



AGAVE: API OVERVIEW

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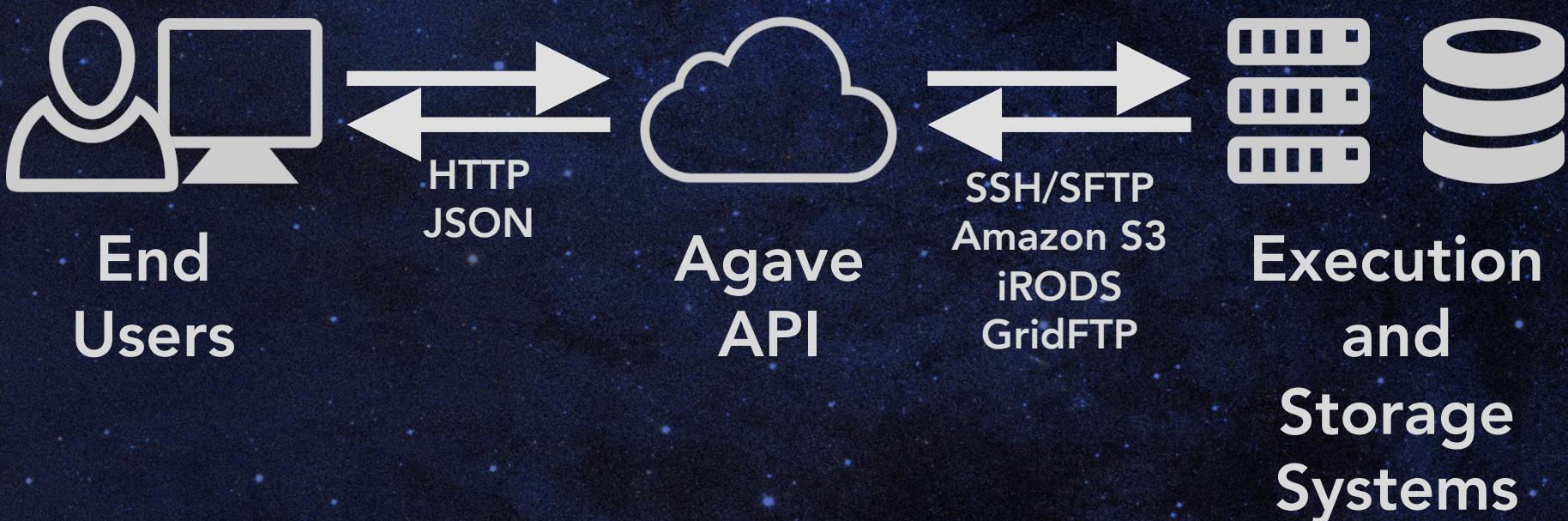
Rion Dooley @deardooley

RAPID DISCUSSION QUESTIONS

- ▶ For a typical workflow, how many steps are involved? How many compute systems do you use to run it?
- ▶ APIs let systems and services talk to each other. Can you think of examples of websites where content/capabilities of one site appear on a different site?
- ▶ What does it look like to execute a workflow that runs on multiple compute systems?

WHAT IS AN API?

Application programming interface



WHAT IS AN API?

Important concepts: endpoints

clients	Create and manage API keys (WSO2)
apps	Register and manage apps
files	Move and manage data
jobs	Run and manage jobs
meta	Create and manage metadata
monitors	Create and manage system monitors
notifications	Subscribe to and manage notifications
postits	Create pre-authenticated, disposable URLs
profiles	Create and manage application users
systems	Register and manage systems
tenants	List available tenants
transforms	Transform and stage data
usage	Query for usage across APIs

AGAVE API OVERVIEW

Reproducible scientific computing infrastructure



- ▶ Science-as-a-service platform
- ▶ Use XSEDE compute, and storage resources (or your own)
- ▶ Clone existing apps and register your own
- ▶ Share your apps and access them through multiple interfaces

AGAVE API OVERVIEW

Benefits

Get Science Done



- Securely make your cluster and apps available on the web
- Integrate remote data and apps into command line scripts

Reproducibility



- All files, jobs, and apps are tracked with unique IDs
- Programmatically associate metadata with your files/jobs

Productivity



- Automate workflows across sites and architectures
- Create powerful new web portals quickly and cheaply



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A CLOUD-BASED ENVIRONMENT FOR RESEARCH IN
NATURAL HAZARDS ENGINEERING



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NHERI COMMUNITY

Relevant news, field-based opportunities, and user-guided discussions aimed at bringing the natural hazards engineering community together.



RESEARCH WORKBENCH

A comprehensive cloud-based research environment for experimental, theoretical, and computational engineering and science.



NHERI FACILITIES

Shared-use sites including Experimental Facilities, the Computational Modeling and Simulation Center, and the Network Coordination Office.



LEARNING CENTER

Training resources, site support, outreach, and student engagement opportunities to enhance research and better utilize DesignSafe's toolbox.

**NHERI
COMMUNITY**



The Araport API Manager infrastructure is undergoing an upgrade and maintenance on April 5th, 2016 from 09:00am to 6:00pm CDT. For more information, please see the [service disruption notice](#). Please check back for a status update on the upgrade/maintenance outage. Thank you for your patience!

[ALL](#)[THALEMINE](#)[JBROWSE](#)

Search ThaleMine, JBrowse and other site content

Search by identifiers or keywords e.g. AT4G19020 or epigenetic

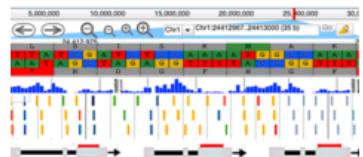
New to Araport?

Araport is a one-stop-shop for *Arabidopsis thaliana* genomics. Araport offers gene and protein reports with orthology, expression, interactions and the latest annotation, plus analysis tools, community apps, and web services. Araport is 100% free and open-source. Registered members can save their analysis, publish science apps, and post announcements.

[READ MORE](#)[REGISTER](#) [LOGIN](#)**Araport!!**

THALEMINE

JBROWSE



BLAST

Sequence alignment results for a query sequence against a database. The alignment shows matches between the query and a target sequence, with gaps indicated by dashes and mismatches by different letters.

APP STORE



← → C <https://vdjserver.org/project/0001432334104569-5056a550b8-0001-012/jobs/3305652023861580261-e0bd34dffff8de6-0001-007>

project 1

Testing Data_from Lindsay 2015.08.26

test 2015.07.27

demultiplex multibarcode

primers 2015.05.27

demultiplexing 2015.05.27

demultiplexing

SRP042205

Project Settings

Upload and Browse Project Data

Link .fasta/.qual Files

View Analyses and Results

SRR1297001.fastq 143.39 MB File Available in Project Data Area

Chart Files

Name	Size	Chart
SRR1297001.fasta.igblast.out cdr3_hist.tsv	834 B	Hide Chart Download Chart

Read Count

CDR3 Length

Legend: IMGT (Blue), Kabat (Light Blue)

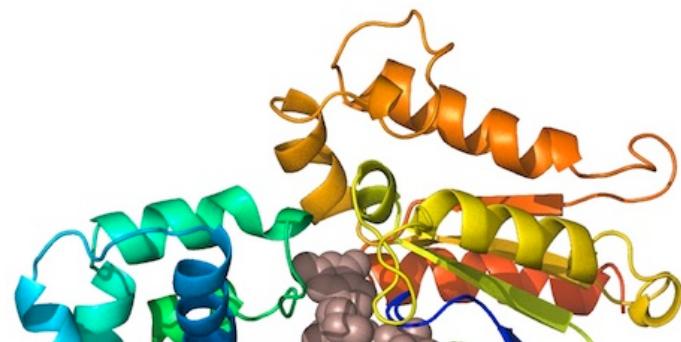
CDR3 Length	IMGT (Read Count)	Kabat (Read Count)
22	0	~1,000
23	~5,000	~8,000
24	~12,000	~0
25	~10,500	~0
26	~11,500	~0
27	~12,000	~0
28	~18,000	~0
29	~13,000	~0
30	~11,000	~0
31	~11,000	~0
32	~21,091	~0
33	~13,000	~0
34	~11,000	~0
35	~21,091	~0
36	~13,000	~0
37	~11,000	~0
38	~10,000	~0
39	~10,000	~0
40	~10,000	~0
41	~10,000	~0
42	~10,000	~0
43	~10,000	~0
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45	~10,000	~0
46	~10,000	~0
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50	~10,000	~0
51	~10,000	~0
52	~10,000	~0
53	~10,000	~0
54	~10,000	~0
55	~8,000	~0
56	~4,000	~0
57	~2,500	~0
58	~2,500	~0
59	~2,500	~0
60	~2,500	~0
61	~2,500	~0
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84	~2,500	~0
85	~2,500	~0
86	~2,500	~0
87	~2,500	~0
88	~2,500	~0



Welcome to the *new* Virtual Drug Discovery Portal!

This Portal provides a graphical interface for conducting a screen for identifying small molecules that bind to your target protein.

This new release is still in Beta.



USER/DEVELOPER TOOLS

- ▶ Agave ToGo
 - ▶ multi-tenant interface for managing apps/systems/data
 - ▶ reference web portal implementation in AngularJS
- ▶ JupyterHub
 - ▶ data exploration in the browser
- ▶ Command line tools
 - ▶ all API functionality packaged in bash friendly syntax
- ▶ Language specific SDKs

AGAVE TO GO

AGAVE TOGO

Dashboard Home ▸ Dashboard Actions

Dashboard

Introducing the new Agave ToGo!

Agave ToGo v2 is a full-featured web application designed to show off core functionality you are familiar with in the Agave Platform as well as demonstrate some of the advanced use cases which are possible leveraging the core Agave Core Science APIs.

This application is meant to serve as a reference from which you can build your own application. Feel free to fork this repository and edit as needed. To contribute back enhancement and bug fixes, please fork the repository and submit a pull request.

1349 Jobs

12,5TB Data Moved

549 App Users

+25% Activity Increase

PROJECT ACTIVITY

Total 3927

New 19

USER COMMENTS JOBS DOCS PROGRESS

ACTIVITY FEEDS

test-wc View output 3 months ago

Jobs Systems Users

DEVELOPER COMMAND-LINE TOOLS

- ▶ <https://bitbucket.org/agaveapi/cli>
- ▶ Requires bash and python's json.tool
- ▶ Uses caching for authentication
- ▶ Parses JSON responses to condense output

AGAVE-AWARE JUPYTERHUB

- ▶ Bleeding edge research will never be on a webpage
- ▶ Data exploration “outside the app” also needs to be captured
- ▶ jupyter.agaveapi.co/
- ▶ (Free) account creation here:
public.agaveapi.co/create_account
- ▶ Currently used as a demo platform
 - ▶ potential data purges during updates
 - ▶ All notebooks run inside Docker containers

PYTHON AGAVE SDK

- ▶ Pythonic wrapper for all Agave endpoints
 - ▶ github.com/TACC/agavepy
 - ▶ To install: **pip install agavepy**
- ▶ Actively maintained
- ▶ used for development internally
- ▶ adopted by domain science users for productivity

OTHER SDKS



Explore Requests Add SDK Login Register

Agave Platform Science API

Publisher: [Search Engine \(Ursa\)](#)
Base URL: <https://agave.iplantc.org>

Power your digital lab and reduce the time from theory to discovery using the Agave Science-as-a-Service API Platform. Agave provides hosted services that allow researchers to manage data, conduct experiments, and publish and share results from anywhere at any time.

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Available Platforms

DISCLAIMER: These SDKs are generated using publicly available descriptions of APIs that anyone has created. As such there are no guarantees for any of the SDKs below, or that this listing is maintained by or even related to the company it claims to be, unless explicitly specified.



Rating
No Rating

Category
Other

Tags
No Tags

Source



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SDKS USING [APIMATIC](#)
IN



QUESTIONS?