

API Interoperability Efforts

Kelly Lockhart and the ADS Team

ADS Users Group Meeting, 15-16 Nov. 2021



API User Focus Group

- Discussion with heavy API users in winter 2021
- Wish list:
 - Better integration of API with UI
 - More and better documentation, including for concatenated actions
 - If creating a new API client/library, desire to not duplicate efforts (with e.g. the Python ADS library, astroquery, etc.)

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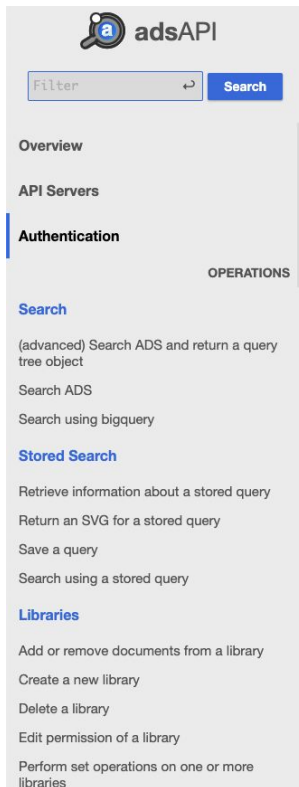
Documenting our entire API with OpenAPI

- OpenAPI: Language-agnostic, widely adopted industry standard for documenting APIs in a machine-readable (YAML or JSON) way
- Documented all of our API endpoints (70+ user-facing and 80+ with pipeline and internal scopes)

```
1  openapi: 3.0.3
2  info:
3    title: Full API for Astrophysics Data System (ADS)
4    description: >
5      Internal + user-facing API endpoints
6    termsOfService: https://ui.adsabs.harvard.edu/help/terms/
7    contact:
8      name: ADS Help
9      url: https://github.com/adsabs/adsabs-dev-api
10     email: adshelp@cfa.harvard.edu
11    version: 1.0.0
12  servers:
13    - url: https://api.adsabs.harvard.edu/{basePath}
14      description: Production Server
15      variables:
16        basePath:
17          default: v1
18          enum:
19            - v1
20    - url: https://devapi.adsabs.harvard.edu/{basePath}
21      description: Development Server
22      variables:
23        basePath:
24          default: v1
25          enum:
26            - v1
27  tags:
28    - name: adsws
29    - name: author affiliation
30    - name: libraries
31    - name: citation helper
32    - name: export (tagged formats)
```

OpenAPI-Powered Documentation

- Used our OpenAPI spec with a documentation generation tool, RapiDoc, to create new, complete API documentation
- [New documentation example](#)



API for Astrophysics Data System (ADS) 1.0.0

ADS Help: adshelp@cfa.harvard.edu | URL: <https://github.com/adsabs/adsabs-dev-api> | [Terms](#)

API for the NASA Astrophysics Data System

The source code for the project can be found at <https://github.com/adsabs>.

Individual components:

- Search: <https://github.com/adsabs/solr-service>
- Stored search: <https://github.com/adsabs/vault>
- Libraries: <https://github.com/adsabs/biblib-service>
- Export: https://github.com/adsabs/export_service
- Metrics: https://github.com/adsabs/metrics_service
- Author affiliation: https://github.com/adsabs/author_affiliation_service
- Citation helper: https://github.com/adsabs/citation_helper_service
- Classic import: <https://github.com/adsabs/harbour-service>
- Objects: https://github.com/adsabs/object_service
- Recommender: https://github.com/adsabs/oracle_service
- Reference: https://github.com/adsabs/reference_service
- Resolver: https://github.com/adsabs/resolver_service
- Notifications: <https://github.com/adsabs/vault>
- Visualizations: <https://github.com/adsabs/vis-services>

This documentation follows the [OpenAPI specification](#). The UI was created with [RapiDoc](#).

API SERVER

- <https://api.adsabs.harvard.edu/{basePath}> - Production Server
- <https://devapi.adsabs.harvard.edu/{basePath}> - Development Server

SELECTED: <https://api.adsabs.harvard.edu/v1>

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Example Jupyter notebooks

- Two new notebooks specifically for concatenated actions
 - [Searching + adding to/maintaining a library](#)
 - [Searching + exporting](#)
- On the horizon: searching + metrics notebook

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All Search Terms

Recommendations

Search examples

authorauthor:"huchra, john"

first authorauthor:"^huchra, john"

abstract + titleabs:"dark energy"

yearyear:2000

year rangeyear:2000-2005

full textfull:"gravity waves"

publicationbibstem:Apu

citationscitations(author:"huchra, j")

referencesreferences(author:"huchra, j")

reviewsreviews("gamma-ray bursts")



refereedproperty:refereed

astronomydatabase:astronomy

ORabs:(planet OR star)

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The screenshot displays the NASA Science Explorer website interface. At the top, a dark navigation bar includes the SciX logo, a dropdown menu set to 'Astrophysics', a 'Recording...' status indicator, and links for Feedback, ORCID, About, and Account. Below this, the main header features the NASA Science Explorer logo and three tabs: 'Classic Form', 'Modern Form' (which is active), and 'Paper Form'. A search section follows with a 'QUICK FIELD:' dropdown (set to 'Author'), a search input field, and a search button. A 'Recommendations' section is partially visible, showing search examples like 'author', 'first author', 'abstract + title', 'year range', 'full text', and 'publication'. A modal dialog titled 'Recorded Session' is centered on the screen, containing placeholder text and two buttons: 'Download Python Script' and 'Close'. The footer contains copyright information for The SAO/NASA Astrophysics Data System, contact details, and logos for NASA and the Center for Astrophysics.

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