

ESS-DIVE Package Service

An overview of the BETA version



What is it?

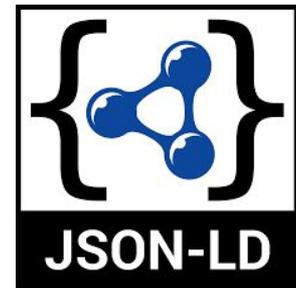


*The **ESS-DIVE Package Service** is a more general interface than the ESS-DIVE repository. Via this service, organizations can **write code to store data packages** and then **reuse** the code to upload other data packages in the same or different repositories.*

JSON for Linked Data (JSON-LD)

JSON-LD (JavaScript Object Notation for Linked Data), is a method of encoding Linked Data using JSON (see <https://json-ld.org/>)

- The ESS-DIVE metadata schema is a restricted subset of <https://schema.org/Dataset> specification
- This covers all of the fields that ESS-DIVE collects from users (see [ESS-DIVE JSON-LD Schema Proposal](#))
- JSON-LD is recommended by DataCite for package submission.
- JSON-LD has broad tool support and can be embedded in landing pages for harvesting by DataCite and indexing by Google.



REST API

The ESS-DIVE package service is a REST API

- REST (**R**epresentational **S**tate **T**ransfer) is an architecture style of designing internet-scale systems (scalable, fault tolerant, extensible)
- REST takes advantage of the standard web protocols
 - Uses well-defined status codes for error handling
 - Makes use of web protocol verbs for managing data
- Some aspects of a REST API are:
 - Data is received in a convenient format (e.g. JSON)
 - There are operations for manipulating data (create, update, delete)



What's coming?

This is a **BETA** version for **validating data package metadata to ESS-DIVE only**. You will not be able to submit new data packages to ESS-DIVE yet.

However, you will be able to:

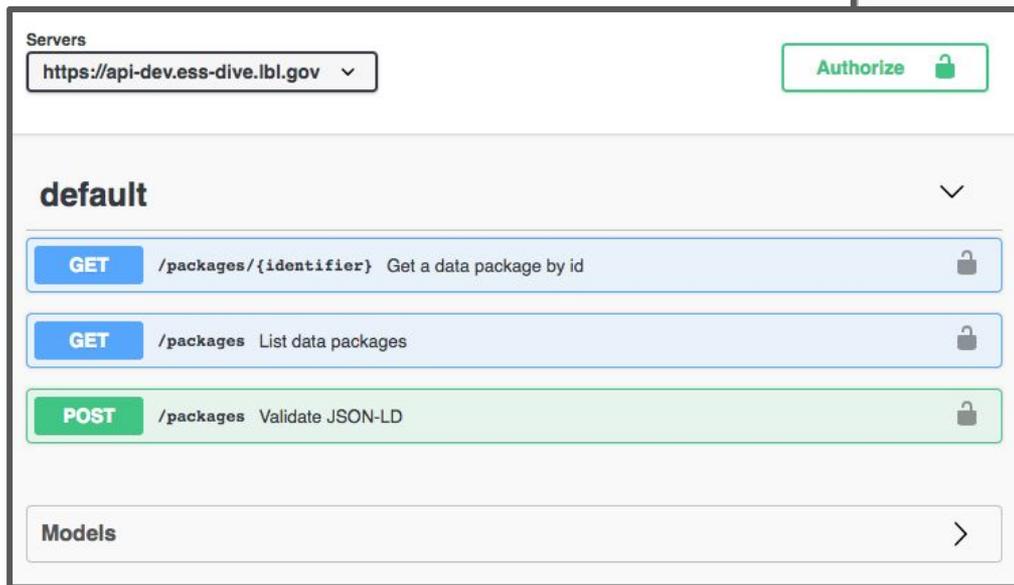
- Authenticate with a token
- Validate JSON-LD with detailed error messages provided for invalid content
- Retrieve data packages submitted by you via the ESS-DIVE website
- Learn how to use the API from detailed documentation

The API presented here is preliminary and may change based on user feedback and testing before the final release.

API Documentation

 The ESS-DIVE API is described using the **OpenAPI Specification** description format.

 We use **Swagger UI** to transform the OpenAPI description into rich interactive documentation of the API

A screenshot of the Swagger UI interface. At the top, there's a "Servers" section with a dropdown menu showing "https://api-dev.ess-dive.lbl.gov" and an "Authorize" button with a lock icon. Below this, the "default" server is selected. The main area lists three API endpoints: a GET endpoint for "/packages/{identifier}" (Get a data package by id), a GET endpoint for "/packages" (List data packages), and a POST endpoint for "/packages" (Validate JSON-LD). Each endpoint has a lock icon. At the bottom, there's a "Models" section with a right-pointing arrow.A screenshot of the Swagger UI interface for the "ESS-DIVE Package Service". The top bar is green and contains the "swagger" logo, a dropdown menu with ".schema.json", and an "Explore" button. The main heading is "ESS-DIVE Package Service" with version tags "0.1.0-rc8" and "OAS3". Below the heading is the ESS-DIVE logo and tagline "Deep Insight for Earth Science Data". The text below the logo reads: "Package Service is a more general interface than just our repository so that large organizations can use the data packages once and use it with more than one repository."

- Each **operation** is defined in detail with examples
- **Structure of JSON** expected and produced is defined.
- Commands are **auto-generated** for and can be **executed**

Validate JSON-LD

- You will be able to **validate JSON-LD** against the interface.
- If the JSON-LD is invalid, details about the errors will be given
- The validation logic is still being refined and **may change** up to the final release.
- This purpose of this preliminary release is for **soliciting feedback** and to help users **get started** creating scripts for submitting data package metadata.

Validation Error Response

```
{
  "detail": "One or more fields raised validation errors.",
  "errors": [
    "'datePublished' is a required property",
    "'editor' is a required property",
    "'provider' is a required property"
  ]
}
```

Validation Success Response

```
{
  "detail": "The submitted request was valid for Orcid:http://orcid.org/0000-0001-9061-8952"
}
```

Retrieve data package metadata

- You will be able to **retrieve a list** of data packages *submitted by you*.
- You may retrieve a **single data package** *submitted by you*.
- Metadata returned is a small subset of available metadata.
- For all actions, you must **authenticate** with a token.

<https://api.ess-dive.lbl.gov/packages>

```
{
  "total": 113,
  "user": "http://orcid.org/0000-0001-9061-8952",
  "page_size": 25,
  "row_start": 1,
  "result": [
    {
      "id": "ess-dive-1868f2e8ca46454-20181114T164102290817",
      "dateUploaded": "2018-11-15T00:41:03.746Z",
      "dateModified": "2018-11-15T00:41:07.496Z",
      "isPublic": false,
      "citation": "Walker A P; Yang B; Boden T; Kauwe M G D; Medlyn B; Zaehle
; Hungate B; Kim D; LeCain D; Lu M; Magonigal P J; Nowak R S; Oren
M; Zak D R; Norby R J (2018): Phase 2 Free Air CO2 Enrichment Model
Protocols. Free-Air CO2 Enrichment (FACE) Model Data Synthesis. ess
-20181114T164102290817",
      "dataset": {
        "@context": "http://schema.org/",
        "@type": "Dataset",
        "@id": null,
        "name": "Phase 2 Free Air CO2 Enrichment Model-Data Synthesis: Mete
",
        "description": "Meteorological data, site parameterisation data, an
Air CO2 Enrichment (FACE) experiments and one Open Top Chamber
of the FACE Model Data Synthesis (FACE-MDS) project. This datas
simulate these six CO2 enrichment experiments -- Duke, Kennedy
Rhinelander -- following the FACE-MDS simulation protocol.",
        "datePublished": "2018"
      }
    },
    {
      "id": "urn:uuid:f9cbdddc-2689-4a77-bde6-e040bf5f54c0",
      "dateUploaded": "2018-11-14T23:23:40.601Z",
      "dateModified": "2018-11-14T23:23:40.601Z",
      "isPublic": true,

```



Live Demonstration