OpenEBench opts Bioschemas

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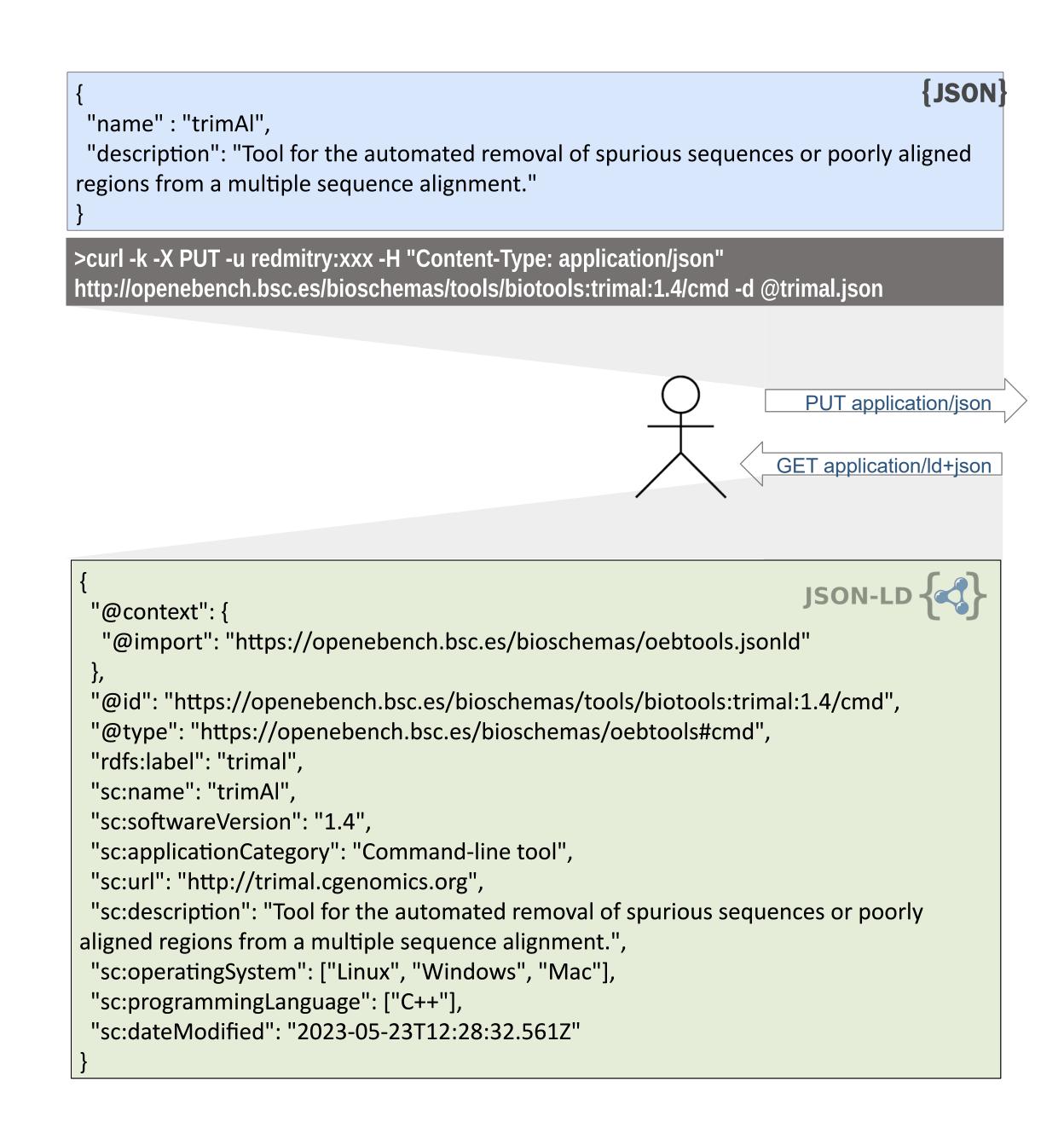
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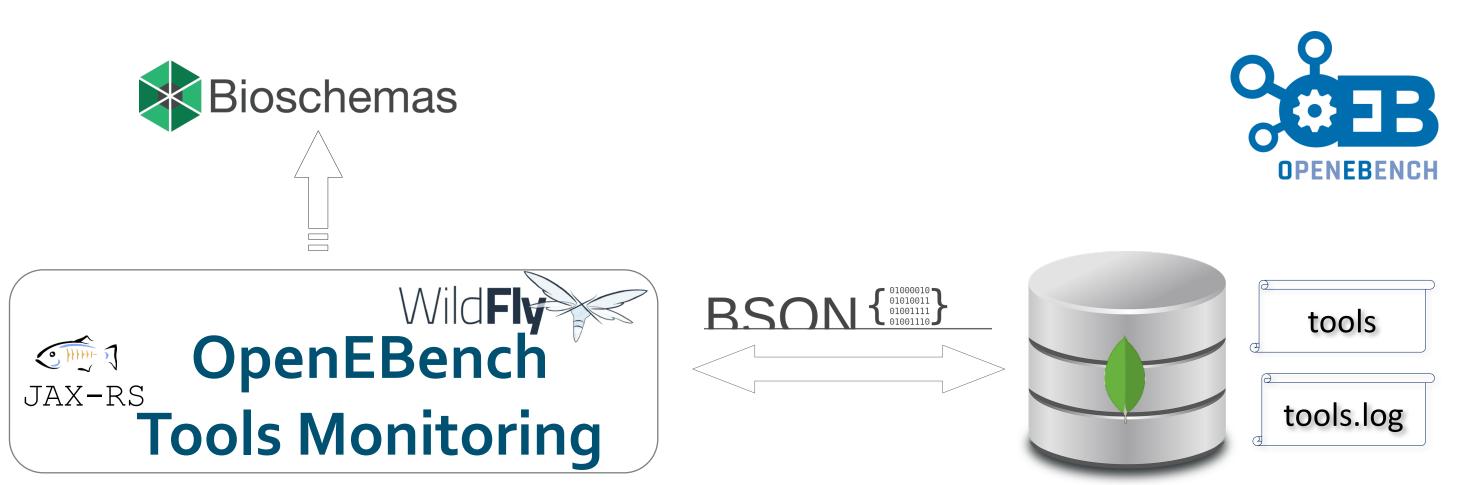
ELIXIR All Hands, 5-8 June 2023, Dublin, Ireland



Since its inception, the <u>OpenEBench</u> platform has been providing technical monitoring for the bioinformatics tools collected from a set of sources such as <u>Biotools</u>, <u>Bioconda</u>, <u>Galaxy</u> and <u>DebianMed</u>. Being a part of the Research Software Ecosystem initiative, it provides a set of periodically updated FAIR metrics for Research Software that are further committed to the Research Software Ecosystem GitHub <u>repository</u>. Historically, the platform used its own custom model for the tool descriptions which was greatly influenced by the <u>biotoolsSchema</u> format. Interoperability challenges faced during Research Software Ecosystem participation led to the adoption of the Bioschemas Computational Tool <u>profile</u> as a format for the research tools description. Here we present a REST API to store Research Tools description using Bioschemas semantics.

OpenEBench Research Tools Registry is based on the <u>Jakarta EE</u> (Enterprise Edition) and uses MongoDB database.





The OpenEBench Research Tools Monitoring stores Research Tools descriptions in Bioschemas-friendly JSON format which allows on-the-fly generation of the Bioschemas JSON-LD tools descriptions compliant with Bioschemas Computational Tool profile. To achieve this, the API analyses Bioschemas ontology and dynamically extends stored JSON descriptions with JSON-LD context.

It is also possible to download complete dataset either as a JSON Array of objects or JSON-LD graph.

One of the compelling feature of the Repository is tracking property changes over the time. All modifications are logged in a form of RFC 6902 Patch object together with update timestamp and data provenance (a user performed the data update). The REST API provides a way to get the history of any property.

```
{
"@context": {
    "@import": "https://openebench.bsc.es/bioschemas/oebtools.jsonld"
},
"@graph": [
    {
        "@id": "https://openebench.bsc.es/bioschemas/tools/biotools:trimal:1.4/cmd",
        "@type": "https://openebench.bsc.es/bioschemas/oebtools#cmd",
        "rdfs:label": "trimal"
    }, ...
 ]
    A complete dataset as JSON-LD graph
```

{
"_id": {
 "id": "biotools:trimal:1.4/cmd",
 "date": "2023-05-25T14:24:27.057Z"
},
"@provenance": "redmitry",
"patch": [
 {
 "op": "add",
 "path": "/description",
 "value": "Tool for the automated removal of spurious sequences..."
 }
}

MongoDB Document corresponding to the 'trimAl' record data update

https://gitlab.bsc.es/inb/elixir/openebench/tools-monitoring

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