

ARCS-15: REDCap Backup

Version 1.0.0

ARC Advanced
Research
Computing



THE UNIVERSITY OF BRITISH COLUMBIA

REDCap Backup

1. Introduction

1.1 Purpose

This Standard documents the expected backup, verification, and retention levels for the UBC Advanced Research Computing (ARC) REDCap Platform. This ensures sufficient coverage of backups to mitigate small errors, disaster recovery, and forensic investigations.

1.2 Scope

This Standard applies to all servers that collectively house the REDCap platform managed by ARC. This includes the associated **REDCap Flex** and **REDCap Solid** production, pre-production, and development; application and database instances.

2. Standard

2.1 Data Backup Frequency

ARC performs all database backups and reviews backup reports to confirm success or failure.

Scheduled Data Backups for the REDCap server follow UBC Information Technology's business practices with respect to backup schedule, retention, and security. The REDCap database is backed-up twice daily to a disk in the Production environment. Encrypted database backups on the local disk are then backed up and replicated through EduCloud backup.

Unscheduled Data Backups must be performed before events including, but not limited to, hardware and/or software upgrades or maintenance.

2.2 Protection of Backups and Backup Media

Backup media must be retained with the UBC IT recovery, data retention, and record management requirements where applicable. Backup media must be treated as being of an equivalent classification level as the highest risk information contained in the source information system.

UBC ARC REDCap servers are backed-up through UBC's EduCloud and follow [UBC IT's business practices](#) for backup, retention, and security.

The REDCap database is backed-up twice daily to a flat file encrypted with GnuPG with a 4096-bit key to a disk in the Production environment.

2.3 Backup Retention

2.3.1 Server Backup Retention

The REDCap server backup follows [UBC IT's business practices](#) for server backup retention.

2.3.2 Database Backup Retention

The REDCap database backups are retained, in accordance with the [ARCS-05 Data Retention and Destruction](#) standard.

2.4 Validating and Testing Backups

Data backups and the restoration process must be tested regularly to verify their reliability. Backups must be verified and logged monthly and after regular maintenance windows. Backup restoration tests must occur at least quarterly to ensure backups can be successfully restored.

The validity of the backup will be tested by ensuring the backup file size is a reasonable size.

Backup restoration will be validated by testing (restore into Dev):

Quarterly

- Data recovery

Annually

- File recovery
- VM recovery
- Application function

2.5 Restoration

Restoration from backup is only available at the project-level. It is designed to protect against significant data-loss/corruption events. Restoration of individual records or groups of records is not possible. The existence of backups should not be considered as a mitigation for record-level errors or data entry/deletion incidents. Should a project request data restoration due to user error or data entry/deletion incident(s), the **ARC System Administrators** will attempt to restore the data if feasible, but is unable to guarantee the possibility of data restoration from backup in all cases.

Projects will be permanently deleted 30 calendar days after a deletion event. If project restoration is requested within this time window, it is possible for the **ARC System Administrators** to restore the project. **ARC REDCap Support** follows UBC's [standard business hours](#), and enough notice must be given to guarantee restoration. If the request is received outside of the 30 day window, there is no guarantee the project will be restored.

The **ARC Platforms Team** is responsible for assessment and approval of project restoration from backup.

3. Procedures

Both **REDCap Flex** and **REDCap Solid** instances follow the same general procedure for backups. The REDCap database is backed-up twice daily to a GnuPG 4096-bit key encrypted database to a disk in the Production environment. Encrypted database backups on the local disk are then backed up and replicated through EduCloud backup.

3.1 Restoration Requests

Project Owners may contact **ARC REDCap Support** if there has been a deletion event, to inquire about the possibility of data restoration.

3.2 Project Restoration

Projects are permanently deleted 30 calendar days after a deletion event. Within 30 calendar days, **ARC System Administrators** may restore the project within REDCap. After 30 calendar days, projects are permanently deleted and must be restored from a backup.

3.2.1 Restoration Within 30 Calendar Days

1. Contact **ARC REDCap Support** via redcap.support@ubc.ca.
2. The **ARC System Administrators** will restore the project.

3.2.2 Restoration After 30 Calendar Days

If a restoration request is received after the 30 day period, or close to the 30th day (e.g. after business hours, during the weekend), such that the restore cannot happen within the 30 day window, the **ARC Platforms Team** will determine whether or not the project can be restored from a database backup.

3.3 Database Restoration

Database restoration follows ARC deployment procedures for the REDCap database.

4. Responsibility

4.1 ARC Systems Team

Is responsible for validating and testing data backups, and carrying out the restoration procedure should the need arise.

4.2 ARC Platforms Team

Is responsible for restoring projects deleted within 30 calendar days, where feasible.

Is responsible for assessment and approval of project restoration from backup.

5. References

UBC ARC Glossary of Standards

UBC ARC Glossary of Terms

UBC IT Retention Practices: <https://it.ubc.ca/services/web-servers-storage/virtual-server-service/backup-options>

UBC Standard Hours of Work: <http://www.hr.ubc.ca/administrators/managing-staff/hours-of-work/>

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