

Upgrading REDCap: When, How and Who?

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REDCapCon ANZ 2023

This is not a drill, folks

–Rob Taylor, April 2023

Agenga

- When
 - Planning
 - Upgrade cycle
- How
 - The upgrade
 - Testing
- Who

When



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When – Planning

- What is the scope of your upgrade?
 - Application only? PHP? Operating System?
 - Which version are you targeting?
- Planning your upgrade timing
 - When is the quietest time?
- Change management and communications with users
 - Does your institution have a change approval process?
- Trial your upgrade on your development environment
 - See what might happen, document the steps

When – Upgrade cycle

- Monitor the changelog
- Target a release a few minor versions away from the latest
- Upgrade Dev, test for a few days/weeks as extensively as possible
- Upgrade Prod, test as thoroughly as you can
- Rinse
- Repeat

Don't let your system fall too far behind!

How



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How – The upgrade

- Application code
 - Download code from Community and put in place on server
 - Requires privileged access to VM
- SQL upgrade
 - Guided by application
 - REDCap detects database issues and offers to fix
 - Requires fairly high database privileges (grants)
- Configuration Check
 - Nonversioned files; download and put in place
 - Additional updates, extensions

Code + Database

redcap_updates_password	
redcap_updates_password_encrypted	1
redcap_updates_user	
redcap_version	13.6.1
report_stats_url	https://redcap.vanderbilt.edu/consortium/collect_s...
reports_allow_public	2
restricted_upload_file_types	
rich_text_attachment_embed_enabled	1

cron.php
database.php
edocs/
ehr.php
favicon.ico
hook_functions.php
hooks/
index.php
install.php

languages/
o.svg
ules/
_info.php
gins/
cap/

redcap-setup.php
redcap_connect.php
redcap_v12.5.10/
redcap_v12.5.5/
redcap_v12.5.9/
redcap_v12.6.0/
redcap_v13.1.0/
redcap_v13.2.0/
redcap_v13.3.1/

redcap_v13.3.4/
redcap_v13.4.13/
redcap_v13.4.4/
redcap_v13.4.5/
redcap_v13.6.0/
redcap_v13.6.1/
robots.txt
server_settings.php
surveys/
temp/
update_pull.php
upgrade.php
webtools2/
xdebug_info.php



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Database upgrade script

Contains database queries required to replay all database modifications made between your current version and your upgraded version

Depending on the difference between versions, this script can be quite large

Sets `redcap_config.redcap_version`

Option A , run in browser (needs Easy-Upgrade)

Option B, download script and execute against DB directly (needs privileges on DB)

Rollback

You should dump database and snapshot server/s before upgrading

In case of issues:

- First step in rolling back is to revert redcap_config.redcap_version

```
UPDATE redcap_config SET value = "13.6.0" WHERE field_name = "redcap_version";
```

- If issues persist, restore database from dump, then finally revert to server snapshot

Config Check

Success message from REDCap. Go and run the config check.

Nonversioned files may need to be updated

New extensions to be installed, mbstring, imagemagick

Database Structure Incorrect

How – Testing

- Smoke test
 - Did anything blow up? No? Good.
- Regression testing
 - Have a user account for non-super user testing
 - Have a project that exemplifies as much varied functionality as possible
 - Test cases should *not* prioritise new functionality (since no one will be using it yet)
- Testing effort should scale with the upgrade scope
 - Patch, quick testing
 - Minor release, minor testing
 - Major release, major testing

Who



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Who

Probably not you

- REDCap usually stores very sensitive data
- The impact of vulnerabilities can be enormous
- Protect yourself from when things go wrong
- You need your IT to support you
- They'll need you to be the application experts
- Tap into existing structures
- Change approval process



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In Summary

- Get your hands dirty in upgrading dev environments
- Build your SQL and Sysadmin skills
- Push IT to take responsibility and allocate resources
- IT's support may come with red tape, change approval process
- This is worthwhile to protect your data