# Cortex ISE 4 changes

Changes to Application Program Interface – Cortex (REST) document.

## ISE Capabilities

Adding deduplication

<capability string="**Data Deduplication**" value="**49012**" type="**source**"/>

## Pool

Pool: ISE G4 will support anywhere from 1 to 6 pools.

|  |  |  |
| --- | --- | --- |
| HTTP Method | Option | Description |
| URI | /pool |  |
| Method | POST |  |
| Query String |  |  |
| Response |  |  |

Table : Create Pool

|  |  |  |
| --- | --- | --- |
| HTTP Method | Option | Description |
| URI | /pool/{id} |  |
| Method | DELETE |  |
| Query String |  |  |
| Response |  |  |

Table : Delete Pool

## Media (Datapac)

On ISE 4 the Media are virtual groups of 10 drives.

ISE4: URI = http://*<ip\_addr>*/storage/media

POST Add a medium to a pool. (If the pool specified is not an existing pool, it will be created.)

|  |  |  |
| --- | --- | --- |
| HTTP Method | Option | Description |
| URI | /media/{id} |  |
| Method | POST |  |
| Query String | Pool = {pool id} |  |
| Response |  |  |

Table 56: Add Medium

Modify media is no longer supported. (Table 57)

## Volumes

Adding Dedup option to create volume.

|  |  |  |
| --- | --- | --- |
| HTTP Method | Option | Description |
| URI | /volumes |  |
| Method | POST |  |
| Query String | dedup = { 0 | 1 } | 0 = off (default), 1 = on |
| Response |  |  |

Table 7: Create Volume

Adding support to modify affinity, alloctype, and dedup.

|  |  |  |
| --- | --- | --- |
| HTTP Method | Option | Description |
| URI | /volumes/{id} |  |
| Method | PUT |  |
| Query String | affinity = {cadp | hdd | flash}  alloctype = { 0 | 1 }  dedup = { 0 | 1 } | **cadp** (continuous adaptive data placement, default).  **hdd** (volume pinned to HDD).  **flash** (volume pinned to flash, if hybrid pool).  0 = fully allocated, 1 = thin  0 = off (default), 1 = on |
| Response |  |  |

Table 8: Modify storage volume

## Drives

Base URI = http://*<ip\_addr>*/storage/arrays/{*id*}/drives

GET Returns a list of drives

POST Add a drive

DELETE Remove a drive

|  |  |  |
| --- | --- | --- |
| HTTP Method | Option | Description |
| URI | /drives/{spot} |  |
| Method | POST |  |
| Query String |  |  |
| Response |  |  |

Table : Add Drive

|  |  |  |
| --- | --- | --- |
| HTTP Method | Option | Description |
| URI | /drives/{spot} |  |
| Method | DELETE |  |
| Query String |  |  |
| Response |  |  |

Table : Remove Drive

## Data reduction statistics

Base URI = http://*<ip\_addr>*/storage/arrays/{*id*}/datareduction

### System level deduplication ratio and distribution

<?xml version="1.0" encoding="ISO-8859-1"?>

[<datareduction self="…**/storage/arrays/{id}/datareduction**">](%3callocation%20self=%22http://10.20.144.14/storage/arrays/3BC102P3/performance%22%3e)

<date>03/14/2017</date>

<time>08:15:31</time>

<dedup>

<blocksize>8</blocksize> <!--Deduplication block size (kb) -->

<ratio>5.00<ratio> <!-- -->

<percentage>80</percentage>

<buckets>

<bucket>

<refcnt>5</refcnt> <!--Reference count -- >

<count>1<count> <!--Number of known duplicates with this reference count-- >

</bucket>

</buckets>

</dedup>

</datareduction>

#### Distribution buckets

Deduplication distribution data is provided by separating the known duplicates into buckets by reference count. The returned data contains buckets with reference counts ranging from 1 to 1023. The last bucket (1024) counts the known duplicates with a reference count larger than 1023.

The storage used per bucket can be calculated as follows:

Physical storage used = COUNT \* DEDUP\_BLOCK\_SIZE

Virtual storage used = COUNT \* DEDUP\_BLOCK\_SIZE \* REFCOUNT

### Volume level data reduction statistics

Deduplication ratio and distribution per volume are provided on demand.

URI = http://*<ip\_addr>*/storage/arrays/{*id*}/datareduction/volume/{volume\_id}

<?xml version="1.0" encoding="ISO-8859-1"?>

[<datareduction self="…**/storage/arrays/{array\_id}/datareduction/volume/{volume\_id}**">](%3callocation%20self=%22http://10.20.144.14/storage/arrays/3BC102P3/performance%22%3e)

<date>03/14/2017</date>

<time>08:15:31</time>

<dedup>

<blocksize>8</blocksize> <!--Deduplication block size (kb) -->

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</buckets>

</dedup>

</datareduction>