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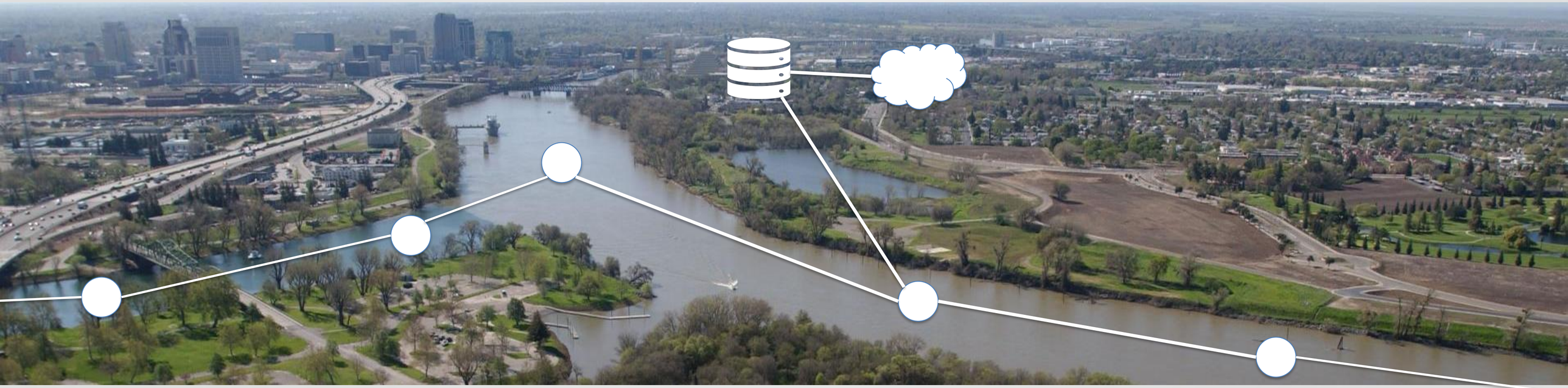
Introduction to the CNRA Open Data Portal API

May 12, 2025



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Presentation Roadmap

- CNRA Open Data
- Why use the API?
- Some background info
  - Definitions
  - CNRA Open Data architecture
- Using the API to get data
  - Basic queries
  - Queries leveraging SQL
- Some resources

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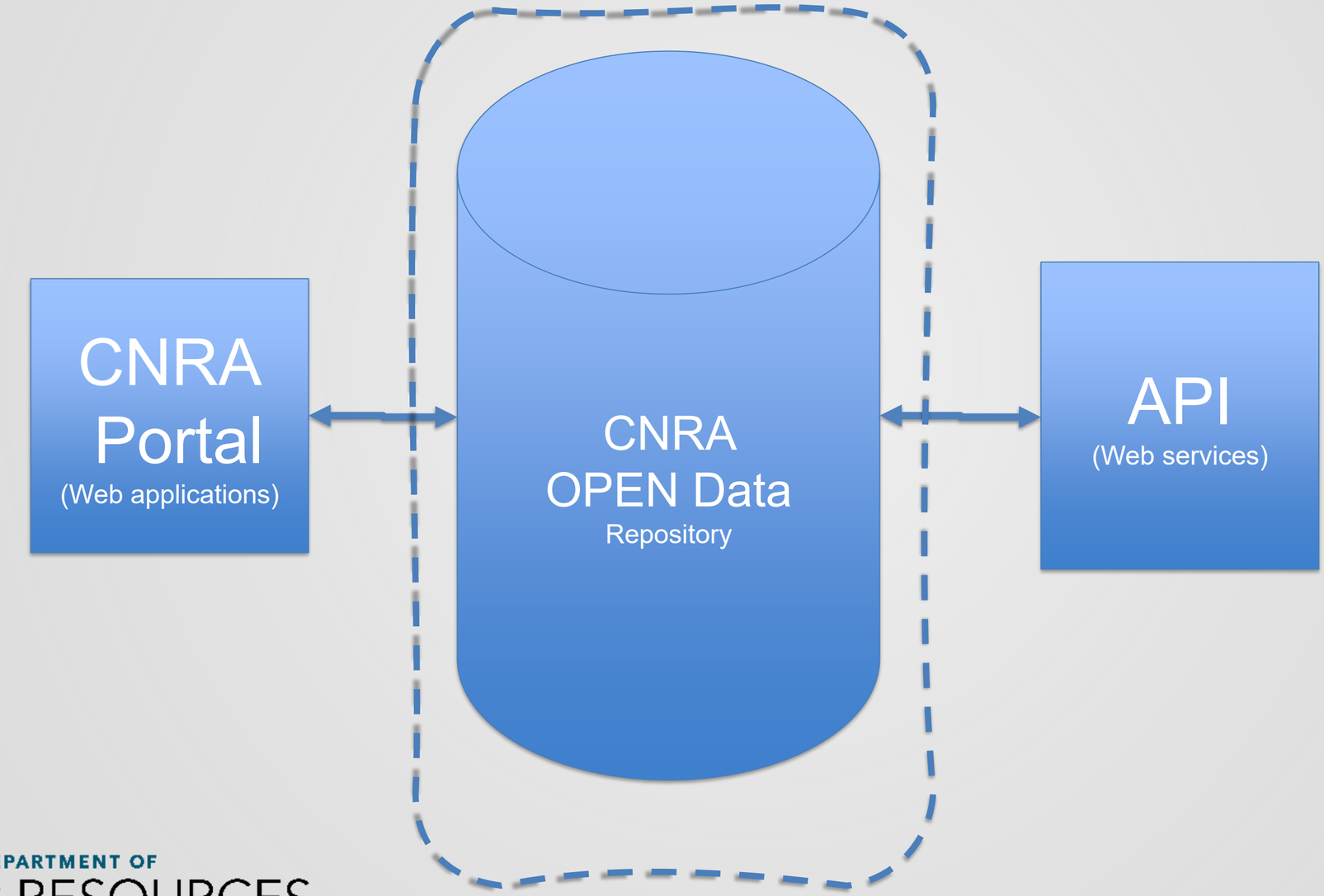
CNRA Open Data



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Why use the CNRA Open Data API?

- Automate data uploads*
- Drill down to the data are interested in
- Reduce the size of large datasets to more manageable chunks
- Automation
- Another tool in your toolbox

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Background on the API

- Some definitions
- CNRA Open Data architecture

Definitions

- **API =** Application Programming Interface

- **CNRA Open Data** = California Natural Resources Agency Open Data Portal

Definitions

- **CKAN** = “Comprehensive Knowledge Archive Network”

- **CKAN** = Open-source data-management system for powering data hubs and data portals

CNRA Open Data Architecture

- **Datasets** (packages*) and **Resources**
- **Dataset** is a container
  - Metadata information about the data
  - Any number of **resources** (data objects)
    - CSV, XML, PDF, image, link.

Datasets

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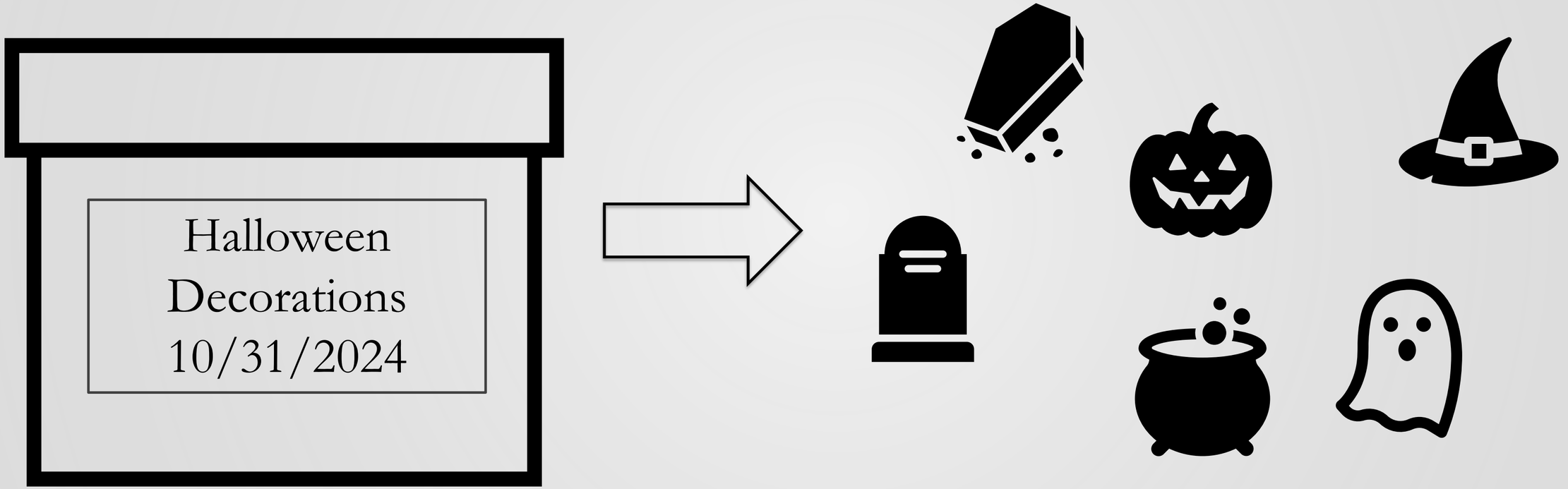
Dataset → Resources



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Storage of resources

- All resources go into the **FILESTORE** as blob storage (All or nothing)

- Suitable resources also get loaded into the **DATASTORE** (stand-alone tables in a database)

Filestore

Blob* storage of resources.

Datastore

Suitable* filestore resources loaded into ad-hoc tables in a **PostGRES** database

What can you do with the API?

- Work with datasets
  - Search for datasets
  - Modify datasets (both metadata and resources)
- Work with resources
  - Get information about resources
  - **Access data within resources (datastore)**

Using API to explore Datastore resources

- Simple queries, using 'datastore_seach'
  - Basic queries matching basic critera (matches on one or more fields)
- Complicated queries using 'datastore_search_sql'
  - SQL queries on one or more tables in datastore.

Basic datastore search API Call:

- Root URL/ **data.cnra.ca.gov/api/3/action/**
- **datastore_search?**
- **resource_id={resource_id}**
- Optional [&{other parameters for searching}]
  - E.g. **&limit=5**

SQL datastore search API Call:

- Root URL/ **data.cnra.ca.gov/api/3/action/**
- **datastore_search_sql?**
- **sql=**

```
SELECT site_code, county_name
FROM “{resource_id}”
WHERE county_name = ‘Alameda’
```

Where to go for more information

- CNRA Open Data API Basics
  https://data.cnra.ca.gov/pages/api

- CKAN API Documentation
  https://docs.ckan.org/en/2.9/api/

- Python notebook with some examples:
  https://github.com/atcuthbertson/CNRA_OpenData_Accessing

API 'quick start guide'

can be found on CNRA open data for any* datastore resource