

# How the Netherlands eScience Center uses CFF to promote software citation

Jurriaan H. Spaaks

Jason Maassen

Tom Klaver

Stefan Verhoeven

September 5, 2018

CFF Hackday

Birmingham UK





# Who are we?

---



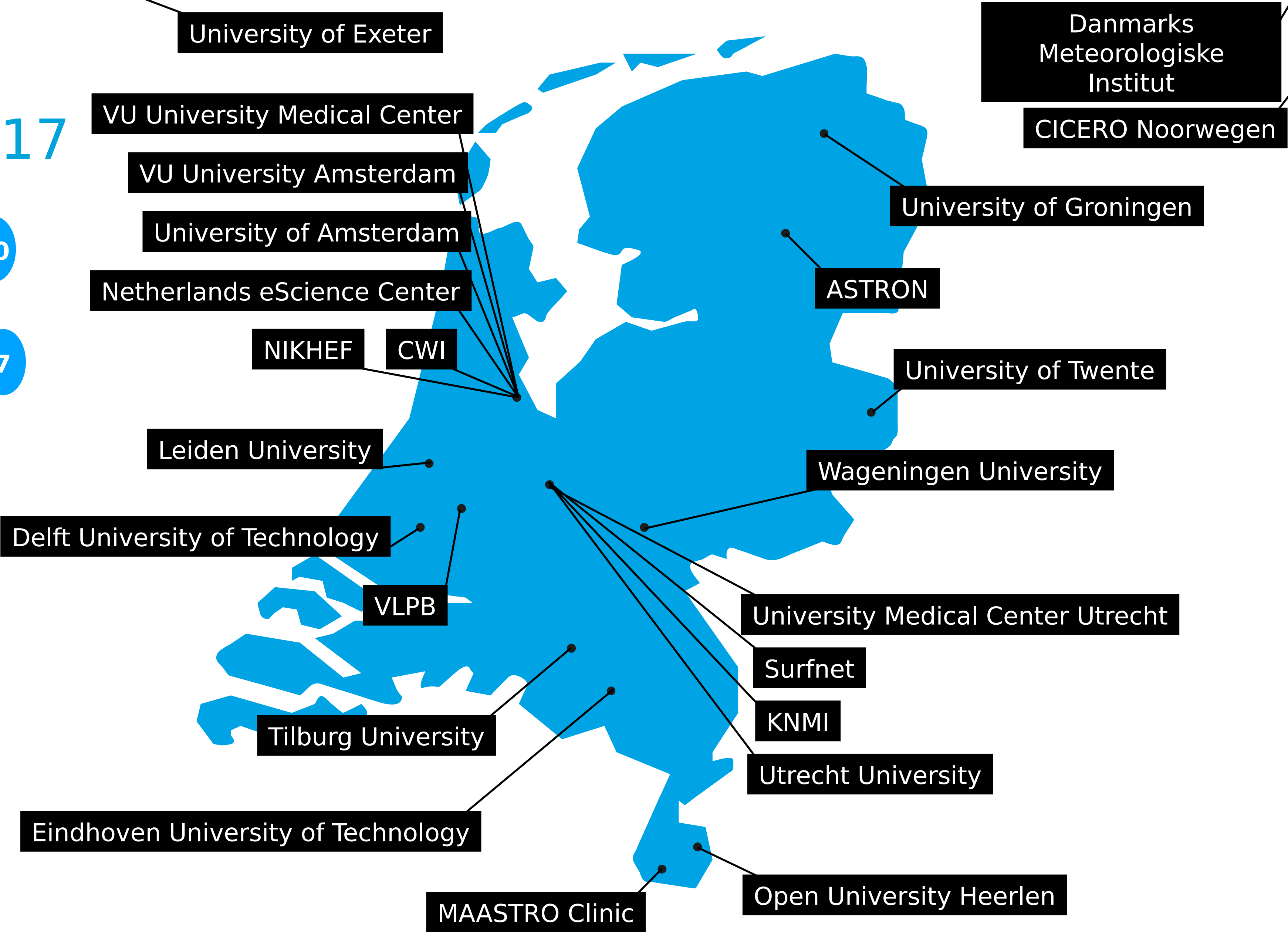
Photography: Elodie Burillon



**We are driven by challenges faced by academic researchers**

# Our projects in 2017

- Environment & Sustainability10
- Life Sciences & eHealth12
- Humanities & Social Science7
- Physics & Beyond5



University of Exeter

Danmarks  
Meteorologiske

vegen

## Research Software Directory

- content management system for software
- <https://research-software.nl>
- improves findability
- citation

## Set up your own Research Software Directory:

- [github.com/research-software-directory/research-software-directory](https://github.com/research-software-directory/research-software-directory)

https://research-software.nl

Research Software Directory

netherlands Science center research software directory

Find software About the directory

# Xenon

If you are using remote machines to do your computations, and don't feel like learning and implementing many different APIs, Xenon is the tool for you.

6 mentions 9 contributors

2273 commits | Last update: July 09, 2018

Get started

Cite this software

DOI: 10.5281/zenodo.1287235

Copy to clipboard

Choose a version: 2.6.2

Choose a citation style: BibTeX

Download file

### What Xenon can do for you

- Provides an easy-to-use interface for distributed computing developers
- Enables the use of different file transfer protocols and scheduling systems on remote machines
- No need to learn and implement many different APIs
- Successfully used in many eScience tools and projects

Read more

Tags

Big data Optimized data handling

High performance computing

Programming Language

Java

License

Apache-2.0

Participating organizations

netherlands Science center VU UNIVERSITY AMSTERDAM

admin interface

Research Software Directory

https://www.research-software.nl/admin

Search

python-pcl  
PyXenon  
QMflows  
QTLTableMiner++  
recipy  
ReGIS  
Research Software Directory  
Rig  
ROOT-conda-recipes  
Sagecal  
SalientDescriptor-matlab  
SalientDetector-matlab  
SalientDetector-python  
scriptcwl  
ShiCo  
SIGA.py  
SPOT  
StoryTeller  
Structure from Motion  
sv-callers  
SyGMA  
Texcavator  
The CrowdTruth Framework  
Twiqs  
Via Appia Visualization  
Xenon  
Xenon command line interface  
Xenon gRPC server  
xenon-flow  
xtas

Brand name Xenon

Is published ☒

Is featured ☒

Use with caution, not everything can be featured

Short statement

Short software statement: in max. 30 words explain when your software might be useful and what it solves.  
Example for Xenon:  
If you are using remote machines to do your computations, and don't feel like learning and implementing many different APIs, Xenon is the tool for you.  
If you are using remote machines to do your computations, and don't feel like learning and implementing many different APIs, Xenon is the tool for you.

Answer the following questions (in Markdown with bullet points (\*)):

What does your software provide for what user?  
What does your software do?  
What makes your software unique?  
List some highlights/awards:  
Example for Xenon:  
\* Provides an easy-to-use interface for distributed computing developers  
\* Enables the use of different file transfer protocols and scheduling systems on remote machines  
\* No need to learn and implement many different APIs  
\* Successfully used in many eScience tools and projects  
\* Provides an easy-to-use interface for distributed computing developers  
\* Enables the use of different file transfer protocols and scheduling systems on remote machines  
\* No need to learn and implement many different APIs  
\* Successfully used in many eScience tools and projects

Bullet list

Text shown when Read more button is pressed

Many applications use remote storage and compute resources. To do so, they need to include code to interact with the scheduling systems and file transfer protocols used on those remote machines.

Unfortunately, many different scheduler systems and file transfer protocols exist, often with completely different programming interfaces. This makes it difficult for applications to switch to a different system or support multiple remote systems simultaneously.

Xenon solves this problem by providing a single programming interface to many different types of remote resources. As a result, changing from one scheduler to

Read more

Concept DOI

Getting started URL

Human readable identifier in url for this item

---

# How it's made: Cite this software

Cite this software

Choose a version:

2.6.1

▼

DOI:

10.5281/zenodo.1200251

Copy to clipboard

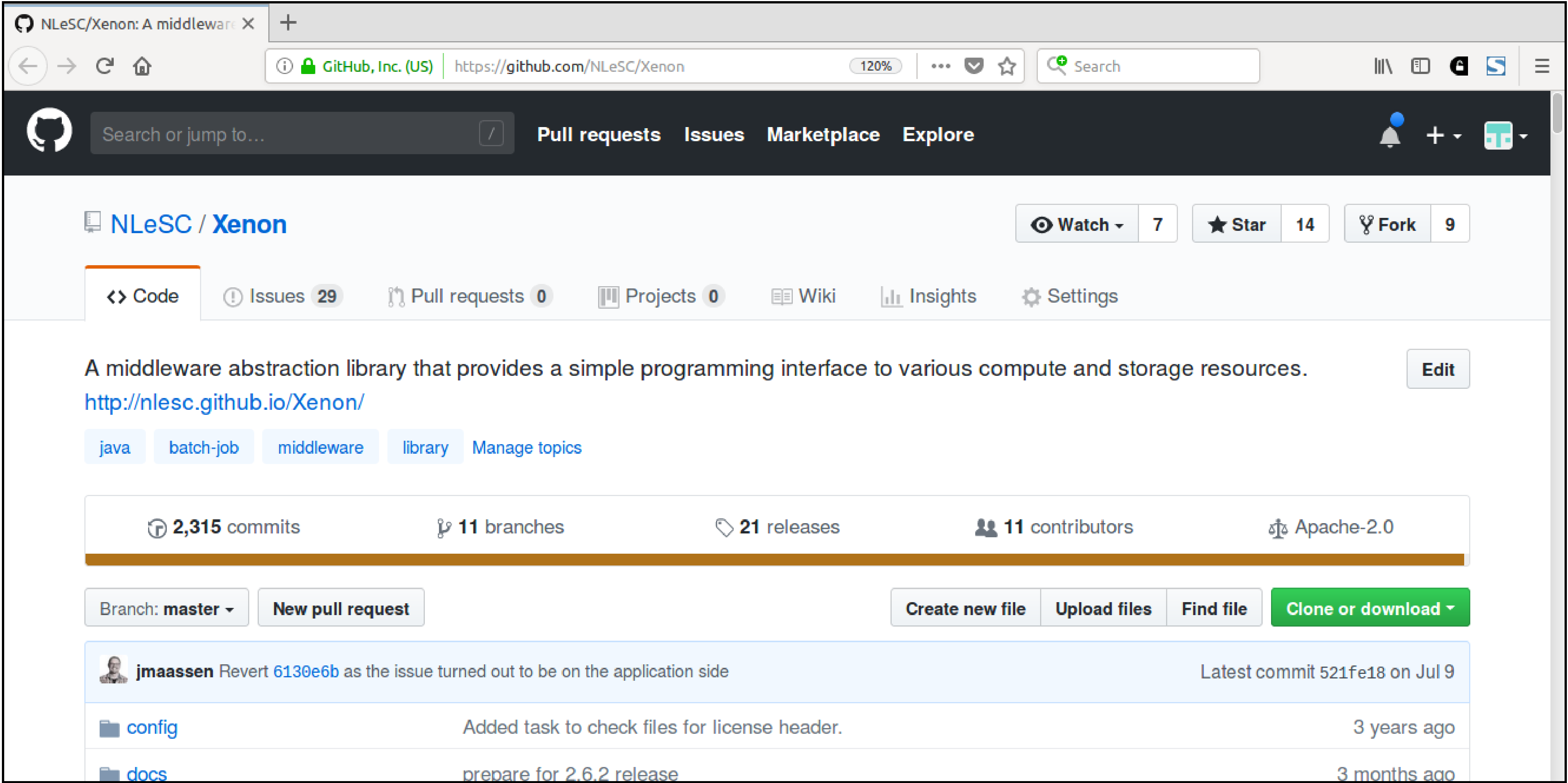
Choose a citation style:

BibTeX

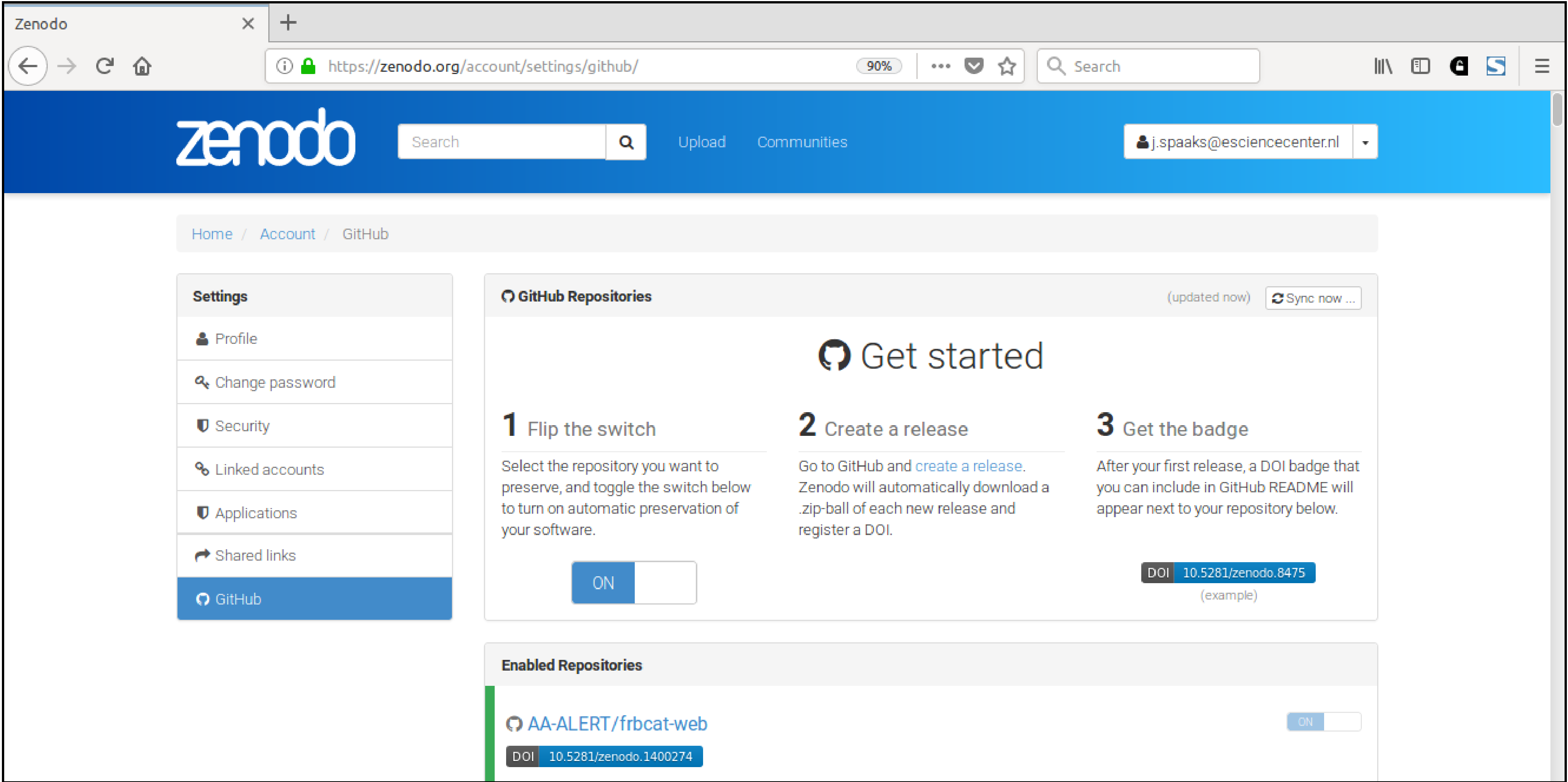
▼

Download file

# How it's made: Cite this software

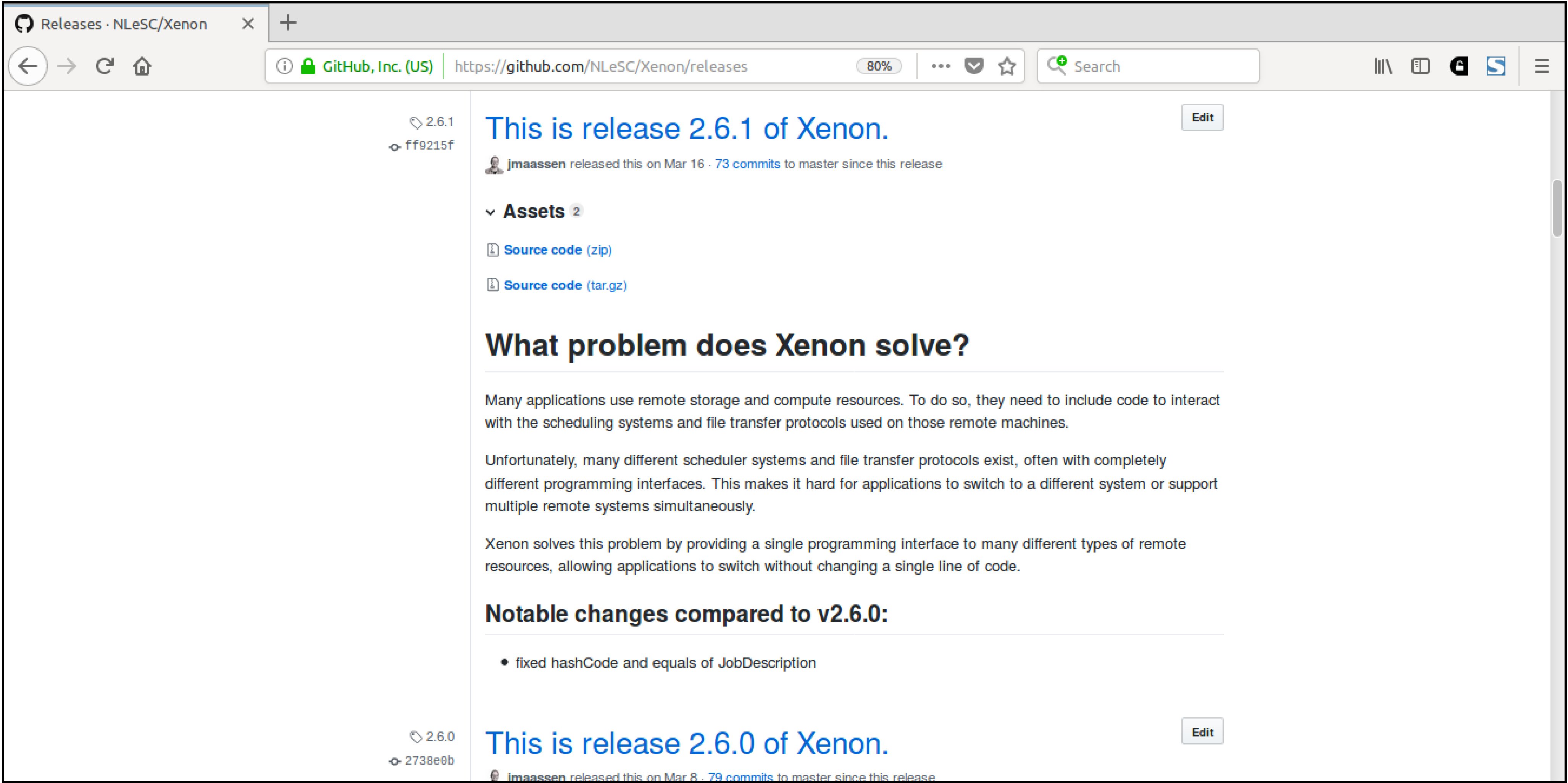


# How it's made: Cite this software





# How it's made: Cite this software





# How it's made: Cite this software

Xenon | Zenodo

← → ↺ 🏠

🔒 <https://zenodo.org/record/1287235#.W4k3HRh9hf4>

⋮ 📧 ☆

🔍 Search

☰ 📖 🏠 🌐 ⋮

zenodo

Search 🔍

Upload


Communities

j.spaaks@esciencecenter.nl ▾

June 11, 2018

Software Open Access

# Xenon

Maassen, Jason; Verhoeven, Stefan; Borgdorff, Joris; Spaaks, Jurriaan H.; Drost, Niels; Meijer, Christiaan; van der Ploeg, Atze; de Boer, Piter T.; van Nieuwpoort, Rob; van Werkhoven, Ben;  Kuzniar, Arnold

A middleware abstraction library that provides a simple programming interface to various compute and storage resources.

Preview ▾

Xenon-2.6.2.zip

! The previewer is not showing all the files

NLeSC-Xenon-3671336

📄 .gitignore

248 Bytes

📄 .travis.yml

2.1 kB

📄 .zenodo.json

1.9 kB

📄 CHANGELOG.md

5.2 kB

📄 CITATION.cff

1.7 kB

📄 CODE\_OF\_CONDUCT.md

3.3 kB

📄 CONTRIBUTING.md

3.4 kB

83

👁 views

6

📄 downloads

[See more details...](#)

Available in

GitHub

Publication date:

June 11, 2018



# How it's made: Cite this software

Xenon | Zenodo

←

→

↺

🏠

🔒

https://zenodo.org/record/1287235#.W4k3HRh9hf4

⋮

👤

zenodo

Search

🔍

Upload


Communities

June 11, 2018

Software

Open Access

Xenon

Maassen, Jason; Verhoeven, Stefan; Borgdorff, Joris; Spaaks, Jurriaan H.; Drost, Niels; Meijer, Christiaan; van der Ploeg, Atze; de Boer, Piter T.; van Nieuwpoort, Rob; van Werkhoven, Ben;  Kuzniar, Arnold

A middleware abstraction library that provides a simple programming interface to various compute and storage resources.

Preview

📁 Xenon-2.6.2.zip

! The previewer is not showing all the files

📁 NLeSC-Xenon-3671336

📄 .gitignore

248 Bytes

📄 .travis.yml

2.1 kB

📄 .zenodo.json

1.9 kB

📄 CHANGELOG.md

5.2 kB

📄 CITATION.cff

1.7 kB

📄 CODE\_OF\_CONDUCT.md

3.3 kB

📄 CONTRIBUTING.md

3.4 kB

## Versions

Version 2.6.2	Jun 11, 2018
10.5281/zenodo.1287235	
Version 2.6.1	Mar 16, 2018
10.5281/zenodo.1200251	
Version 2.6.0	Mar 8, 2018
10.5281/zenodo.1194353	
Version 2.5.0	Mar 3, 2018
10.5281/zenodo.1188072	
Version 2.4.1	Feb 27, 2018
10.5281/zenodo.1185115	

[View all 19 versions](#)

**Cite all versions?** You can cite all versions by using the DOI [10.5281/zenodo.597993](https://doi.org/10.5281/zenodo.597993). This DOI represents all versions, and will always resolve to the latest one. [Read more.](#)



The screenshot shows the Research Software Directory Admin interface. On the left is a sidebar with a list of software entries, including 'Xenon', which is highlighted. The main area displays the configuration for 'Xenon'. Fields include 'Brand name' (Xenon), 'Is published' (checked), 'Is featured' (checked), 'Short statement' (a paragraph about remote machines), 'Bullet list' (a list of features), 'Read more' (a paragraph about remote storage), 'Concept DOI' (10.5281/zenodo.597993), and 'Getting started URL' (https://github.com/NLeSC/Xenon). A purple box highlights the 'Concept DOI' field.

python-pcl  
PyXenon  
QMflows  
QTLTableMiner++  
recipy  
ReGIS  
Research Software Directory  
Rig  
ROOT-conda-recipes  
Sagecal  
SalientDescriptor-matlab  
SalientDetector-matlab  
SalientDetector-python  
scriptcwl  
ShiCo  
SIGA.py  
SPOT  
StoryTeller  
Structure from Motion  
sv-callers  
SyGMa  
Texcavator  
The CrowdTruth Framework  
Twiqs  
Via Appia Visualization  
Xenon  
Xenon command line interface  
Xenon gRPC server  
xenon-flow  
xtas

**Brand name** Xenon

**Is published** ☒

**Is featured** ☒ Use with caution, not everything can be featured

**Short statement**  
Short software statement: in max. 30 words explain when your software might be useful and what it solves.  
Example for Xenon:  
If you are using remote machines to do your computations, and don't feel like learning and implementing many different APIs, Xenon is the tool for you.  
If you are using remote machines to do your computations, and don't feel like learning and implementing many different APIs, Xenon is the tool for you.

**Bullet list**  
Answer the following questions (in Markdown with bullet points (\*)):  
What does your software provide for what user?  
What does your software do?  
What makes your software unique?  
List some highlights/awards:  
Example for Xenon:  
\* Provides an easy-to-use interface for distributed computing developers  
\* Enables the use of different file transfer protocols and scheduling systems on remote machines  
\* No need to learn and implement many different APIs  
\* Successfully used in many eScience tools and projects  
\* Provides an easy-to-use interface for distributed computing developers  
\* Enables the use of different file transfer protocols and scheduling systems on remote machines  
\* No need to learn and implement many different APIs  
\* Successfully used in many eScience tools and projects

**Read more**  
Text shown when Read more button is pressed  
Many applications use remote storage and compute resources. To do so, they need to include code to interact with the scheduling systems and file transfer protocols used on those remote machines.  
Unfortunately, many different scheduler systems and file transfer protocols exist, often with completely different programming interfaces. This makes it difficult for applications to switch to a different system or support multiple remote systems simultaneously.  
Xenon solves this problem by providing a single programming interface to many different types of remote resources. As a result, changing from one scheduler to

**Concept DOI** 10.5281/zenodo.597993  
The Zenodo concept DOI. Not an URL

**Getting started URL** https://github.com/NLeSC/Xenon  
Human readable identifier in url for this item

The screenshot shows the 'Cite this software' interface. It includes a 'DOI' field with the value '10.5281/zenodo.1200251' and a 'Copy to clipboard' button. Below this are two dropdown menus: 'Choose a version' (set to '2.6.1') and 'Choose a citation style' (set to 'BibTeX'). A 'Download file' button is located to the right of the citation style dropdown.

Cite this software

DOI: 10.5281/zenodo.1200251 [Copy to clipboard](#)

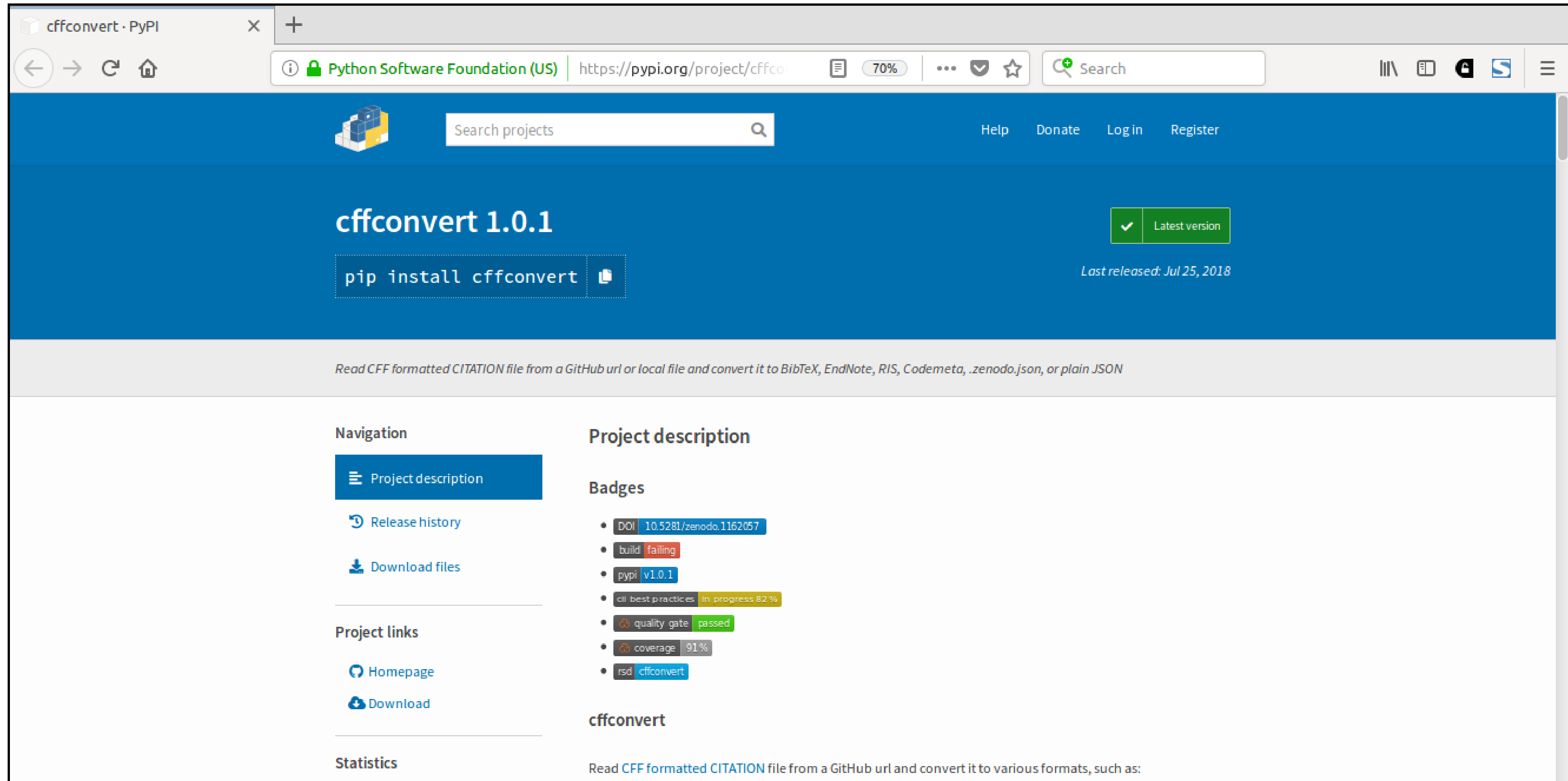
Choose a version: 2.6.1

Choose a citation style: BibTeX [Download file](#)

- 1)code is on GitHub
- 2)GitHub-Zenodo integration to mint DOIs whenever we make a release.
- 3)Research Software Directory has an Admin interface, provides concept DOI
- 4)scraper asks Zenodo for the associated versioned DOIs
- 5)scraper then visits the links for each,
  - looks for a CITATION.cff
  - checks if it's valid
  - generates BibTeX, EndNote, RIS



## How it's made: Cite this software





# cffconvert

---

## installation

```
daisycutter@ESLT0054:~$ pip install --user cffconvert_
```



# cffconvert

---

show help

```
daisycutter@ESLT0054:~$ cffconvert --help
Usage: cffconvert [OPTIONS]

Options:
  -if, --infile TEXT          Path to the CITATION.cff input file.
  -of, --outfile TEXT         Path to the output file.
  -f, --outputformat TEXT     Output format: bibtex|cff|codemeta|endnote|ris|zenodo
  -u, --url TEXT              URL of the repo containing the CITATION.cff (currently only github.com is supported;
                              may include branch name, commit sha, tag name). For example:
                              'https://github.com/citation-file-format/cff-converter-python' or
                              'https://github.com/citation-file-format/cff-converter-python/tree/master'
  --validate                  Validate the CITATION.cff found at the URL or supplied through '--infile'
  -ig, --ignore-suspect-keys If True, ignore any keys from CITATION.cff that are likely out of date, such as
                              'commit', 'date-released', 'doi', and 'version'.
  --verbose                   Provide feedback on what was entered.
  --version                   Print version and exit.
  --help                      Show this message and exit.

daisycutter@ESLT0054:~$ _
```



## cffconvert

---

cd to an actual repository with  
CITATION.cff

```
daisycutter@ESLT0054:~$ cd github/citation-file-format/cff-converter-python/
```




## cffconvert

---

cd to an actual repository with  
CITATION.cff

```
daisycutter@ESLT0054:~/github/citation-file-format/cff-converter-python$ ls -l
cffconvert
cffconvert.egg-info
CHANGELOG.rst
CITATION.cff
codemeta.json
CONTRIBUTING.md
coverage.xml
fixtures
LICENSE
livetests
MANIFEST.in
pytest.ini
README.rst
requirements-dev.txt
requirements.txt
setup.py
sonar-project.properties
test
daisycutter@ESLT0054:~/github/citation-file-format/cff-converter-python$ _
```



Output the metadata from CITATION.cff  
as BibTeX (and other formats)

```
daisycutter@ESLT0054:~/github/citation-file-format/cff-converter-python$ cffconvert -f bibtex
@misc{YourReferenceHere,
author = {
    Jurriaan H. Spaaks and
    Tom Klaver and
    Stefan Verhoeven and
    Stephan Druskat
},
title  = {cffconvert},
month  = {7},
year   = {2018},
doi     = {10.5281/zenodo.1162057},
url     = {https://github.com/citation-file-format/cff-converter-python}
}

daisycutter@ESLT0054:~/github/citation-file-format/cff-converter-python$ _
```



# cffconvert also for improved metadata

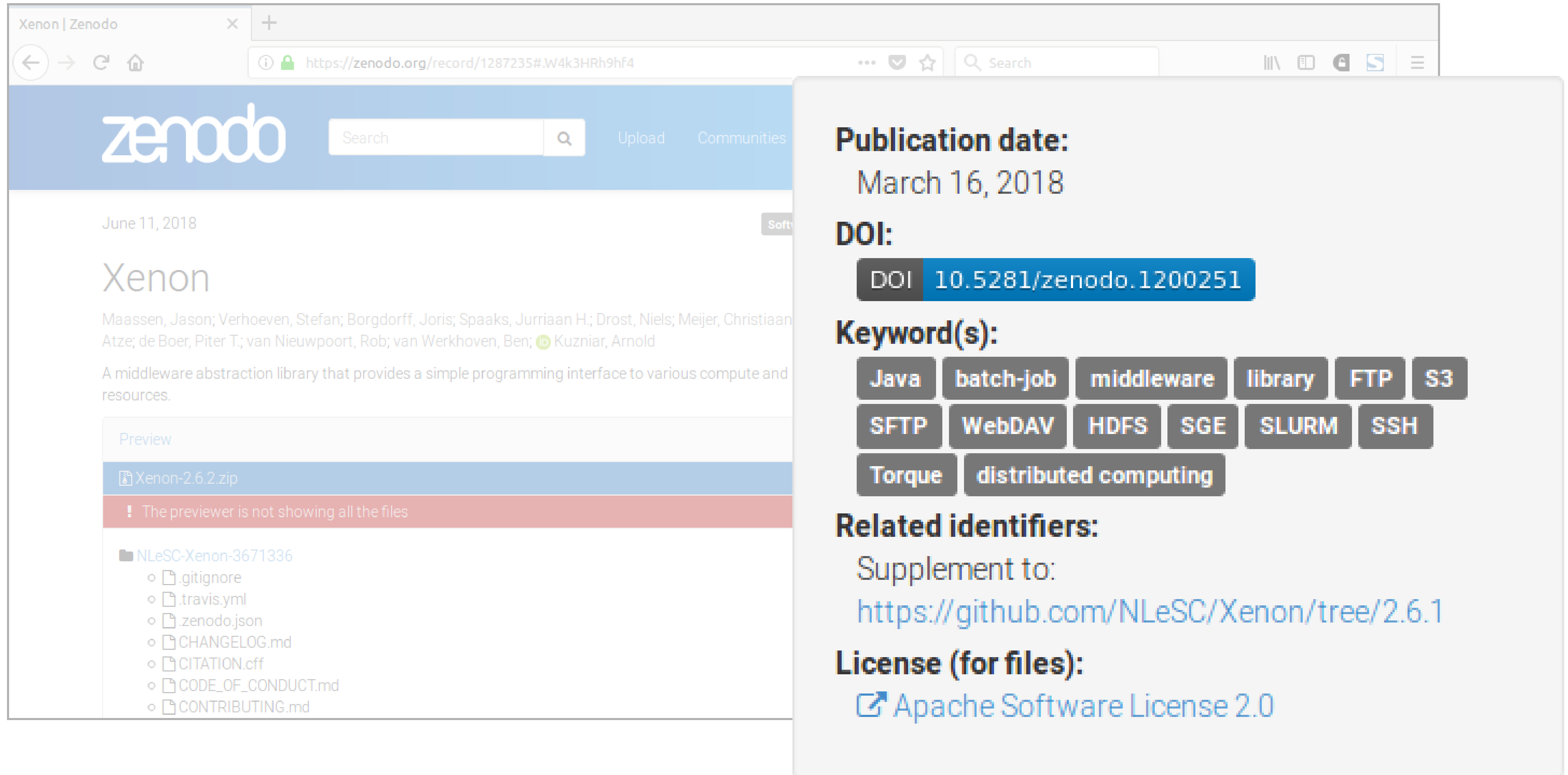
codemeta

The image shows a web browser displaying the Xenon project page on [research-software.nl](https://research-software.nl/software/xenon). The page features the title "Xenon" and a description: "If you are using remote machines to do your computations, and don't feel like learning and implementing many different APIs, Xenon is the tool for you." It also displays statistics: 6 mentions and 9 contributors. A line graph shows activity from 2014 to 2018, with a peak in 2018. A "Get started" button is present. At the bottom, there is a "Cite this" section with the DOI: [10.5281/zenodo.1287235](https://doi.org/10.5281/zenodo.1287235).

Overlaid on the right side of the browser window is the "Sources" panel, showing the JSON-LD metadata for the Xenon project. The metadata is structured as follows:

```
148   "@type": "Person",
149   "affiliation": {
150     "@type": "Organization",
151     "LegalName": "Netherlands eScience Center"
152   },
153   "familyName": "de Boer",
154   "givenName": "Piter T."
155 },
156 {
157   "@type": "Person",
158   "affiliation": {
159     "@type": "Organization",
160     "LegalName": "Netherlands eScience Center"
161   },
162   "familyName": "van Nieuwpoort",
163   "givenName": "Rob"
164 },
165 {
166   "@type": "Person",
167   "affiliation": {
168     "@type": "Organization",
169     "LegalName": "Netherlands eScience Center"
170   },
171   "familyName": "van Werkhoven",
172   "givenName": "Ben"
173 },
174 {
175   "@id": "https://orcid.org/0000-0003-1711-7961",
176   "@type": "Person",
177   "affiliation": {
178     "@type": "Organization",
179     "LegalName": "Netherlands eScience Center"
180   },
181   "familyName": "Kuzniar",
182   "givenName": "Arnold"
183 }
184 ],
185 "codeRepository": "https://github.com/NLeSC/Xenon",
186 "datePublished": "2018-06-11",
187 "identifier": "https://doi.org/10.5281/zenodo.1287235",
188 "keywords": [
189   "Java",
190   "batch-job",
191   "middleware",
192   "library",
193   "FTP",
194   "S3",
195   "SFTP",
196   "WebDAV",
197   "HDFS",
198   "SGE",
199   "SLURM",
200   "SSH",
201   "Torque",
202   "distributed computing"
203 ],
204 "license": "http://www.apache.org/licenses/LICENSE-2.0",
205 "name": "Xenon",
206 "version": "2.6.2"
207 }
208 }
209 </script>
```

## .zenodo.json



The image shows a web browser window displaying a Zenodo record for 'Xenon'. The browser's address bar shows the URL `https://zenodo.org/record/1287235#.W4k3HRh9hf4`. The Zenodo header includes the logo, a search bar, and links for 'Upload' and 'Communities'. The record page for 'Xenon' shows a date of 'June 11, 2018' and a list of authors: 'Maassen, Jason; Verhoeven, Stefan; Borgdorff, Joris; Spaaks, Jurriaan H.; Drost, Niels; Meijer, Christiaan Atze; de Boer, Piter T.; van Nieuwpoort, Rob; van Werkhoven, Ben; Kuzniar, Arnold'. A description states: 'A middleware abstraction library that provides a simple programming interface to various compute and resources.' Below this is a 'Preview' section showing a file 'Xenon-2.6.2.zip' and a message: 'The previewer is not showing all the files'. A file tree for 'NLeSC-Xenon-3671336' is visible, listing files like `.gitignore`, `.travis.yml`, `.zenodo.json`, `CHANGELOG.md`, `CITATION.cff`, `CODE_OF_CONDUCT.md`, and `CONTRIBUTING.md`.

**Publication date:**  
March 16, 2018

**DOI:**  
DOI 10.5281/zenodo.1200251

**Keyword(s):**  
Java batch-job middleware library FTP S3  
SFTP WebDAV HDFS SGE SLURM SSH  
Torque distributed computing

**Related identifiers:**  
Supplement to:  
<https://github.com/NLeSC/Xenon/tree/2.6.1>

**License (for files):**  
[Apache Software License 2.0](#)



# Let's stay in touch

☎ +31 (0)20 460 4770

✉ [info@esciencecenter.nl](mailto:info@esciencecenter.nl)

🌐 [www.esciencecenter.nl](http://www.esciencecenter.nl)

📖 [blog.esciencecenter.nl](http://blog.esciencecenter.nl)

🐦 [eScienceCenter](#)

♥ [eScienceCenter](#)

in [linkd.in/1j2uS8S](https://linkd.in/1j2uS8S)

## Questions?

- Research Software Directory
- cffconvert







# How it's made: Cite this software

