



Cloud Data Management Interface Extension: Local Affinity

Version 1.0b

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Working Draft

Revision History

Date	Version	By	Comments
1/22/12	1.0a	John Eastman, Mezeo Software James Perry, Mezeo Software	Initial Creation
1/23/12	1.0b	Marie McMinn	Performed technical edit.

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Location Affinity CDMI Extension

Overview

Cloud storage systems may be distributed over more than a single location. Clients of the system need to explicitly specify that an object exists in a particular location due to proximity to other resources (compute resources, people, etc.). This extension proposes a new capability that allows metadata on an object that dictates the locations where the object should exist.

Affinity is similar to the `cdmi_geographic_placement` capability in that it suggests to the system where an object can or cannot be located. However, affinity is a much stronger attribute, as it directs an object or copies of an object to exist in specific locations that may be more finely grained than geo-political borders (data center, physical building location, etc.).

Modifications to the current CDMI spec:

The affinity of an object may have implications to the `cdmi_data_redundancy_provided` data systems metadata value of an object. If more than one location is specified in the value for `cdmi_data_affinity`, additional copies of the object may be implied by the system, which would adjust the `cdmi_data_redundancy_provided` value.

1) Add a table entry to the end of table 104 in clause 12.1.3 as follows:

Capability	Type	Definition
<code>cdmi_data_affinity</code>	JSON Array of JSON Strings	If present, this capability shall list the data locations available to objects utilizing the capabilities set. If absent, the system shall determine the data location. The JSON array items used as identifiers for locations shall be arbitrary JSON strings.

2) Add a table entry to the end of table 118 in clause 16.4 as follows:

Metadata Name	Type	Description	Requirement
<code>cdmi_data_affinity</code>	JSON Array of JSON Strings	Each string contains a list of identifiers, each specifying a location where it is desired for the object to be stored. The list of location identifiers available to the object is specified by the <code>cdmi_data_affinity</code> capability (as described in 12.1.3).	Optional

3) Add a table entry to the end of table 119 in clause 16.5 as follows:

Metadata	Type	Description	Requirement
<code>cdmi_data_affinity_provided</code>	JSON Array of JSON Strings	Each string contains an identifier that corresponds to a location where the object is stored.	Optional