



EIDR RESOLUTION PROXIES

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Background

Resolving an ID is a fundamental part of any DOI system. Resolutions can be done through the EIDR Registry and its mirror or one of its resolution proxies: the DOI Proxy; and the EIDR Enhanced Proxy. There are three aspects to resolution:

- Record Type: Content ID Record, Party ID Record, etc.; this is encoded in the prefix of an EIDR ID (10.5240, 10.5237, etc.)
- Resolution Type: the kind of data returned (Full, DOIKernel, etc.)
- Format: XML, JSON, TSV (tab-separated value)

If you ask a proxy for a format it does not support, it redirects to the other one if it thinks the other one supports the request, and returns an error otherwise.

A short summary of the full set of rules is:

- Query parameters take priority over MIME types. If there is anything at all in the query parameters, the MIME type is ignored.
- If neither a resolution type nor a format is provided, a Proxy returns Full metadata in its native format (JSON for the EIDR Enhanced Proxy, XML for the DOI Proxy.)
- If only a resolution type is provided, the Proxy returns that resolution type in its native format.
- If only a format is provided, the Proxy returns Full metadata in the requested format.
- If a format is not supported by the Proxy, the request is redirected to the other Proxy: XML requests to the EIDR Enhanced Proxy go to the DOI Proxy, and JSON and TSV requests sent to the DOI Proxy go to the EIDR Enhanced Proxy.

The above applies only to resolutions. The EIDR Enhanced Proxy supports other APIs as well and will return the results as JSON (and in some cases TSV.)

Neither system supports resolution of EIDR user records (10.5238 prefix), e.g. 10.5238/bfi-bulk

Resolution Types

EIDR supports several resolution types, all of which are available through:

- the EIDR registry and its mirror in XML using query parameters (See *EIDR 2.6 REST API Reference* for details)
- the DOI proxy using either query parameters or content negotiation
- the EIDR Enhanced Proxy using either query parameters or content negotiation (See *EIDR 2.6 API Proxy* for details).

Content Records (10.5240 prefix)

API Resolution Type	XML Schema type (EIDR Registry and DOI Proxy)	JSON/TSV
Full	eidr:fullObjectInfoType	See <i>EIDR 2.6 API Proxy</i>
Simple	eidr:simpleDataInfoType	See <i>EIDR 2.6 API Proxy</i>
SelfDefined	eidr:allSelfDefinedInfoType	See <i>EIDR 2.6 API Proxy</i>
Provenance	eidr:provenanceInfoType	See <i>EIDR 2.6 API Proxy</i>
DOI Kernel	doi:kernelMetadata with a doi:referentCreation element	See <i>EIDR 2.6 API Proxy</i>
Alternate ID	eidr:alternateIDsType	See <i>EIDR 2.6 API Proxy</i>
Linked Alternate ID	eidr:linkedAlternateIDsType	See <i>EIDR 2.6 API Proxy</i>

Party Records (10.5237 prefix)

API Resolution Type	XML Schema type used	JSON/TSV
Full	eidr:partyResolutionType	See <i>EIDR 2.6 API Proxy</i>

API Resolution Type	XML Schema type used	JSON/TSV
DOI Kernel	doi:kernelMetadata with a doi:referentParty element	See <i>EIDR 2.6 API Proxy</i>

Video Service Records (10.5239 prefix)

API Resolution Type	XML Schema type used	JSON/TSV
Full	eidr:serviceResolutionType	See <i>EIDR 2.6 API Proxy</i>
DOI Kernel	doi:kernelMetadata with a doi:referentParty element	See <i>EIDR 2.6 API Proxy</i>

All Proxy resolutions follow alias chains, and behave like the `Resolve()` call with `followAlias` set to true. See the *EIDR Registry Programmer's Guide* for information on special cases for deleted objects, over-nested aliases, etc.

Both Proxies support parameterized resolution and content negotiation via an Accept Header. If the HTTP request to the proxy contains both a resolution parameter and an Accept header, the resolution parameter is honored rather than the Accept header. This allows easy browser-based viewing of XML and JSON records and simpler cURL commands.

If there is no Accept header and no resolution parameter, the Proxies return Full metadata for the underlying object if the Record type is supported, with a special case for “Accept: */*” from a browser.

Parameterized Resolution

For both Proxies, if no format is specified for a supported record type, the system behaves as if its native format has been requested (XML for the DOI Proxy, JSON for the EIDR Enhanced Proxy.)

DOI

This uses the standard Handle System `locatt` mechanism¹. Resolutions take the following forms and return XML.

```
https://doi.org/<Handle Prefix>/<Handle Suffix>
```

```
https://doi.org/<Handle Prefix>/<Handle Suffix>?locatt=type:Type
```

Summary:

- Any type that requests JSON or TSV redirects to the EIDR Enhanced Proxy

¹ See http://www.handle.net/tech_manual/Handle_Technical_Manual.pdf and http://www.handle.net/overviews/handle_type_10320_loc.html

- A supported resolution type returns XML if no format is specified
- A format with no resolution type returns XML Full metadata
- A request with neither format not type returns XML Full metadata

Type is as follows (*None* means a query string is not provided):

DOI Prefix	locatt=type:	XML Schema type used
Party Records		
10.5237	None	If the request has no Accept headers, or has "Accept: */*" and is not from a browser, or has an Accept header without any types handled by content negotiation, returns eidr:partyResolutionType
10.5237	json tsv	Redirects to EIDR Enhanced Proxy
10.5237	full xml full+xml	eidr:partyResolutionType
10.5237	full+json full+tsv	Redirects to EIDR Enhanced Proxy
10.5237	doikernel doikernel+xml	doi:kernelMetadata with a doi:referentParty element
10.5237	doikernel+json doikernel+tsv	Redirects to EIDR Enhanced Proxy
Video Service Records		
10.5239	None	If the request has no Accept headers, or has "Accept: */*" and is not from a browser, or has an Accept header without any types handled by content negotiation, returns eidr:serviceResolutionType
10.5239	json tsv	Redirects to EIDR Enhanced Proxy
10.5239	full xml full+xml	eidr:serviceResolutionType
10.5239	full+json full+tsv	Redirects to EIDR Enhanced Proxy
10/5239	doikernel doikernel+xml	doi:kernelMetadata with a doi:referentParty element
10.5239	doikernel+json doikernal+tsv	Redirects to EIDR Enhanced Proxy
Content Records		
10.5240	none	If the request has no Accept headers, or has "Accept: */*", return Full metadata in XML If the request header has an Accept header without any types handled by content

DOI Prefix	locatt=type:	XML Schema type used
		negotiation, returns eidr:fullObjectInfoType
10.5240	full xml full+xml	eidr:fullObjectInfoType
10.5240	full+json full+tsv json tsv	Redirects to EIDR Enhanced Proxy
10.5240	simple simple+xml	eidr:simpleDataInfoType
10.5240	simple+json simple+tsv	Redirects to EIDR Enhanced Proxy
10.5240	selfdefined selfdefined+xml	eidr:allSelfDefinedInfoType
10.5240	selfdefined+json selfdefined+tsv	Redirects to EIDR Enhanced Proxy
10.5240	alternateids alternateids+xml	eidr:alternateIDsType
10.5240	alternateids+json alternateids+tsv	Redirects to EIDR Enhanced Proxy
10.5240	doikernel doikernel+xml	doi:kernelMetadata
10.5240	doikernel+json doikernel+tsv	Redirects to EIDR Enhanced Proxy
10.5240	provenance provenance+xml	eidr:provenanceInfoType
10.5240	provenance+json provenance+tsv	Redirects to EIDR Enhanced Proxy
10.5240	linkedalternateids linkedalternateids+xml	eidr:linkedAlternateIDsType
10.5240	linkedalternateids +json linkedalternateids+tsv	Redirects to EIDR Enhanced Proxy

EIDR Enhanced Proxy

This uses standard web-based query parameters. Resolutions take the following form and return the requested or implied type, or an HTTP error for unsupported types.

`https://proxy.eidr.org/<Handle Prefix>/<Handle Suffix>?type=Type&format=Format`

Summary:

- Any request that asks for XML redirects to the DOI Proxy
- A supported resolution type returns JSON if no format is specified

- A format with no resolution type returns Full metadata
- A request with neither format not type returns JSON Full metadata

DOI Prefix	HTTP query parameters	Return value
Party Records		
10.5237	format=xml type=full&format=xml	Redirects to DOI Proxy
10.5237	none format=json type=full type=full&format=json	Returns Full metadata in JSON
10.5237	format=tsv type=full&format=tsv	Returns Full metadata in TSV
10.5237	type=doikernel&format=xml	Redirects to DOI Proxy
10.5237	type=doikernel type=doikernel&format=json	Returns DOI metadata in JSON
	type=doikernel&format=tsv	Returns DOI metadata in TSV
Video Service Records		
10.5239	format=xml type=full&format=xml	Redirects to DOI Proxy
10.5239	none format=json type=full type=full&format=json	Returns Full metadata in JSON
10.5239	format=tsv type=full&format=tsv	Returns Full metadata in TSV
10.5239	type=doikernel&format=xml	Redirects to DOI Proxy
10/5239	type=doikernel type=doikernel&format=json	Returns DOI metadata in JSON
10.5239	doikernel&format=tsv	Returns DOI metadata in TSV
Content Records		
Full		
10.5240	none type=full format=json type=full&format=json	JSON Full Metadata
10.5249	format=tsv type=full&format=tsv	TSV Full metadata
10.5240	format=xml type=full&format=xml	Redirects to the DOI Proxy
Simple		
10.5240	type=simple type=simple&format=json	Returns JSON Simple metadata

DOI Prefix	HTTP query parameters	Return value
	type=simple&format=tsv	Returns TSV Simple metadata
	type=simple&format=xml	Redirects to DOI Proxy
SelfDefined		
10.5240	type=selfdefined type=selfdefined&format=json	JSON SelfDefined metadata
10-5240	type=selfdefined&format=tsv	TSV SelfDefined metadata
	type=selfdefined&format=xml	Redirects to the DOI Proxy
AlternateIDs		
10.5240	type=alternateids type=alternateids&format=json	JSON AlternateIDs metadata
10.5240	type=alternateids&format=tsv	TSV AltrnateIDs metadata
	type=alternateids&format=xml	Redirect to DOI Proxy
DOIKernel		
10.5240	type=doikernel type=doikernel&format=json	DOIKernel metadata in JSON
10.5240	type=doikernel&format=tsv	DOIKernel mtadata in TSV
	type=doikernel&format=xml	Redurect to DOI Proxy
Provenance		
10.5240	type=provenance type=provenance&format=json	Provenance mtadata in JSON
10.5240	type=provenance&format=tsv	Provenance metadata in TSV
	type=provenance&format=xml	Redirects to the DOI Proxy
LinkedLternateIDs		
10.5240	type=linkedalternateids type=linkedalternateids&format=json	JSON linkedAlternateIDs
10.5240	type=linkedalternateids&format=tsv	TSV linkedAlternateIDs
10.5240	type=linkedalternateids&format=xml	Redirects to the DOI Proxy

Content Negotiation

Content Negotiation allows a user to request a particular representation of a web resource, specified as one or more MIME types.² EIDR recognizes several MIME types for each prefix.

DOI Prefix	MIME Type	DOI Proxy	EIDR Enhanced Proxy
Party Records			
10.5237	None	EIDR UI web page for the Party if request comes from a browser; XML as	Full metadata in JSON

² See http://en.wikipedia.org/wiki/Content_negotiation for a useful overview, <http://www.w3.org/Protocols/rfc2616/rfc2616-sec12.html> for the spec, https://developer.mozilla.org/en-US/docs/Web/HTTP/Content_negotiation for its use with HTML browsers, and <http://www.crosscite.org/cn/> for its use by other DOI Registration Agencies.

DOI Prefix	MIME Type	DOI Proxy	EIDR Enhanced Proxy
		eidr:partyResolutionType otherwise	
	application/vnd.eidr.full	XML as eidr:partyResolutionType	Full metadata in JSON
10.5237	application/vnd.eidr.full+xml	XML as eidr:partyResolutionType	Redirects to the DOI Proxy
	application/vnd.eidr.full+json application/vnd.eidr.full+tsv	Redirects to the JSON Proxy	Ful metadata nsecified format
10.5237	application/vnd.doi.kernel+xml	XML as doi:kernelMetadata with a doi:referentParty element	Redirects to the DOI Proxy
	application/vnd.doi.kernel+json application/vnd.doi.kernel+tsv	Redirects to the DOI Proxy	Full metadata in specified format
	application/vnd.doi.kernel	XML as doi:kernelMetadata with a doi:referentParty element	DOIKernel metadata in JSON
10.5237	text/html	EIDR UI web page for the Party	Redirects to the DOI Proxy
10.5237	text/xml application/xml	XML as eidr:partyResolutionType	Redirects to the DOI Proxy
	application/json	Reidrects to JSON proxy	Full metadata in JSON
Video Service Records			
10.5239	None	EIDR UI web page for the Video Service if request comes from a browser; XML as eidr:serviceResolutionType otherwise	Full metadata in JSON
10.5239	application/vnd.eidr.full+xml	XML as eidr:serviceResolutionType	Redirects to the DOI Proxy
	application/vnd.eidr.full+json application/vnd.eidr.full+tsv	Redirects to the JSON Proxy	Full metadata in specified format
	application/vnd.eidr.full	XML as eidr:serviceResolutionType	Ful metadata in seecifid format
10/5239	application/vnd.doi.kernel+xml	XML as doi:kernelMetadata with a doi:referentParty element	Redirects to the DOI Proxy
	application/vnd.doi.kernel+json application/vnd.doi.kernel+tsv	Redirects to the JSON Proxy	DOIKernel metadata in specified format
	application/vnd.doi.kernel	XML as eidr:serviceResolutionType	DOIKernel metadata in

DOI Prefix	MIME Type	DOI Proxy	EIDR Enhanced Proxy
			JSON
10.5237	text/html	EIDR UI web page for the Video Service	Redirects to the DOI Proxy
10.5237	text/xml application/xml	XML as eidr:serviceResolutionType	Redirects to the DOI Proxy
	application/json	Redirects to JSON proxy	Full metadata in JSON
Content Records			
10.5240	None	EIDR UI web page for the Content Record if the request comes from a browser; XML as eidr:fullObjectInfoType otherwise	JSON Full metadata
10.5240	application/vnd.eidr.full+xml	XML as eidr:fullObjectInfoType	Redirects to the DOI Proxy
	application/vnd.eidr.full+json	Redirects to the JSON Proxy	JSON Full metadata
	application/vnd.eidr.full+tsv	Redirects to the JSON Proxy	TSV Full metadata
	application/vnd.eidr.full	XML as eidr:fullObjectInfoType	JSON Full metadata
10.5240	application/vnd.eidr.simple+xml	XML as eidr:simpleDataInfoType	Redirects to the DOI Proxy
	application/vnd.eidr.simple+json	Redirects to the JSON Proxy	Simple metadata in JSON
	application/vnd.eidr.simple+tsv	Redirects to the JSON Proxy	Simple metadata in TSV
	application/vnd.eidr.simple	XML as eidr:simpleDataInfoType	Simple metadata in JSON
10.5240	application/vnd.eidr.selfdefined+xml	XML as eidr:allSelfDefinedInfoType	Redirects to the DOI Proxy
	application/vnd.eidr.selfdefined+json	Redirects to the JSON Proxy	JSON SelfDefined metadata
	application/vnd.eidr.selfdefined+tsv	Redirects to the JSON Proxy	TSV SelfDefined metadata
	application/vnd.eidr.selfdefined	XML as eidr:allSelfDefinedInfoType	JSON SelfDefined metadata

DOI Prefix	MIME Type	DOI Proxy	EIDR Enhanced Proxy
10.5240	application/vnd.eidr.provenance+xml	XML as eidr:provenanceInfoType	Redirects to the DOI Proxy
	application/vnd.eidr.provenance+json	Redirects to the JSON Proxy	Provenance metadata in JSON
	application/vnd.eidr.provenance+tsv	Redirects to the JSON Proxy	Provenance metadata in TSV
	application/vnd.eidr.provenance	XML as eidr:provenanceInfoType	Provenance metadata in JSON
10.5240	application/vnd.doi.kernel+xml	XML as doi:kernelMetadata	Redirects to the DOI Proxy
	application/vnd.doi.kernel+json	Redirects to the JSON Proxy	DOIKernel metadata in JSON
	application/vnd.doi.kernel+tsv	Redirects to the JSON Proxy	DOIKernel metadata in TSV
	application/vnd.doi.kernel	XML as doi:kernelMetadata	DOIKernel metadata in JSON
10.5240	application/vnd.eidr.alternateids+xml	XML as eidr:alternateIDsType	Redirects to the DOI Proxy
	application/vnd.eidr.alternateids+json	Redirects to the JSON Proxy	DOIKernel metadata in JSON
	application/vnd.eidr.alternateids+tsv	Redirects to the JSON Proxy	DOIKernel metadata in TSV
	application/vnd.eidr.alternateids	XML as eidr:alternateIDsType	DOIKernel metadata in JSON
10.5240	application/vnd.eidr.linkedalternateids+xml	XML as eidr:linkedAlternateIDsType	Redirects to the DOI Proxy
	application/vnd.eidr.linkedalternateids+json	Redirects to the JSON Proxy	JSON linkedAlternateIDs
	application/vnd.eidr.linkedalternateids+tsv	Redirects to the JSON Proxy	TSV linkedAlternateIDs

DOI Prefix	MIME Type	DOI Proxy	EIDR Enhanced Proxy
	application/vnd.eidr.linkedalternateids	XML as eidr:linkedAlternateIDsType	JSON linkedAlternateIDs
10.5240	text/html application/xhtml+xml	EIDR UI web page for the Content Record	Redirects to the DOI Proxy
10.5240	text/xml application/xml	XML as eidr:fullObjectInfoType	Redirects to DOI Proxu
	application/json	Redirect to JSON Proxy	JSON full metadata
	text/tab-separated-values	Redirect to JSON Proxy	TSV full metadata

Notes:

- EIDR XML, JSON, and TSV are always UTF-8.
- An Accept header value of */* is a special case. If the request comes from a browser it returns the UI page for the requested ID; otherwise, it returns Full metadata for the ID.
- The EIDR Registry does not support application/xhtml+xml, and returns text/html
- The format parameter, if present, will override the MIME type.

Browser Considerations

All browsers send an `Accept` header, but the headers are not standardized³. If you want to see a specific format in a browser, you must use the `?locatt=type:` mechanism. The Proxy will return the UI page if:

- It gets "Accept: */*" from a browser.
- It gets "Accept: text/html" or "Accept: application/xhtml+xml" whether or not the source is a browser

Examples

Note: these are not exhaustive; all formats can be gotten fomr either the DOI Proxy of the EIDR API Proxy, and not all examples give both forms.

The DOI Proxy accepts EIDR IDs in their canonical form and in URN form⁴.

The Enhanced API Proxy accepts EIDR IDs in their canonical form.

³ See https://developer.mozilla.org/en-US/docs/Web/HTTP/Content_negotiation for a useful summary of User Agents and their Accept headers, and <http://blogs.msdn.com/b/ieinternals/archive/2009/07/01/ie-and-the-accept-header.aspx> for a discussion of Internet Explorer's behavior.

⁴ The DOI Proxy also accepts the non-standard "urn:doi:10.5240:..." See *EIDR ID Formats* for details.

Canonical form:

- To get EIDR Full XML from curl, use `curl -L https://doi.org/10.5240/E5C6-A6EA-403E-5D80-8BBF-G` or `curl -L https://proxy.eidr.org/resolve/10.5240/E5C6-A6EA-403E-5D80-8BBF-G?format=xml`
- To get EIDR Full JSON from curl, use `curl -L https://proxy.eidr.org/resolve/10.5240/E5C6-A6EA-403E-5D80-8BBF-G` or `curl -L https://doi.org/10.5240/E5C6-A6EA-403E-5D80-8BBF-G?locatt=type:json`
- To get EIDR Full TSV from curl, use `curl -L https://proxy.eidr.org/resolve/10.5240/E5C6-A6EA-403E-5D80-8BBF-G?type=tsv` or `curl -L https://doi.org/10.5240/E5C6-A6EA-403E-5D80-8BBF-G?locatt=type:tsv`
- To get EIDR DOI Kernel XML from curl, use `curl -L -H "Accept: application/vnd.doi.kernel" https://doi.org/10.5240/E5C6-A6EA-403E-5D80-8BBF-G`⁵
- To get EIDR DOI Kernel JSON from curl, use `curl -L https://doi.org/10.5240/E5C6-A6EA-403E-5D80-8BBF-G?locatt=type:doikernel+json`
- To get EIDR DOI Kernel TSV from curl, use `curl -L https://doi.org/10.5240/E5C6-A6EA-403E-5D80-8BBF-G?type=doikernel&format=tsv`
- To get the EIDR UI for an EIDR ID in a browser, use `https://doi.org/10.5240/E5C6-A6EA-403E-5D80-8BBF-G`
- To get EIDR Full XML in a browser, use `https://doi.org/10.5240/E5C6-A6EA-403E-5D80-8BBF-G?locatt=type:Full` -- if you do not include the parameter, the Proxy will behave based on the browser's `Accept` header
- To get EIDR Full JSON in a browser, use `https://proxy.eidr.org/resolve/10.5240/E5C6-A6EA-403E-5D80-8BBF-G?format=json`
- To get EIDR Full TSV in a browser, use `https://proxy.eidr.org/resolve/10.5240/E5C6-A6EA-403E-5D80-8BBF-G?format=tsv`
- To get DOI Kernel XML in a browser, use `https://doi.org/10.5240/E5C6-A6EA-403E-5D80-8BBF-G?locatt=type:DOIKernel`
- To get EIDR DOI Kernel JSON in a browser, use `https://proxy.eidr.org/resolve/10.5240/E5C6-A6EA-403E-5D80-8BBF-G?type=doikernel&format=json`
- To get EIDR DOI Kernel TSV in a browser, use `https://proxy.eidr.org/resolve/10.5240/E5C6-A6EA-403E-5D80-8BBF-G?type=doikernel&format=tsv`

⁵ Or "Accept: application/vnd.doi.kernel+xml"

URN:

You can substitute a URN form of the EIDR ID in the above DOI Proxy examples such as:

- To get the EIDR UI in a browser for an EIDR ID in URN form, use
`https://doi.org/urn:eidr:10.5240:E5C6-A6EA-403E-5D80-8BBF-G`
- To get EIDR Full XML in a browser with the EIDR ID in URN form, use
`https://doi.org/urn:eidr:10.5240:E5C6-A6EA-403E-5D80-8BBF-G?locatt=type:Full`
- The DOI Proxy will translate a URN to canonical form before sending it to the EIDR API Proxy, so this is a valid request: `curl -L https://doi.org/urn:eidr:10.5240:E5C6-A6EA-403E-5D80-8BBF-G?locatt=type:Full+json`

Future Features

There is a short list of other types under consideration. If you have a need for any of these or suggestions for other formats and types, please send mail to support@eidr.org

Formats:

- Various flavors of RDF (XML, JSON)

Resolution types:

- EN 15907
- EBUCore
- EN 15744