

RESTful HTTP API - Versioning

- Working with a versionable resource (a LDPRv)
 - GET Retrieve the versioned resource from a specific point in time.
- Working with a versions container (a LDPCv)
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- Working with a versioned resource (a LDPRm)
 - GET Get a specific versioned resource

Versioning in Fedora is composed of three specific types of resources - a versionable resource (a LDPRv), a versions container (a LDPCv), and the actual versioned resource (a LDPRm)- and a variety of strategies to interact with these resources. Each type of resource and the HTTP methods that can be used on them are discussed below.

Working with a versionable resource (a LDPRv)

All (regular) resources - see [RESTful HTTP API - Containers](#) - are automatically versionable.

Request URI: **/path/to/resource**

Methods: GET

GET

Retrieve the versioned resource from a specific point in time.

For more details about Fedora's datetime negotiation behaviors, see [Memento Datetime Negotiation Algorithm](#).

Request Headers:

ACCEPT-DATETIME An RFC-1123 Date. (E.g. "Wed, 30 May 2018 23:02:44 GMT")

Example:

```
curl -H "Accept: text/turtle" -H "Accept-Datetime: Wed, 29 Aug 2018 15:47:50 GMT" http://localhost:8080/rest/path/to/resource
```

Response:

```
HTTP/1.1 302 Found
Date: Wed, 29 Aug 2018 22:09:28 GMT
Set-Cookie: JSESSIONID=hrj5jm80kdjdw9attrozpy19;Path=/
Expires: Thu, 01 Jan 1970 00:00:00 GMT
Set-Cookie: rememberMe=deleteMe; Path=/; Max-Age=0; Expires=Tue, 28-Aug-2018 22:09:28 GMT
Link: <http://www.w3.org/ns/ldp#Resource>;rel="type"
Link: <http://www.w3.org/ns/ldp#Container>;rel="type"
Link: <http://www.w3.org/ns/ldp#BasicContainer>;rel="type"
Link: <http://localhost:8080/static/constraints/ContainerConstraints.rdf>; rel="http://www.w3.org/ns/ldp#constrainedBy"
Link: <http://localhost:8080/rest/path/to/resource6>; rel="timegate"
Link: <http://localhost:8080/rest/path/to/resource>; rel="original"
Link: <http://localhost:8080/rest/path/to/resource/fcr:versions>; rel="timemap"
Link: <http://mementoweb.org/ns#OriginalResource>; rel="type"
Link: <http://mementoweb.org/ns#TimeGate>; rel="type"
Accept-Patch: application/sparql-update
Accept-Post: text/turtle, text/rdf+n3, text/n3, application/rdf+xml, application/n-triples, application/ld+json
Allow: MOVE, COPY, DELETE, POST, HEAD, GET, PUT, PATCH, OPTIONS
Link: <http://localhost:8080/rest/path/to/resource/fcr:acl>; rel="acl"
Preference-Applied: return=representation
Vary: Prefer
Vary: Accept
Vary: Range
Vary: Accept-Encoding
Vary: Accept-Language
Vary: Accept-Datetime
Location: http://localhost:8080/rest/path/to/resource/fcr:versions/20180829154750
Content-Length: 0
Server: Jetty(9.3.1.v20150714)
```

Status:

200

302 Found

400

Bad Request: Accept-Datetime header not properly formatted per RFC-1123

406

Unacceptable: No appropriate versioned resource found for the supplied Accept-Datetime value

Working with a versions container (a LDPCv)

Request URI: `/path/to/resource/fcr:versions`

Methods: GET, POST

GET

Get a list of the available versions of an object

Although Fedora resources currently expose their "versions container" at the `<resource-URI>/fcr:versions` endpoint, it is recommended that this endpoint be "discovered" by inspecting the Fedora resource's Link header of with `rel="timemap"`:

```
Link: <http://localhost:8080/rest/path/to/resource/fcr:versions>; rel="timemap"
```

Request Headers:

ACCEPT

application/ld+json, application/link-format, application/n-triples, application/rdf+xml, application/x-turtle, application/xhtml+xml, application/xml, text/html, text/n3, text/plain, text/rdf+n3, text/turtle

Example:

```
curl -H "Accept: text/turtle" http://localhost:8080/rest/path/to/resource/fcr:versions
```

Response:

Status: HTTP/1.1 200 OK

Headers:

ETag: W/"671df2a47622331fffb6b70b6156526a67e5ab760"
Last-Modified: Wed, 30 May 2018 21:03:54 GMT
Link: <http://www.w3.org/ns/ldp#Resource>; rel="type"
Link: <http://www.w3.org/ns/ldp#RDFSSource>; rel="type"
Link: <http://localhost:8080/rest/path/to/resource/fcr:versions/fcr:acl>; rel="acl"
Link: <http://mementoweb.org/ns#TimeMap>; rel="type"
Link: <http://localhost:8080/rest/path/to/resource>; rel="original"
Link: <http://localhost:8080/rest/path/to/resource>; rel="timegate"
Link: <http://localhost:8080/rest/path/to/resource/fcr:versions>; rel="timemap"
Vary-Post: Memento-Datetime
Allow: POST, HEAD, GET, OPTIONS, DELETE
Preference-Applied: return=representation
Vary: Prefer
Vary: Accept
Vary: Range
Vary: Accept-Encoding
Vary: Accept-Language
Content-Type: text/turtle; charset=utf-8
Content-Length: 1944

Body:

```
@prefix memento: <http://mementoweb.org/ns#> .
@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .
@prefix fedora: <http://fedora.info/definitions/v4/repository#> .
@prefix ldp: <http://www.w3.org/ns/ldp#> .

<http://localhost:8080/rest/path/to/resource/fcr:versions>
  rdf:type          fedora:TimeMap ;
  rdf:type          fedora:Resource ;
  fedora:lastModifiedBy "bypassAdmin" ;
  fedora:createdBy    "bypassAdmin" ;
  fedora:created      "2018-05-30T21:00:48.169Z"^^<http://www.w3.org/2001/XMLSchema#dateTime> ;
  fedora:lastModified "2018-05-30T21:03:54.88Z"^^<http://www.w3.org/2001/XMLSchema#dateTime> ;
  memento:original    <http://localhost:8080/rest/path/to/resource> ;
  rdf:type            ldp:RDFSSource ;
  fedora:writable      true ;
  ldp:contains         <http://localhost:8080/rest/path/to/resource/fcr:versions/20180530210300> ;
  ldp:contains         <http://localhost:8080/rest/path/to/resource/fcr:versions/20180530210354> .
```

Status:

200

OK

404

Not Found: Versions container resource does not exist.

POST

Create a new versioned resource (a new LDPRm)

Versions are created such that the current time will be used by default and the current state of the versionable resource will be preserved. Any specified body will be ignored.

Example:

```
# Create version from current state of the object
curl -X POST http://localhost:8080/rest/path/to/resource/fcr:versions
```

Response:

```
HTTP/1.1 201 Created
Date: Wed, 29 Aug 2018 21:21:34 GMT
Set-Cookie: JSESSIONID=dmqpuv06yty7b0tf9y94z3rx;Path=/
Expires: Thu, 01 Jan 1970 00:00:00 GMT
Set-Cookie: rememberMe=deleteMe; Path=/; Max-Age=0; Expires=Tue, 28-Aug-2018 21:21:34 GMT
ETag: W/"f7c04eb7e3f04c17d1fc852bef5f6b030ea271e7"
Last-Modified: Wed, 29 Aug 2018 20:22:11 GMT
Link: <http://localhost:8080/static/constraints/ContainerConstraints.rdf>; rel="http://www.w3.org/ns/ldp#constrainedBy"
Link: <http://localhost:8080/rest/path/to/resource>; rel="timegate"
Link: <http://localhost:8080/rest/path/to/resource>; rel="original"
Link: <http://localhost:8080/rest/path/to/resource/fcr:versions>; rel="timemap"
Memento-Datetime: Wed, 29 Aug 2018 21:21:34 GMT
Link: <http://mementoweb.org/ns#Memento>; rel="type"
Location: http://localhost:8080/rest/path/to/resource/fcr:versions/20180829212134
Content-Type: text/plain
Content-Length: 68
Server: Jetty(9.3.1.v20150714)

http://localhost:8080/rest/versioning/v9/fcr:versions/20180829212134
```

Status:

201

Created: if a new version is created successfully

404

Not Found: if the version container resource does not exist

Working with a versioned resource (a LDPRm)

Request URI: `/path/to/resource/fcr:versions/<timestamp>`

Methods: GET

GET

Get a specific versioned resource

Request Headers:

ACCEPT

application/ld+json, application/link-format, application/n-triples, application/rdf+xml, application/x-turtle, application/xhtml+xml, application/xml, text/html, text/n3, text/plain, text/rdf+n3, text/turtle

Example:

```
curl -H "Accept: text/turtle" http://localhost:8080/rest/path/to/resource/fcr:versions/20180829154750
```

Response:

HTTP/1.1 200 OK

Date: Thu, 30 Aug 2018 14:31:30 GMT
Set-Cookie: JSESSIONID=yb9ppso27n221q1xdvu4cqzi5;Path=/
Expires: Thu, 01 Jan 1970 00:00:00 GMT
Set-Cookie: rememberMe=deleteMe; Path=/; Max-Age=0; Expires=Wed, 29-Aug-2018 14:31:30 GMT
ETag: W/"e766f5e674845e72f7d589e346b6a96a7735336e"
Last-Modified: Wed, 29 Aug 2018 15:47:31 GMT
Link: <http://www.w3.org/ns/ldp#Resource>;rel="type"
Link: <http://www.w3.org/ns/ldp#Container>;rel="type"
Link: <http://www.w3.org/ns/ldp#BasicContainer>;rel="type"
Link: <http://localhost:8080/static/constraints/ContainerConstraints.rdf>; rel="http://www.w3.org/ns/ldp#constrainedBy"
Link: <http://localhost:8080/rest/path/to/resource>; rel="timegate"
Link: <http://localhost:8080/rest/path/to/resource>; rel="original"
Link: <http://localhost:8080/rest/path/to/resource/fcr:versions>; rel="timemap"
Allow: GET,HEAD,OPTIONS,DELETE
Memento-Datetime: Wed, 29 Aug 2018 15:47:50 GMT
Link: <http://mementoweb.org/ns#Memento>; rel="type"
Preference-Applied: return=representation
Vary: Prefer
Vary: Accept
Vary: Range
Vary: Accept-Encoding
Vary: Accept-Language
Content-Type: text/turtle;charset=utf-8
Content-Length: 1754
Server: Jetty(9.3.1.v20150714)

@prefix premis: <http://www.loc.gov/premis/rdf/v1#> .
@prefix test: <info:fedora/test/> .
@prefix memento: <http://mementoweb.org/ns#> .
@prefix rdfs: <http://www.w3.org/2000/01/rdf-schema#> .
@prefix webac: <http://fedora.info/definitions/v4/webac#> .
@prefix acl: <http://www.w3.org/ns/auth/acl#> .
@prefix ns001: <http://localhost:8080/rest/ktest/> .
@prefix xsi: <http://www.w3.org/2001/XMLSchema-instance> .
@prefix xmlns: <http://www.w3.org/2000/xmlns/> .
@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .
@prefix fedora: <http://fedora.info/definitions/v4/repository#> .
@prefix xml: <http://www.w3.org/XML/1998/namespace> .
@prefix ebucore: <http://www.ebu.ch/metadata/ontologies/ebucore/ebucore#> .
@prefix ldp: <http://www.w3.org/ns/ldp#> .
@prefix xs: <http://www.w3.org/2001/XMLSchema> .
@prefix fedoraconfig: <http://fedora.info/definitions/v4/config#> .
@prefix foaf: <http://xmlns.com/foaf/0.1/> .
@prefix dc: <http://purl.org/dc/elements/1.1/> .

<http://localhost:8080/rest/path/to/resource>
 rdf:type ldp:RDFSource ;
 rdf:type ldp:Container ;
 rdf:type fedora:Resource ;
 rdf:type ldp:BasicContainer ;
 rdf:type fedora:Container ;
 fedora:created "2018-08-29T15:47:31.041Z"^^<http://www.w3.org/2001/XMLSchema#dateTime> ;
 fedora:writable true ;
 fedora:lastModified "2018-08-29T15:47:31.041Z"^^<http://www.w3.org/2001/XMLSchema#dateTime> ;
 fedora:lastModifiedBy "fedoraAdmin" ;
 fedora:createdBy "fedoraAdmin" ;
 rdf:type ldp:RDFSource ;
 rdf:type ldp:Container ;
 fedora:writable true .

Status:

200

OK

404

Not Found: Versions container resource does not exist.