

REDCap Platform-as-a-Service

Empowering Smaller Institutions
for Data Collection and Management

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- ▶ Key Benefits
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About REDCap

- ▶ Developed by VUMC in 2004 to manage clinical data
- ▶ Now deployed at 7000 sites in 154 countries, 300 in Australia
- ▶ Universities, MRIs, Government depts, Health, other non-profits
- ▶ Supports data entry and surveys, longitudinal data collection, extensible
- ▶ Excellent security features
- ▶ De facto standard for collection of health and sensitive data



About REDCap

envisage

Empower families

Welcome to ENVISAGE support come together community.

We understand the unique challenges of concern or disability, and our mission is to provide a safe space where you can learn, grow and thrive. Together, we can build a community of families who support one another.


Through our collaborative work with experienced caregiver peers, you can exchange insights, and discover new ways to support your daily life. Our extensive online resources are designed to support you as you navigate developmental concerns or disability connection.

You'll have the chance to connect with others on your journey, forming connections based on shared understanding. At ENVISAGE, you'll be at the heart of everything we do. Join us with hope, support, and limitless possibilities for our extraordinary children.

About Us | Envisage Families | Find a Program | Partners | Envisage Service Providers | First Steps

Research supports participants

By [Sean McKeown](#) - 6 October 2022



Researchers from Australia are studying the impact of social isolation, physical activity and mental health on fall programs and strategies.

Known as the [Study Towards](#), 400 people over the age of 65 were recruited to participate in the study.

nature medicine

Explore content | About the journal

nature > nature medicine > brief communications

Brief Communication | [Open access](#)

Antibody responses in individuals previously vaccinated

[Joseph E. Ebinger](#), [Justyna Fert-Bober](#), [James L. Stewart](#), [Jennifer E. Van Eyk](#), et al.

Nature Medicine 27, 981–984 (2021)

152k Accesses | 379 Citations | 19 Publications


Abstract

In a cohort of BNT162b2 (Pfizer–BioNTech) spike-specific IgG antibody levels at 14 days after a single vaccine dose in individuals with prior infection were more prominent for those with prior infection than in individuals without prior infection. Similar results were observed for the second dose.

Research Tuesdays: Covid pawsitive . . .

Posted on [Mar 7 2022](#) by [Stan Denham](#)

Our most loyal companions could soon be among our most valuable frontline health workers.



Trials of COVID-19 sniffer dogs under way at Adelaide Airport.

Remarkably, specially trained dogs can now identify positive COVID-19 cases faster, earlier and more reliably than any rapid antigen test currently used worldwide.

Dr Anne-Lise Chaber is a senior lecturer in the University of Adelaide's School of Animal and Veterinary Sciences.

"Specially trained dogs are able to sniff out and identify positive COVID-19 cases faster and earlier than PCR and more reliably than the rapid antigen tests currently used," she said.

The University of Adelaide is leading this research in Australia, sharing results with collaborators spanning 22 countries.

"Specially trained dogs are able to sniff out and identify positive COVID-19 cases faster and earlier than PCR and more reliably than the rapid antigen tests currently used."

— Dr Anne-Lise Chaber, senior lecturer in the University of Adelaide's School of Animal and Veterinary Sciences



About REDCap - Drawbacks

- ▶ Little to no support from VUMC apart from access to the community
- ▶ Licensees responsible for deploying and maintaining the software
- ▶ IT often reluctant to support REDCap for research
- ▶ Vulnerabilities in early 2023 exposed this lack of support



REDCap and Intersect

- ▶ Over 10 years experience in REDCap: using, managing, hosting, supporting and developing
- ▶ DRAs work closely with member universities to support users and administer REDCap environments
- ▶ Intersect is a partner of the REDCap consortium, contributing code, external modules, training materials and leadership in the A/NZ region
- ▶ Intersect provides REDCap training for all members
- ▶ Intersect currently hosts several REDCap environments on our Nectar node

Platform-as-a-Service is a best-practice solution built on our experience supporting this application



REDCap PaaS

- ▶ Production and Development REDCap environments
- ▶ Localhost or external database server
- ▶ Choice of flavour/size depending on profile
- ▶ Stack consists of Ubuntu LTS, PHP, nginx, MySQL, Intersect Space for volume storage
- ▶ Built on the Intersect node of the Nectar Research Cloud



Key Benefits

- ▶ A robust and reliable system with minimal downtime
- ▶ Access to the latest version
- ▶ Coordinated stack upgrades
- ▶ Support for application upgrades
- ▶ Access to dev environment for testing upgrades, modules
- ▶ Access to Expert Hours
- ▶ No hardware overheads
- ▶ Reduce Shadow IT
- ▶ No need for in-house sysadmin



Size and Pricing

| | Small | Small + Database | Medium | Medium + Database | Large | Large + Database |
|-------------------------|---|---|--|--|--|--|
| | Single major research project, small institute | | Enterprise solution for large institute or university | | Enterprise solution for large universities | |
| Production Environment | Application server 2 vCPU 4GB RAM 30GB Disk Ubuntu Localhost MySQL DB Daily system backups | Application server 2 vCPU 4GB RAM 30GB Disk Ubuntu Localhost MySQL DB Daily system backups Database server 1 vCPU, 2GB RAM, 30GB Disk MySQL DB Daily system backups | Application server 4 vCPU 8GB RAM 30GB Disk 50GB Volume store (eDocs) Ubuntu Localhost MySQL DB Daily system backups Database server 2 vCPU, 4GB RAM, 30GB Disk MySQL DB Daily system backups | Application server 4 vCPU 8GB RAM 30GB Disk 50GB Volume store (eDocs) Ubuntu Localhost MySQL DB Daily system backups Database server 2 vCPU, 4GB RAM, 30GB Disk MySQL DB Daily system backups | Application server 8 vCPU 16GB RAM 30GB Disk 100GB volume store (eDocs) Ubuntu Localhost MySQL DB Daily system backups | Application server 8 vCPU 16GB RAM 30GB Disk 100GB volume store (eDocs) Ubuntu Daily system backups Database server 4 vCPU, 8GB RAM, 30GB Disk MySQL DB Daily system backups |
| Development Environment | 1 vCPU, 2 GB RAM, 30 GB Disk Ubuntu Localhost MySQL DB | | | | | |
| Expert hours | 1 day per year | 1 day per year | 2 days per year | 2 days per year | 3 days per year | 5 days per year |
| Cost | \$5k per year | \$7k per year | \$8k per year | \$11k per year | \$12k per year | \$16k per year |



Options

This platform comes with options around sizing and architecture.

Sizing options reflect the anticipated pattern of usage. The platform can be resized any time if the usage pattern changes.

Each size can be configured with either a localhost database, or a separate database server as per the customer's security/performance requirements.

Each VM in the platform is backed up nightly by Intersect Hosting Services.

Small size:

- ▶ Single research projects being run for a finite period
- ▶ Institutes and small universities just getting started with REDCap

Medium size:

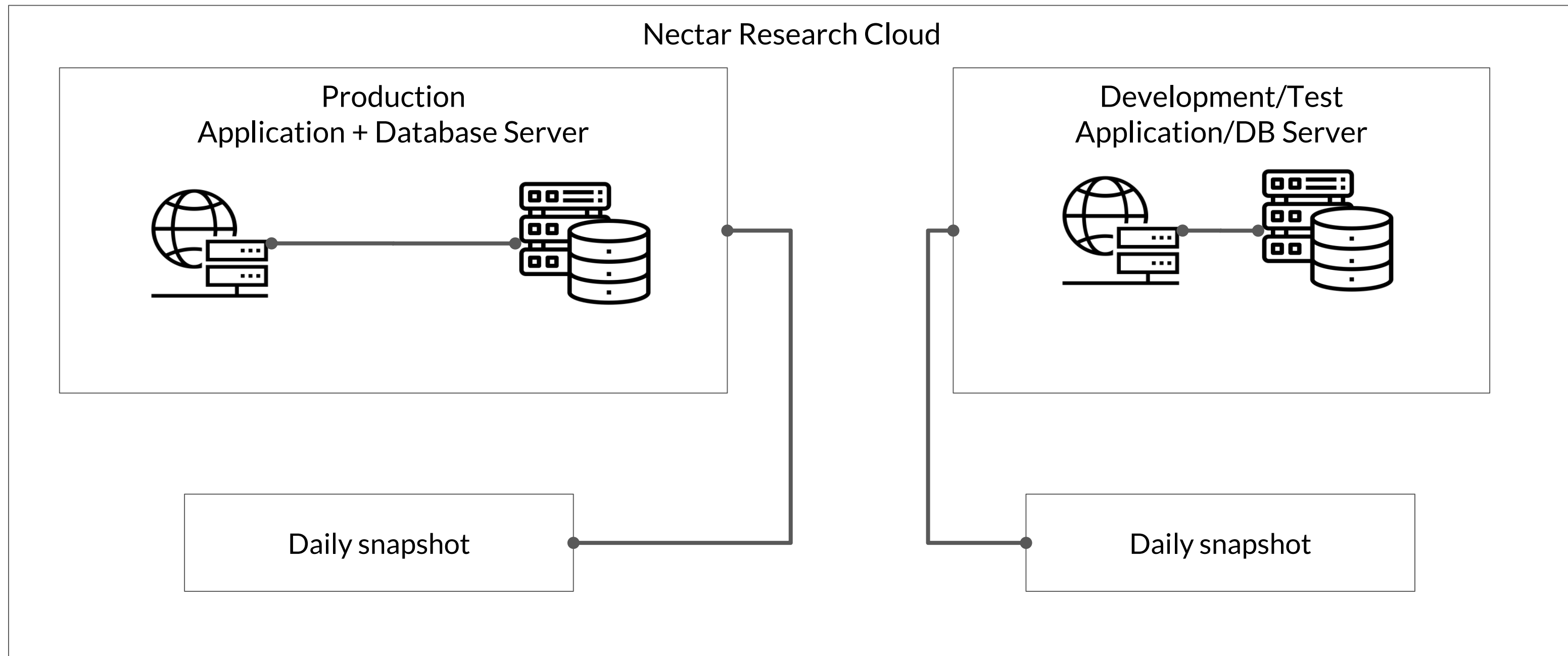
- ▶ Large Institutes and small universities looking to provide an enterprise-wide solution

Large size:

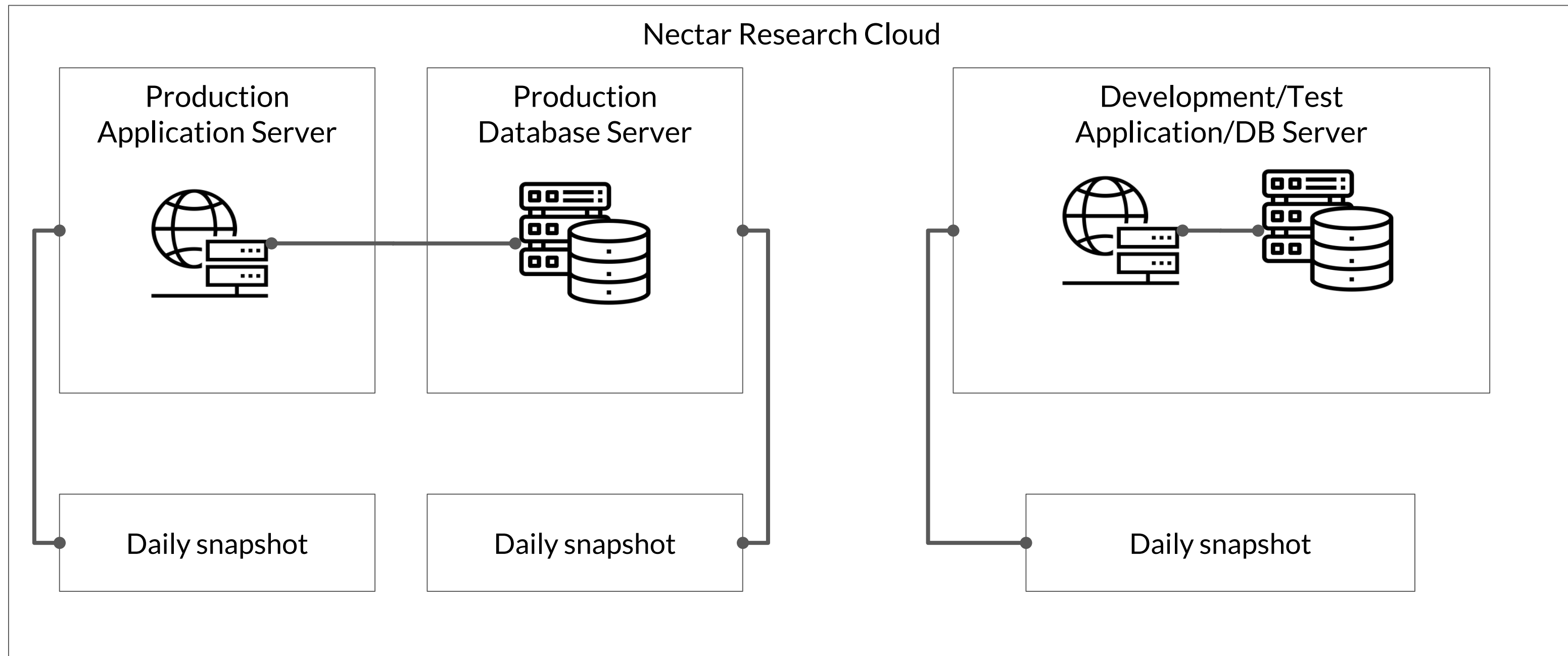
- ▶ Large universities looking to provide an enterprise-wide solution for a wide range of complex use-cases



System architecture



System architecture



Deployment

- ▶ Customer executes licence agreement with VUMC
- ▶ Customer downloads application install zip file from REDCap Community
- ▶ Deployment powered by Ansible for automation, consistency and localisation
- ▶ Coordination with customer IT for Mail, DNS, SSL and AAF configuration
- ▶ Customer uploads install zip file and sets variables
- ▶ Ansible deploys and configures VM, installs and configures dependencies:
 - ▶ PHP, Nginx, MySQL, Postfix, Imagemagick, etc.
- ▶ Customer is redirected to newly deployed system ready to be configured



Backup and Disaster Recovery

All instances in the platform are backed up on a nightly basis by Intersect's Hosting Services. Full snapshots are retained under the following regime:

- ▶ 7 daily snapshots
- ▶ 3 weekly snapshots
- ▶ 6 monthly snapshots

Upon request, any snapshot can be used to create a new temporary environment (up to 2 days) allowing the customer to extract any data required for disaster recovery.

REDCap also provide application-internal methods for retrieving data.



Administration and Support

- ▶ PaaS does not include administration of the application
- ▶ Licensee responsible for administration, support, application maintenance
- ▶ Two days' consulting included in the Platform
 - ▶ Advice on upgrading, expertise for admin tasks
- ▶ Intersect members can leverage their DRA for additional Administrative and user support
- ▶ Intersect training for intro and advanced user training courses
- ▶ REDCap Admin Basic course coming soon



Summary

- ▶ REDCap is becoming the de facto standard for data entry
- ▶ IT reluctant to host or provide support
- ▶ Intersect's expertise and experience in REDCap
- ▶ Intersect's experience in hosting research applications
- ▶ REDCap PaaS leverages proven experience and infrastructure and delivers a REDCap solution that meets researchers' needs



Accelerate your research



Productivity



Diversity



Longevity

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<https://intersect.org.au>

