value(s). In previous versions, the password fields were displayed as clear text.
- **Changes to existing API methods**
  - **Change:** For the API method “Export Users”, many more user privilege rights are included in the response. The following is the full header list:
    username,email,firstname,lastname,expiration,data_access_group,data_access_group_id,design,user_rights,data_access_groups,data_export,reports,stats_and_charts,manage_survey_participants,calendar,data_import_tool,data_comparison_tool,logging,file_repository,data_quality_create,data_quality_execute,api_export,api_import,mobile_app,mobile_app_download_data,record_create,record_rename,record_delete,lock_records_all_forms,lock_records,lock_records_customization,forms
  - **Change:** For the API method “Export Users”, when requesting a response in CSV format, form-level rights are returned in a different format in order to prevent possible duplication of other new user privileges that are returned, in which all form rights will now be consolidated into a single column named “forms” (whereas in previous versions each form was represented as an individual column). The last column of the CSV string returned will have “forms” as the header, and the value will be each [unique] form name and its numerical value as a colon-separated pair with all the form value pairs strung together as a single comma-separated string (e.g. “demographics:1,visit_data:3,baseline:1”). See a full CSV example below of two users exported from a project.

username,email,firstname,lastname,expiration,data_access_group,data_access_group_id,design,user_rights,data_access_groups,data_export,reports,stats_and_charts,manage_survey_participants,calendar,data_import_tool,data_comparison_tool,logging,file_repository,data_quality_create,data_quality_execute,api_export,api_import,mobile_app,mobile_app_download_data,record_create,record_rename,record_delete,lock_records_all_forms,lock_records,lock_records_customization,forms
harrisp@gmail.com,Joe,User1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,0,0,0,0,0,"demographics:3,baseline_data:1,visit_lab_data:1,patient_morale_questionnaire:1,visit_blood_workup:1,completion_data:1,completion_project_questionnaire:1,visit_observed_behavior:1"
taylorr4@gmail.com,Joe,User,2015-12-08,group_a,1,0,0,2,1,1,1,1,1,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,"demographics:3,baseline_data:1,visit_lab_data:1,patient_morale_questionnaire:1,visit_blood_workup:1,completion_data:1,completion_project_questionnaire:1,visit_observed_behavior:1"
- Change: For the API method “Export Users”, when requesting a response in XML format, the main parent tags at the beginning and end of the response will no longer be <records> but instead will be <users> to be less confusing (since “records” often denotes something else in REDCap) and also to be more consistent with how other API methods return XML items.

- Change: For the API method “Export Users”, the new “data_access_group_id” field was added, in which it returns the numerical group ID number that the “data_access_group” field used to return in previous versions. And now, the unique group name of a user’s Data Access Group is returned for the “data_access_group” field rather than the numerical group ID number.

- Change: The API method “Export Instrument-Event Mappings” now returns a different structure if exporting as JSON or XML (however, the CSV format will remain the same). It will now export with “arm_num”, “unique_event_name”, and “form” as attributes of each item/mapping, as seen in the JSON/XML examples below.
  - JSON example: ```json```
    ```json```
    ```json```
  ```json```
  ```xml```
  ```xml```
- Improvement: For “Export Project Information” API method, the following two project attributes were added:
  - secondary_unique_field – The variable name of the secondary unique field defined in the project (if applicable).
  - display_today_now_button – Value will be “0” or “1” (i.e. False or True). If “0”, then do NOT display the today/now button next to date/datetime fields on data entry forms and surveys. If “1” (default), display them.

- Change: When using an API token associated with a super user account, the API now recognizes the API user as having maximum privileges (i.e., super user privileges) with regard to API requests, whereas in previous versions it only inferred the user’s privileges literally from what is defined on the project’s User Rights page, which was inconsistent with how super user rights are recognized by REDCap in the front-end user interface.

- Change/improvement: The Control Center’s System Statistics page now has the counts for Total Logged Events and Dynamic Data Pull (DDP) separated as separate AJAX calls since it was causing the whole table to load very slowly on the page.
• Change: If using Google OpenID authentication and a user logs in for the first time, it will now capture the user's first name, last name, and email address and add them to the user's REDCap account automatically.

• Improvement: When installing REDCap, it is now possible to use the MySQL socket value in the database configuration by adding the PHP variable $db_socket to database.php in the main "redcap" directory.