
# 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<br>James Perry, Mezeo Software | Initial Creation |
| 1/23/12 | 1.0b | Marie McMinn | Performed technical edit. |

# 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 |
|---|---|---|
| cdmi_data_affinity | 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.<br>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 |
|---|---|---|---|
| cdmi_data_affinity | 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 cdmi_data_affinity 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 |
|---|---|---|---|
| cdmi_data_affinity_provided | JSON Array of JSON Strings | Each string contains an identifier that corresponds to a location where the object is stored. | Optional |