

WebDAV Advanced Collections Protocol

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These are the slides as presented at the WebDAV WG at the 42nd IETF in Chicago by Jim Davis. These slides reflect corrections made during discussion. The presentation included a design for direct references that was created by two of the authors (Davis and Whitehead) during the week. This design is not documented in the current ID.

Terminology

- **Referential Resource:** A resource that has no content of its own, but rather is a reference to another resource
- **Ordinary Resource:** A resource that is not a reference to another resource
- **Target Resource:** The resource referenced by a referential member of a collection
- **Direct Reference:** A reference that has the property that operations on it are passed through to its target
- **Indirect Reference:** A reference that has the property that operations on it do not affect its target
- **Strong Reference:** A reference whose referential integrity is guaranteed by the server
- **Weak Reference:** A reference whose referential integrity is not guaranteed by the server

Scope of This Specification

- Direct and weak indirect and references are supported
- Headers and properties are designed to be extensible
- Allow future support for strong references

Referential Resource

Has four properties

- `resourcetype` = `dav:reference`
- `reftarget` (new) = URL of target resource.
- `reftype` (new) = `dav:direct` or `dav:indirect`
- `refintegrity` (new) = `dav:weak` or `dav:strong`

New HTTP headers

- Ref-Type
- Ref-Target

New methods

- MKREF
- DELREF

New properties

- on reference resource:
 - reftarget - URL of target resource.
 - reftype - dav:direct or dav:indirect
 - refintegrity - dav:weak or dav:strong
- on target resource:
 - references - list of URLs of targets.

Operations on Indirect Reference

- Redirected:
 - GET, HEAD, PUT, POST
- Affect reference:
 - PROPPATCH, PROPFIND, DELREF, DELETE, COPY, MOVE, LOCK,
- Passed to target:
 - none

Operations on Direct Reference

- Redirected:
 - None
- Affect reference:
 - DELREF, DELETE, COPY, MOVE
- Passed to target:
 - GET*, HEAD*, PUT, POST, PROPFIND, PROPPATCH, LOCK
 - *except Ref-Type and Ref-Target headers are added

Creating Referential Resources

[Request]

```
MKREF /~whitehead/dav/spec08.ref HTTP/1.1
Host: www.ics.uci.edu
Ref-Target: http://www.ics.uci.edu/i-d/draft-webdav-protocol-08.txt
Ref-Type: <dav:indirect>
```

[Response]

```
HTTP/1.1 201 Created
```

Deleting Referential Resources

[Request]

```
DELREF /~whitehead/dav/spec08.ref HTTP/1.1
Host: www.ics.uci.edu
```

[Response]

```
HTTP/1.1 200 OK
```

Operations on Target Resources

- Operations on targets of weak, indirect references have no effect on the referential resource
- Operations on targets of direct references:
 - DELETE deletes all references
 - MOVE updates ref-target of references

Security issue:

MOVE of target T to a new, secret place reveals location to reference R

Solution: COPY it, then DELETE.

Issues

- Owner of T should be able to prevent creation of direct references
- References should have distinct ACL from target.
- Cross-server reference acts like a proxy.

Ordered Collections

Not presented, for lack of time.

Information

- Draft protocol specification is at: <http://www.ics.uci.edu/~ejw/authoring/collection/draft-ietf-webdav-collection-protocol-01.txt>
(Note that this draft of the protocol does not include the design for direct references presented at the IETF.)
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