HTTP Building Blocks:
API Deprecation; Linkset; Content Warning

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The Five API Styles: Understanding REST, O…

API Deprecation

Deprecation: Motivation   (5)

I-D: **draft-dalal-deprecation-header** [https://datatracker.ietf.org/doc/draft-dalal-deprecation-header]

Co-author: Sanjay Dalal

- "The Sunset Header Field [https://tools.ietf.org/html/rfc8594]" is useful but has limited semantics
- API consumers should be able to find out about upcoming or existing deprecation
  - "Deprecation" refers to an API being still functional, but not recommended to use anymore
- Additional resources:
  - Blog article: "API Lifecycle Management: Deprecation and Sunsetting [https://apifriends.com/api-management/api-lifecycle-management-deprecation-and-sunsetting/]"
  - YouTube video: "API Lifecycle Management: Deprecation and Sunsetting [https://www.youtube.com/watch?v=twfufQn1mD0]"

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Deprecation Model   (6)

- A *deprecated API* is still operational but should be treated with caution

- Deprecation is signaled with a simple HTTP header field
  - `Deprecation: Sun, 11 Nov 2018 23:59:59 GMT`
- Deprecation scoping is up for the API to decide
  - Header field can show up everywhere or just on specific resources
  - Deprecation can affect the entire API or specific aspects of it
- Additional information can be made available via `deprecation` links
  - There is not defined format for this resource (it's probably developer documentation)

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Deprecation: History   (7)

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- First version: February 2019
- Published versions: 4
- History & collaboration
  - Datatracker: draft-dalal-deprecation-header [https://datatracker.ietf.org/doc/draft-dalal-deprecation-header]
  - Repo: github.com/sdatspun2/deprecation-header [https://github.com/sdatspun2/deprecation-header]
  - Issues: github.com/sdatspun2/deprecation-header/issues [https://github.com/sdatspun2/deprecation-header/issues]

Linkset

Linkset: Motivation   (9)

I-D: `draft-wilde-linkset` [https://datatracker.ietf.org/doc/draft-wilde-linkset]

Co-author: Herbert Van de Sompel

- "Web Linking [https://tools.ietf.org/html/rfc8288]" only defines an HTTP header field but no media types
- Various scenarios call for solutions where links are treated as resources
    - Large sets of links can be hard to embed in HTTP header fields
    - Some scenarios call for links being supplied by a third party
- Define media types that allow sets of links to become standalone resources

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Linkset Model   (10)

- "Web Linking [https://tools.ietf.org/html/rfc8288]" defines a model and a serialization for *web links*

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  - `application/linkset` is registered as a media type for RFC 8288 syntax
  - `application/linkset+json` is defined and registered as a JSON syntax for web links
    - The JSON design makes it easy to apply JSON-LD context definitions
- Linksets as standalone resources require careful handling of the context
  - Context is implicit for RFC 8288 scenarios
  - Context must be captured for "linksets as resources" scenarios
- Resources can link to links pertaining to them using the `linkset` link relation

Linkset

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Linkset Example   (11)

```
{ "linkset": [
```

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```
    {
      "anchor": "http://example.net/bar",
      "next": [
        {"href": "http://example.com/foo1"}
        ]
    },
    {
      "anchor": "http://example.net/boo",
      "http://example.com/relations/baz": [
        {"href": "http://example.com/foo2"}
        ]
    }
  ]}
```

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Linkset: History   (12)

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| Versions | 00 | 01 | 02 | 03 | 04 | 05 | 06 | 07 |

draft-wilde-linkset-link-rel
draft-wilde-linkset

Dec 2016   Jun 2017 Aug 2017 Sep 2017   Mar 2018   Sep 2018   Aug 2019 Dec 2019 May 2020   Oct 2020
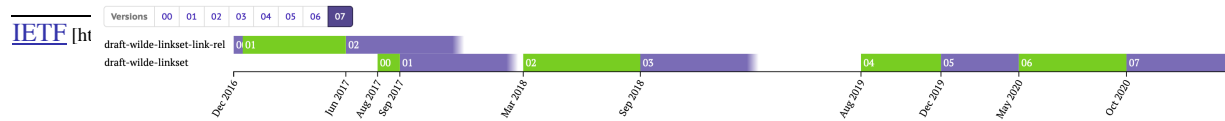
- First version: December 2016
- Published versions: 11
- History & collaboration
  - Datatracker: [draft-wilde-linkset](#)
    [https://datatracker.ietf.org/doc/draft-wilde-linkset]
  - Repo: [github.com/dret/I-D/tree/master/linkset](#) [https://github.com/dret/I-D/tree/master/linkset]
  - Issues: [github.com/dret/I-D/labels/linkset](#) [https://github.com/dret/I-D/labels/linkset]

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Content Warning

Warning: Motivation   (14)

I-D: **`draft-cedik-http-warning`** [https://datatracker.ietf.org/doc/draft-cedik-http-warning]

Co-author: André Cedik

- "Problem Details for HTTP APIs [https://tools.ietf.org/html/rfc7807]" only cover error scenarios
- Provide a pattern how warnings can be communicated in HTTP APIs
- Provide a JSON structure that APIs can use to represent embedded warnings
- Additional resources:
  - ASC 2020 presentation on YouTube: "Communicating Warning Information in HTTP APIs [https://www.youtube.com/watch?v=fdELvQt_Yvw]"

Content Warning

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Content Warning Model   (15)

- Content warning are safe to ignore but may be relevant for users
- APIs can signal that the content contains warning information
  - `Content-Warning: "embedded-warning"; 1590190500`
- There is reusable JSON structure (resembling the structure of [RFC 7807](https://tools.ietf.org/html/rfc7807) [https://tools.ietf.org/html/rfc7807])
  - Clients may choose to reuse this structure but are free to do something else
- An IANA registry is established for being able to register other kinds of content warnings
  - The only initial entry is the `embedded-warning` content warning type

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Content Warning Model (16)

- Content warning are safe to ignore but may be relevant for users

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Content Warning Example   (17)

```
POST /example HTTP/1.1
```
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```
Accept: application/json

HTTP/1.1 200 OK
Content-Type: application/json
Content-Warning: "embedded-warning"; 1590190500

{
  "request_id": "2326b087-d64e-43bd-a557-42171155084f",
  "warnings": [
    {
      "detail": "Street name was too long. It has been shortened ...",
      "instance": "https://example.com/shipments/3a186c51/msgs/c94d",
      "status": "200",
      "title": "Street name too long. It has been shortened.",
      "type": "https://example.com/errors/shortened_entry"
    },
    {
      "detail": "City for this zipcode unknown. Code for shipment ...",
      "instance": "https://example.com/shipments/3a186c51/msgs/5927",
      "status": "200",
      "title": "City for zipcode unknown.",
      "type": "https://example.com/errors/city_unknown"
    }
  ],
  "id": "3a186c51d4281acb",
  "carrier_tracking_no": "84168117830018",
  "tracking_url": "http://example.com/3a186c51d",
```

```
    "label_url": "http://example.com/shipping_label_3a186c51d.pdf",
    "price": 3.4
}
```

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Warning: History   (18)

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- First version: November 2019
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  - Datatracker: [draft-cedik-http-warning](#)

  [https://datatracker.ietf.org/doc/draft-cedik-http-warning]

  - Repo: [github.com/dret/I-D/tree/master/http-warning](#) [https://github.com/dret/I-D/tree/master/http-warning]
  - Issues: [github.com/dret/I-D/labels/http-warning](#) [https://github.com/dret/I-D/labels/http-warning]

Summary

Overview (20)

- API Deprecation [API Deprecation (1)]: `draft-dalal-deprecation-header` [https://datatracker.ietf.org/doc/draft-dalal-deprecation-header]
  - Repo: `github.com/sdatspun2/deprecation-header` [https://github.com/sdatspun2/deprecation-header]
  - Issues: `github.com/sdatspun2/deprecation-header/issues` [https://github.com/sdatspun2/deprecation-header/issues]
- Linkset [Linkset (1)]: `draft-wilde-linkset` [https://datatracker.ietf.org/doc/draft-wilde-linkset]
  - Repo: `github.com/dret/I-D/tree/master/linkset` [https://github.com/dret/I-D/tree/master/linkset]
  - Issues: `github.com/dret/I-D/labels/linkset` [https://github.com/dret/I-D/labels/linkset]
- Content Warning [Content Warning (1)]: `draft-cedik-http-warning` [https://datatracker.ietf.org/doc/draft-cedik-http-warning]
  - Repo: `github.com/dret/I-D/tree/master/http-warning` [https://github.com/dret/I-D/tree/master/http-warning]
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Thank You!   (21)

- Slides online: **dret.net/lectures/ietf-109** [http://dret.net/lectures/ietf-109]

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- More information about myself:

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  - Linked**in** **linkedin.com/in/netdret** [http://www.linkedin.com/in/netdret]