CDMI Extension: Local Affinity

Version 1.1a

Working Draft

Revision History

Date	Version	By	Comments
08-28-2014	1.1a	Marie McMinn, Cloud TWG Editor	New version of Local Affinity extension created for the CDMI 1.1.0 revision of the standard. Derived from the 1.0c draft.

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 geopolitical borders (data center, physical building location, etc.).

Changes to CDMI 1.1.0:

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 102 in 12.1.3 Capabilities for Data System Metadata as follows:**

Capability	Type	Definition
cdmi_data_affinity	JSON Array of JSON Strings	When the cloud storage system supports the cdmi_data_affinity data system metadata as defined in 16.4 Support for Data System Metadata, the cdmi_data_affinity capability shall be present and shall list the data locations available to objects using 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 119 in 16.4 Support for Data System Metadata as follows:**

Metadata Name	Type	Description	Requirement
cdmi_data_affinity	JSON Array of JSON Strings	If this data system metadata item is present and not an empty array, it indicates that the client is requesting that an object be stored in a specific location. Each string in the array shall contain a unique user-specified location identifier. When this data system metadata item is absent or is present and is an empty JSON array, the system shall determine the data location. The list of location identifiers available to the object is specified by the cdmi_data_affinity capability (as described in 12.1.3 Data System Metadata Capabilities).	Optional

3) Add a table entry to the end of Table 120 in 16.5 Support for Provided Data System Metadata as follows:

Metadata	Type	Description	Requirement
cdmi_data_affinity_provided	JSON Array of JSON Strings	Contains an identifier that corresponds to a location where the object is stored.	Optional