

CADRE Roadmap

A stop gap plan October 2021 – January 2023

Submitted by Jaci Wilkinson, CADRE Executive Director, and the CADRE leadership team comprised of Valentin Pentchev, Patricia Mabry, Robert Van Rennes, Jamie Wittenberg, Jon Dunn, and Ethan Fridmanski.

Overview

On October 21, 2021, when IMLS grant funding ends, the CADRE leadership team intends to transition the project to a self-funded production-level service. This document, inspired by a sustainability planning report created for CADRE by Lyrasis, details proposed changes to be implemented as part of a transitional, stop gap plan while longer term plans are being developed.

Fees and new tiered access plan

Current member institutions subscribing to the paid version of CADRE will be billed for the calendar year cycle starting January 2022. All current member institutions of the CADRE project will be billed for the agreed upon amount of \$25,000.

CADRE will pilot a new tiered access plan to prevent incurring uncontrolled computing costs. These changes affect the current Free Tier users and include:

1. Data query caps of 1,000 records.
2. Data size limits for publishing packages/tools in the CADRE Marketplace.
3. Personal working space of 1gb.
4. Persistent storage space of 1gb.
5. Jupyter Notebook access with shared virtual processor cores (vcores) with reduced computing power based on the number of simultaneous user access.

The current tier for all active paying member institutions is called the Crimson Tier. As of July 1, 2021, users from member institutions in the Crimson Tier benefit from additional features including:

1. A cap of 50,000 records/query, raised from an original cap of 10,000.¹
2. Personal working space of 100gb. No institutional limit.
3. Persistent storage space of 100gb. No institutional limit
4. Jupyter Notebook access with multiple, dedicated virtual processor cores (vcores). Exact number of vcores is to be determined.
5. Dataset access dictated by institution-level data agreements.

The pilot also includes a new “White Tier” that provides enhanced computing capabilities over those offered in the Free Tier. The White Tier will cost \$15,000 annually. At the beginning of the

¹ The roadmap originally planned for unlimited data queries. After further review by the CADRE technical team, on 11/1/2021, this figure was changed to a cap of 50,000 records/query. To make arrangements to query a larger number of records, please contact the CADRE technical team at cadre@iu.edu.

2022 calendar year member institutions outside of the founding BTAA group have the option to modify their membership from the Crimson Tier to the White Tier. Full details of each tier's features will be available on the CADRE website and more information can be obtained by contacting the CADRE team at cadre@iu.edu. The effectiveness of this pilot will be reevaluated after the initial one year billing cycle.

Membership targets

Over the next year CADRE needs to grow its member base to ensure its long term financial sustainability. To that end, the goal is to add three new institutional members to the Crimson Tier before the end of the calendar year 2022. To reach this goal, CADRE will leverage a new Outreach Board to execute a targeted outreach and education campaign (see details below).

2022 Technical audit & roadmap

During 2022, the CADRE leadership team will conduct a full-scale technical audit of infrastructure costs and develop a 3–5-year technical roadmap to determine what features, new data, and production support services will impact the operational costs of CADRE. The audit and roadmap will inform future changes to cost and access tiers. The new Technical Working Group (described in more detail below) will assist with the review to ensure stakeholder participation and buy-in.

Future enhancements for which additional funding is required

Full-text search capabilities

User surveys indicate that full-text databases such as PubMed Central along with full-text search capabilities would add value to CADRE. To add full-text search capability, CADRE would need an estimated \$150,000 with funds outside the annual subscription fees. The CADRE leadership welcomes input for funding sources, grants, and other collaborations that would allow for this enhancement to be developed.

Lyrasis' recommendations for funding

The Lyrasis report recommended the following foundations and programs to procure funding for CADRE enhancements:

- a. The Sloan Foundation, Digital Technology Program. This program focuses on data and computational research to accelerate scientific discovery by helping researchers fully exploit opportunities created by recent advances in our ability to collect, transmit, analyze, store, and manipulate data."
- b. Chan Zuckerberg Initiative, Science Technology Program. This science focused fund is specifically interested in supporting projects that "build tools for the scientific community in order to analyze, visualize, and share data."
- c. "National Endowment for the Humanities (NEH). This program may be a potential funder if CADRE hosts data with an emphasis on the humanities. NEH supports "research, education, preservation, and public programs in the humanities."

- d. The Laura Bush 21st Century Librarian Fund. This IMLS program could provide a smaller pool of funds to restart the CADRE Fellows program in line with its focus on education and outreach.

Enhancements

Boolean addition

Boolean operators to enhance the query interface in CADRE were added in July 2021.

DOI integration

In the Fall of 2021, CADRE will add Digital Object Identifier (DOI) functionality to the CADRE Marketplace. Any CADRE user will have the ability to create a permanent DOI for new user-created datasets saved in the Marketplace.

API creation

Prior to July 2022, the CADRE API will be completed. This feature will be available to researchers whose institutions are subscribing to the Crimson and White Tiers.

Governance & staffing

CADRE staff

Below is a summary of key staff members who will drive the work of CADRE from October 2021-January 2023.

Jaci Wilkinson will continue as the CADRE lead in the role of Executive Director. Jaci is the Head of Discovery & User Experience at IU Libraries and 30% of her time will be devoted to leading CADRE. In addition to leading member relations and managing CADRE's finances, Jaci will form and administer the efforts of CADRE's new governance groups and supervise the Outreach Coordinator.

Valentin Pentchev will continue as the technical director of CADRE. Val's FTE commitment during this time will be 25%. He will be responsible for designing the overall architecture and system framework and day-to-day management of all technical personnel, including members of the Indiana University Network Science Institute (IUNI) IT Team and University Information Technology Services (UITS) Research Data Services Team. In this role he will be responsible for coordinating all activities with developers and vendors as well as overseeing all software development and hardware implementation.

Ethan Fridmanski, Data Services Librarian at Indiana University Libraries, will lead the new Outreach Board by building the CADRE researcher community in a strategic, user-driven way. Ethan and the Outreach Research Scientist will assist the Executive Director in crafting a sustainable approach that focuses on academic department liaisons, text and data mining specialists, and other research data management specialists.

Current co-project directors Patricia Mabry and Jamie Wittenberg will leave the CADRE Project October 2021. Co-project director Robert Van Rennes will transition to a service role on the advisory board.

Building community & collaboration with new governance groups

CADRE will form a new advisory board and two additional groups to advise development from through January 2023. Member participation in these groups will ensure that the institution's needs are heard by CADRE leadership.

- Advisory Board
 - Led by Jaci Wilkinson (CADRE Executive Director, Indiana University Libraries)
 - Jon Dunn (Indiana University Libraries)
 - Rob Van Rennes (Big Ten Academic Alliance)
 - Marcel Fortin (University of Toronto)
 - Nominations and volunteers are being sought for 2-4 other positions within the advisory board. Please contact CADRE at cadre@iu.edu to nominate yourself or others.
 - The advisory board will work directly with the Executive Director to provide input on big-picture decision-making, budget priorities, and more. The board will meet every other month and will require an estimated 1-2 hours of effort per month.
- Technical Working Group
 - Led by Val Pentchev (CADRE Technical Director, IUNI)
 - Ethan Fridmanski (Data Librarian, Indiana University Libraries)
 - Nominations and volunteers are being sought for 2-4 other positions within this working group. [Read our full call to learn more.](#)
- Outreach Board
 - Led by Ethan Fridmanski (Data Librarian, Indiana University Libraries)
 - Maksymilian Szostalo (Outreach Coordinator, IUNI)
 - Nominations and volunteers are being sought for 2-4 other positions within this working group. [Read our full call to learn more.](#)

Outreach & education

Video series

Initial work of the Outreach Board will concentrate on the creation of a video series based on the most frequently asked questions. Each video will target a specific audience of researchers, data librarians, collection development officers, or administrators promoting CADRE on their campuses. Examples of video subjects may include:

- Query record limits by access tier (Free/White/Crimson).
- The CADRE Marketplace.
- Benefits of a CADRE membership.
- CADRE log-in procedures.

- Running simple, understandable queries that answer practical questions.
- Bibliometric data.
- CADRE case studies.

CADRE trials still available

Institutional trials of CADRE at the Crimson and White Tiers are available for a term of three months. Each trial comes with a private, live demo tailored towards an institution's needs. User statistics are provided at the end of the trial period. [Request a trial now.](#)

Future questions

Beyond the actionables that make up the stop gap plan outlined above, there are a variety of additional questions that have been raised that may play a crucial role in the future of CADRE. Below are some of those unanswered questions voiced by the CADRE leadership as well as participating members:

1. What is the potential to expand CADRE to other consortia and institutions?
2. How can CADRE be leveraged to expand collaborative licensing among the members?
3. Should CADRE establish policies for supporting inter-institutional research projects, including researchers from outside of the CADRE membership?
4. Should CADRE consider text and data mining for researchers beyond Science of Science including those in the Digital Humanities, Social Sciences, and Engineering? How would that impact future target datasets to add to CADRE?
5. Is CADRE an IU Libraries program or a community supported program with IU Libraries as its partner and organizational home? Is IU Libraries CADRE's forever home, or could it be located elsewhere? Are there other possible candidates?
6. Lyris recommends CADRE consider creating additional revenue streams such as consulting and bootcamps. Should CADRE explore such revenue streams and, if so, what opportunities appear to be the most viable?
7. Public dashboards are a visual, non-technical way to disseminate research and methods (for example, public health department dashboards that visualize in real time COVID-19 cases by country, region, etc.). Should CADRE consider adding this capability to include interactive visualizations and tables? Options may include public or private dashboards that allow dissemination of research that could be viewed and used without the need for extensive coding.

Conclusion

The CADRE leadership team is currently conducting preliminary work on some of the actionable items mentioned in this roadmap document and feedback, questions and concerns are welcome. One of the primary goals of the project is to build a sustainable resource that meets the needs of researchers and that can only happen with the input of the entire community. Please contact CADRE at cadre@iu.edu.