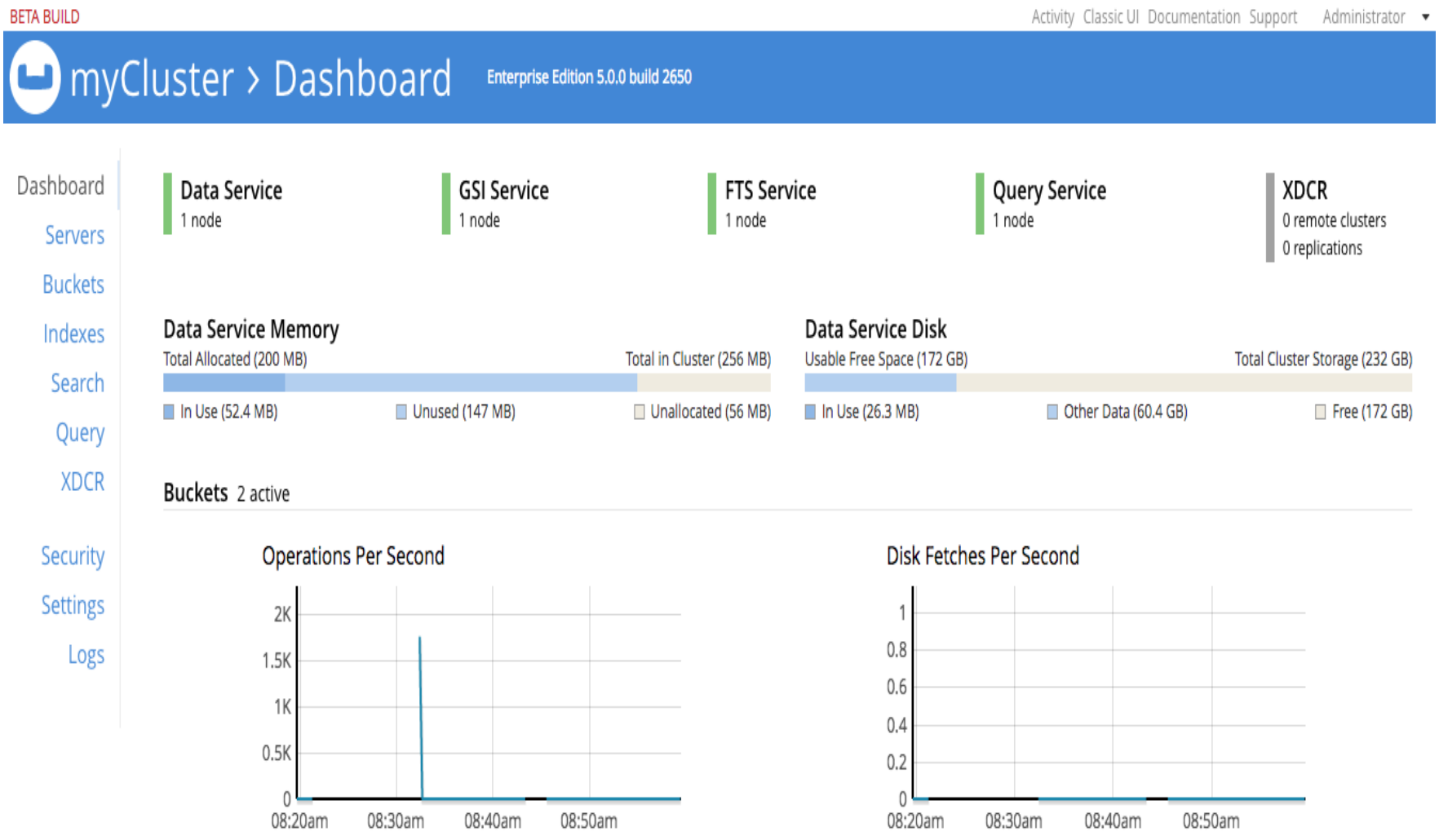
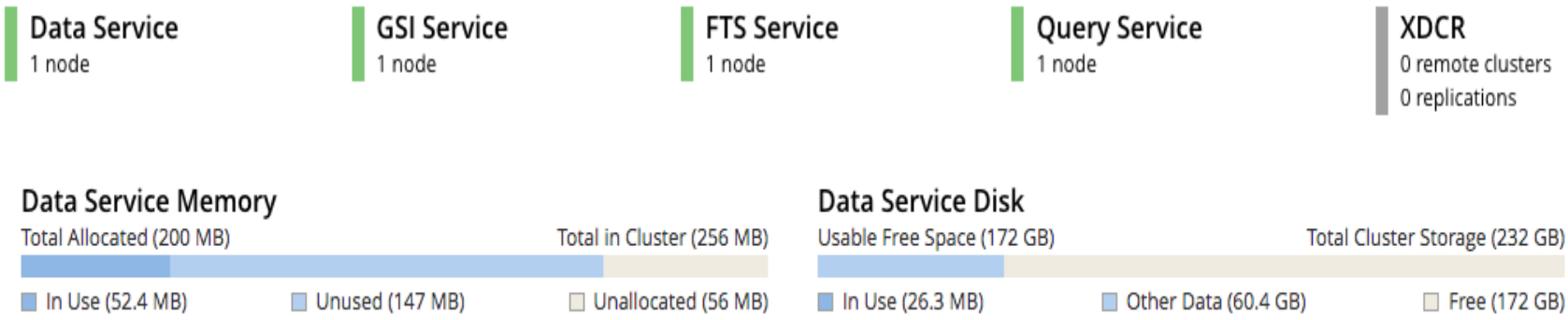
Web Console & Bucket

HP Cluster Overview - Console



HP Cluster



Field	Description
Data Service Memory section provides a graphical representation of your RAM situation.	
total quota	The amount of RAM allocated to data buckets within your cluster.
unallocated	The amount of RAM not allocated to data buckets within your cluster.
unused	The amount of memory that is unused (available) for storing data.
in use	The amount of memory across all buckets that is actually in use (that is data is actively being stored).

HP

Servers

name	group	services	CPU	RAM	swap	disk used	items	
10.17.1.124	group 1	data full text index query	85.8%	84.1%	78.4%	22.2MB	31.5 K / 0	Statistics
172.23.106.27	group 1	data full text index query	0.75%	9.32%	0%	---	0 / 0	Statistics

This server will be added to the cluster pending rebalance. Cancel Add

Buckets

Types

- Couchbase buckets
- Ephemeral buckets
- Memcached buckets

HP

Bucket Types

Couchbase*/Ephemeral	Memcached
✓highly-available ✓dynamically reconfigurable distributed data storage ✓Persistence* ✓ replication services	✓directly-addressed ✓distributed (scale-out) ✓ in-memory ✓ key-value cache

Capability	Memcached buckets	Couchbase buckets	Ephemeral buckets
Item size limit	1 MB	20 MB	20 MB
Persistence	No	Yes	No
Replication (DCP)	No	Yes	Yes
Cross Datacenter Replication (XDCR)	No	Yes	Yes

HP

Bucket Capabilities

Capability	Description
Caching	Couchbase buckets operate through RAM. Data is kept in RAM and persisted down to disk.
Persistence	Data objects can be persisted asynchronously to hard-disk resources from memory to provide protection from server restarts or minor failures.
Replication	configurable number of replica servers
Rebalancing	load distribution across resources and dynamic addition or removal of buckets

HP

Couchbase vs Ephemeral Buckets

Capability	Couchbase Buckets	Ephemeral Buckets
Persistence	Couchbase buckets are persisted asynchronously, from memory to disk.	Ephemeral buckets are not persisted to disk: they are retained in RAM only.
Replication (DCP and XDCR)	Couchbase buckets can be replicated across a configurable number of servers.	Ephemeral buckets can be replicated across but without being persisted to disk.
Rebalance	By means of rebalancing, the load constituted by Couchbase buckets is distributed evenly across nodes within the cluster.	Rebalancing redistributes Ephemeral buckets, exactly as it does Couchbase buckets; but without the data being persisted to disk.
Auto-failover	By default, Auto-failover starts when a node has been inaccessible for 120 seconds.	Auto-failover starts as soon as a node is inaccessible

HP

vBuckets

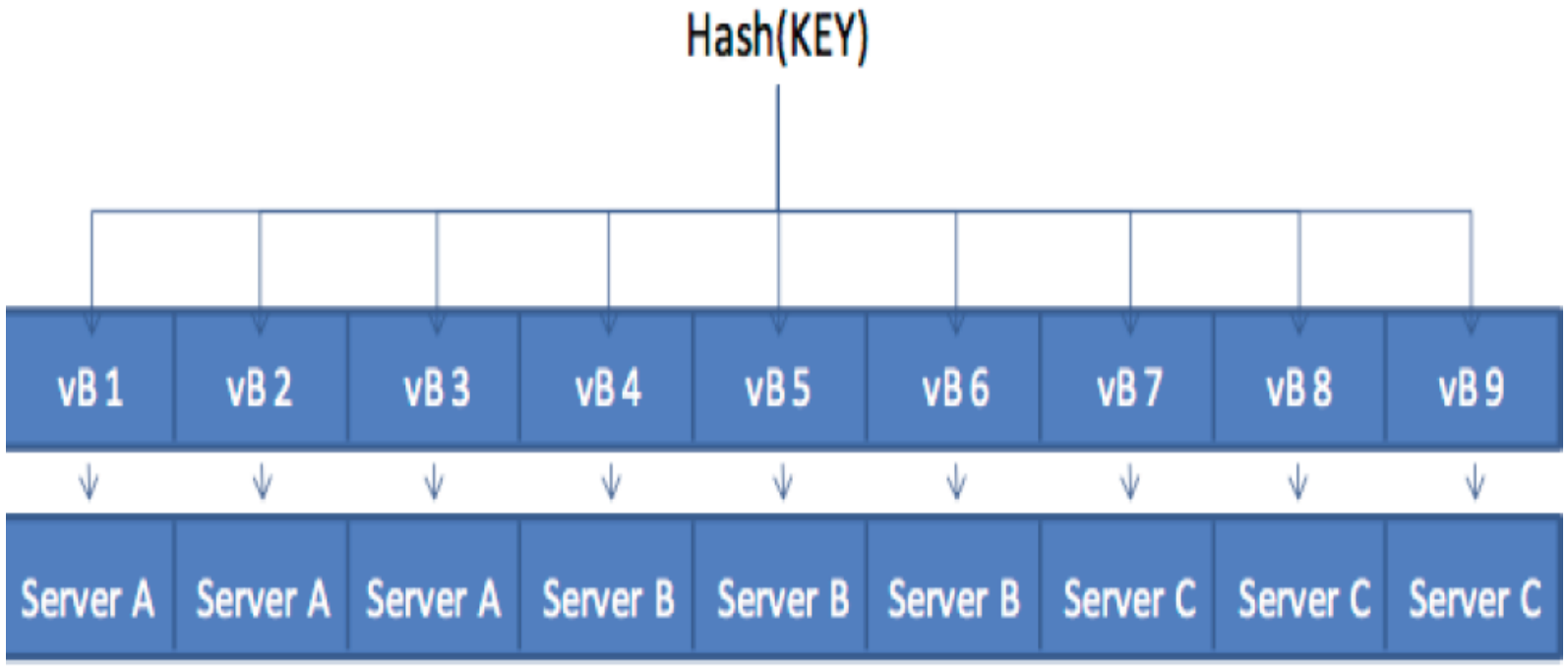
- the owner of a subset of the key space of a Couchbase cluster

- used to allow information to be distributed effectively across the cluster

- used both for distributing data, and for supporting replicas (copies of bucket data) on more than one node.

HP

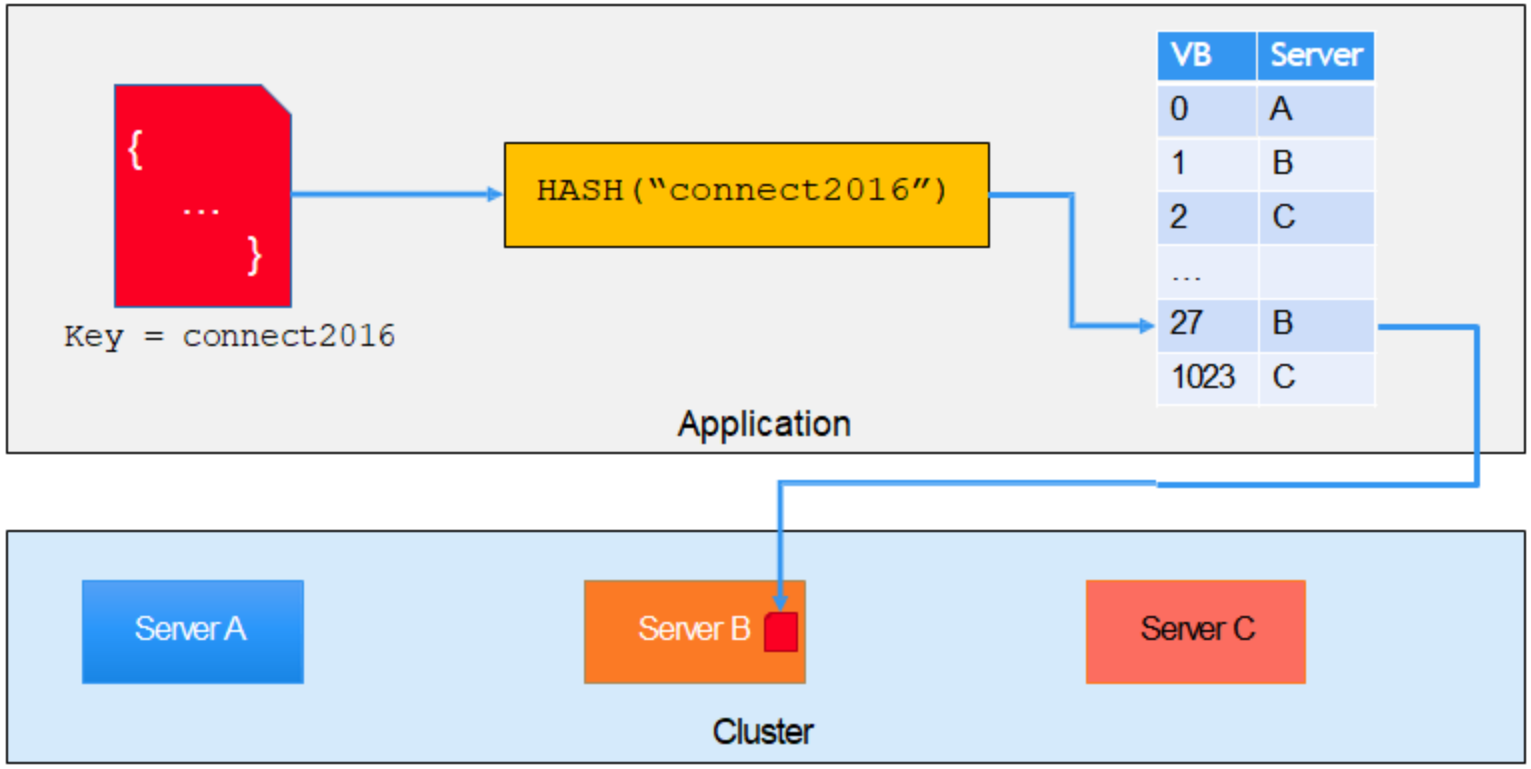
vBucket Mapping



The client first hashes the key to calculate the vBucket which owns KEY.

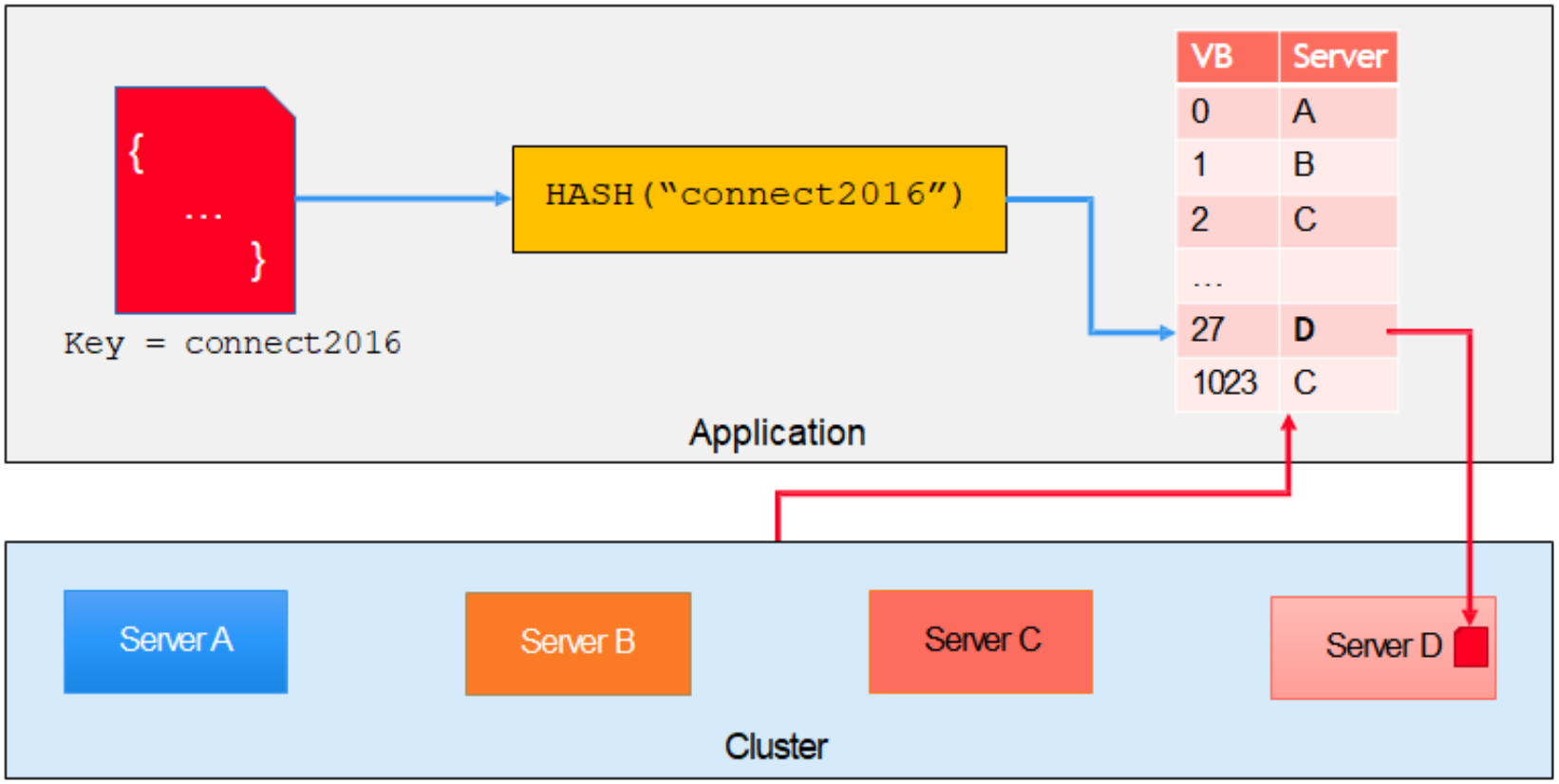
HP

Automatic Sharding



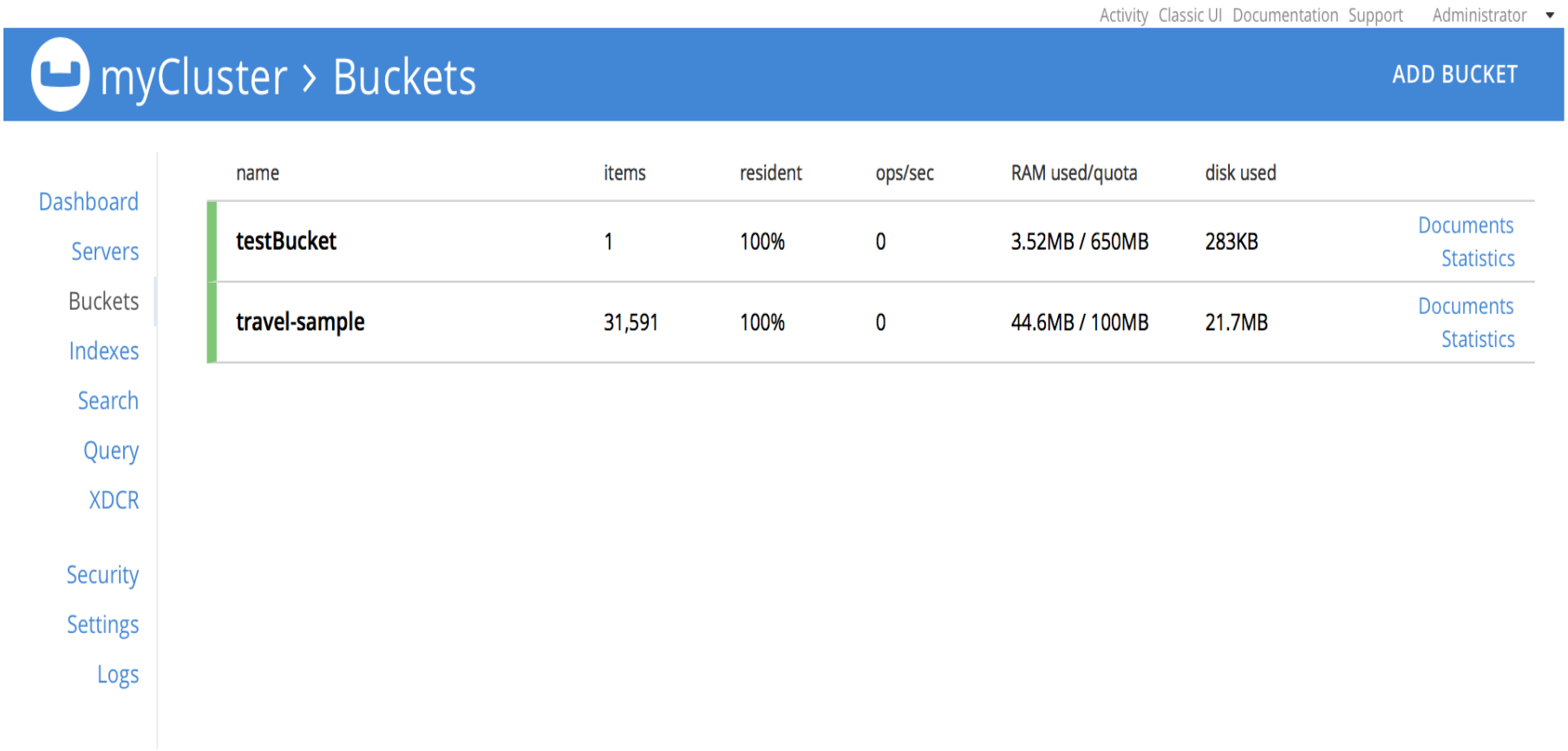
HP

Automatic Sharding



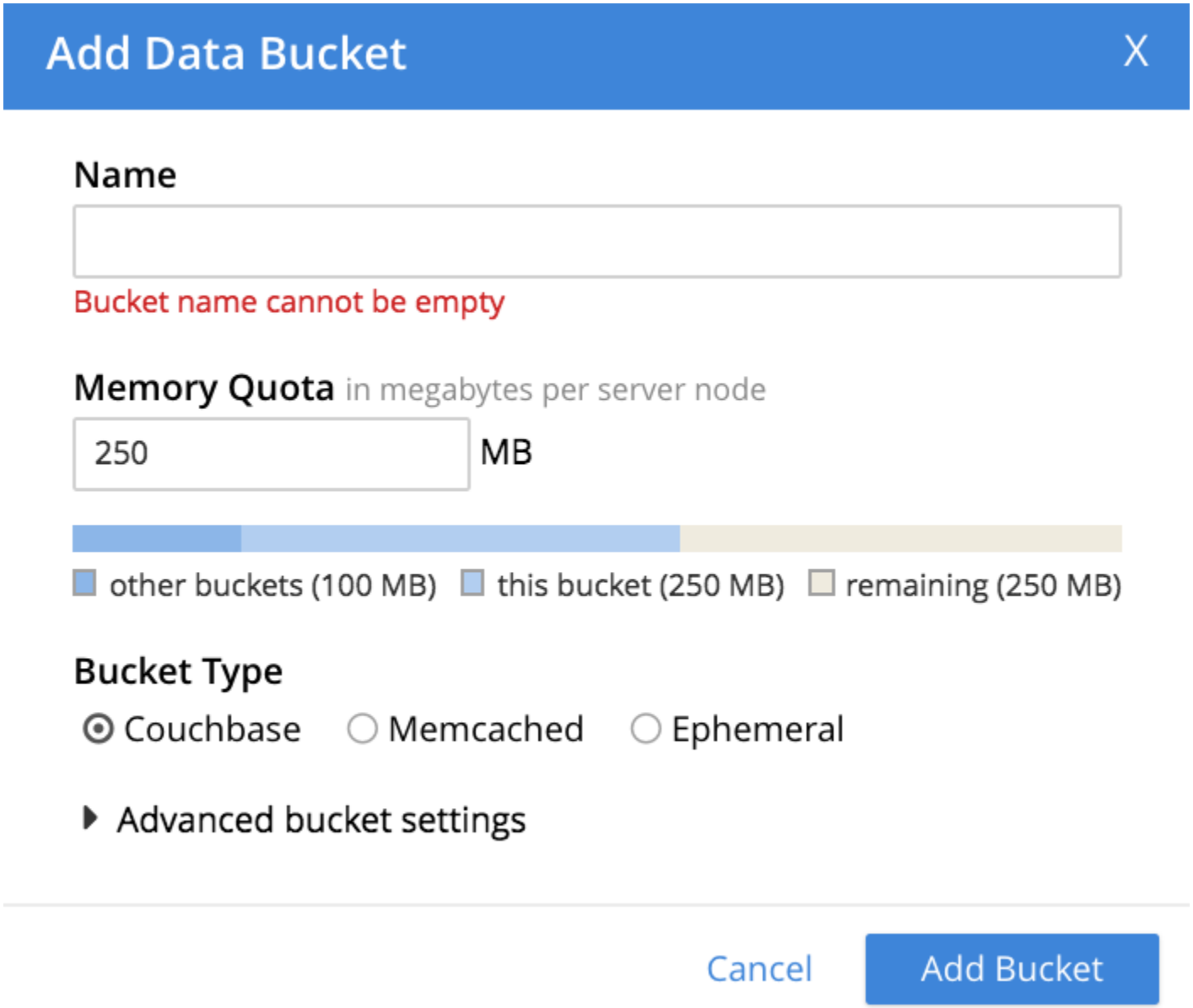
HP

Data Buckets



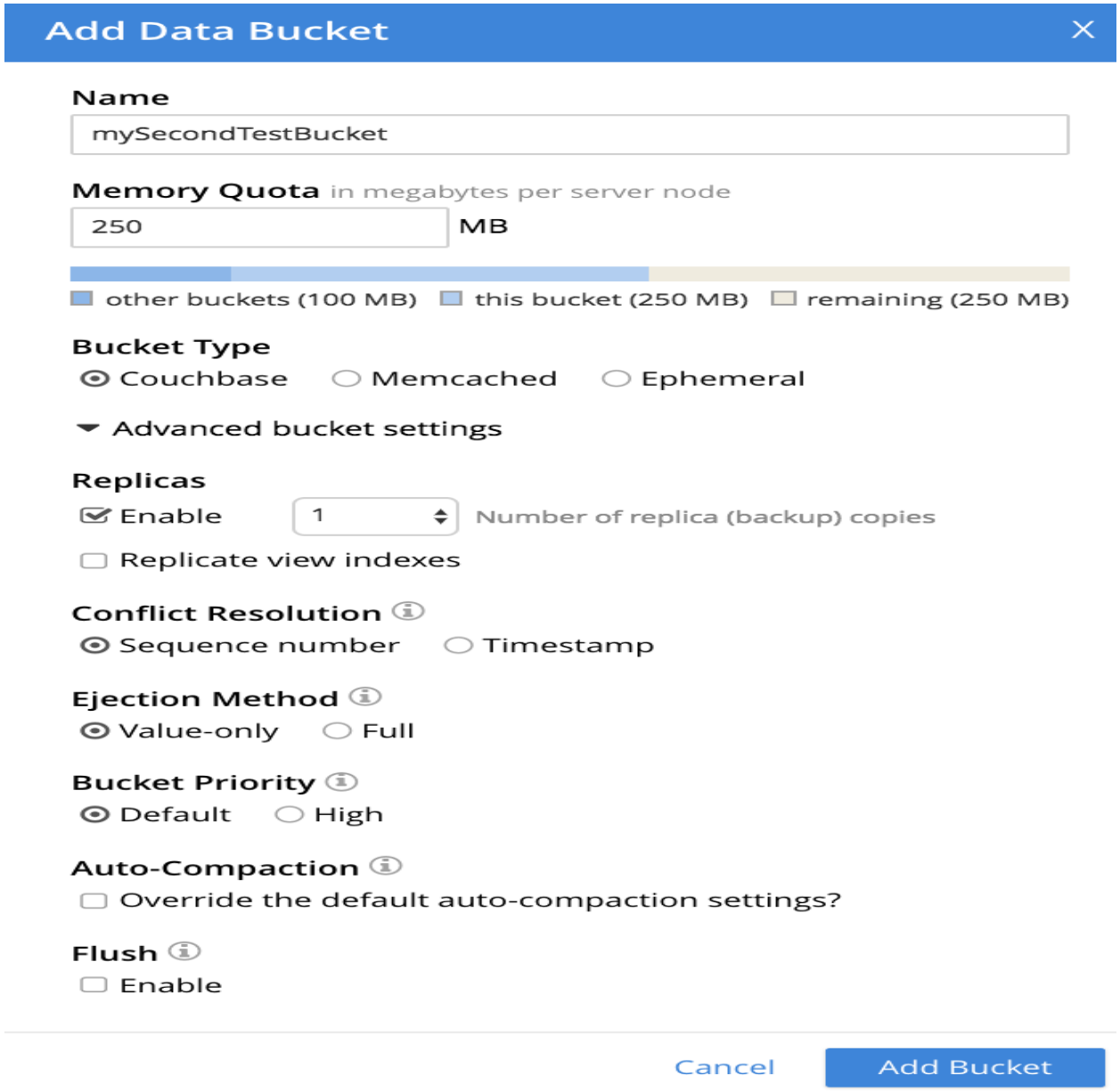
HP

Creating a new Bucket

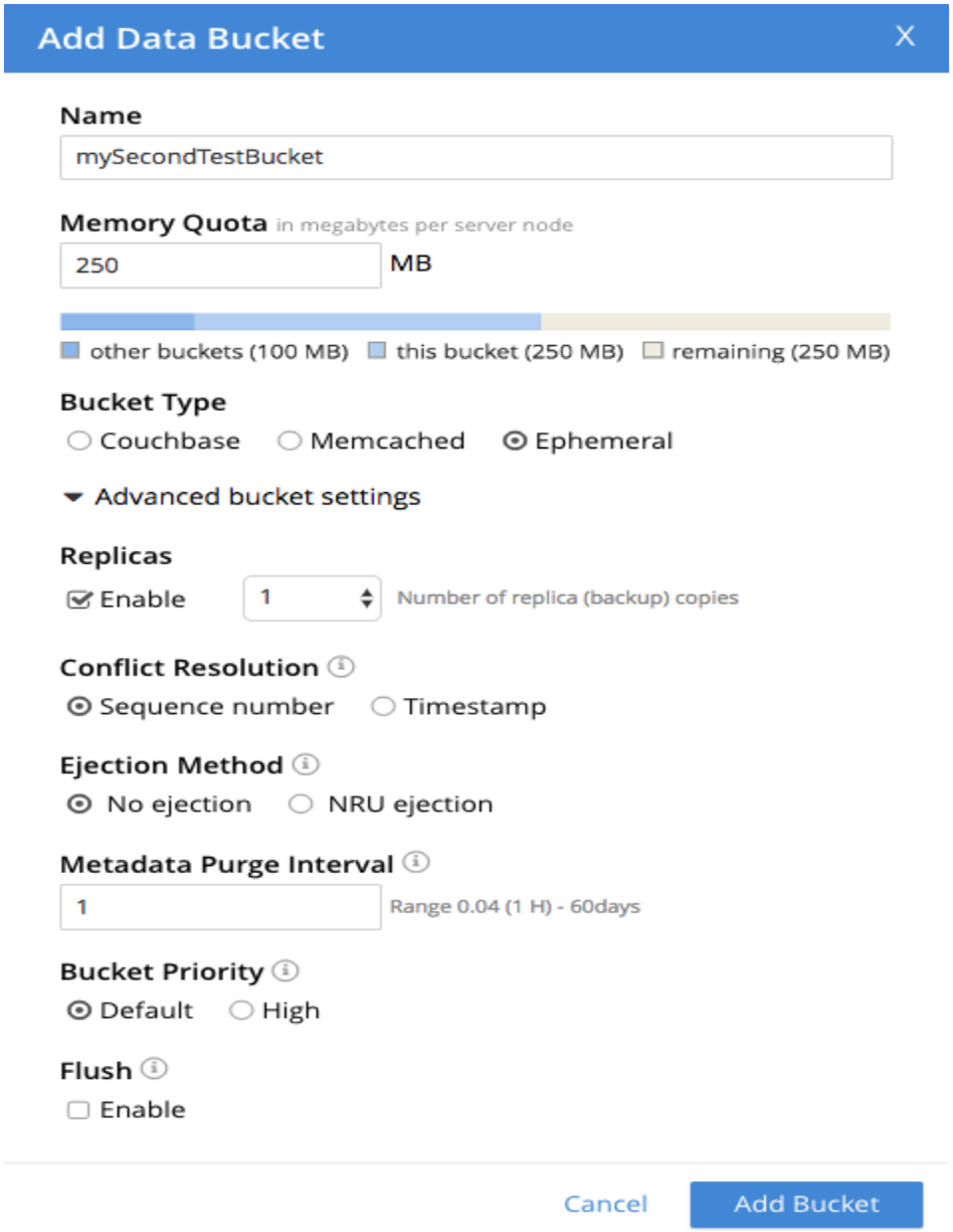


HP

Creating a new Bucket...

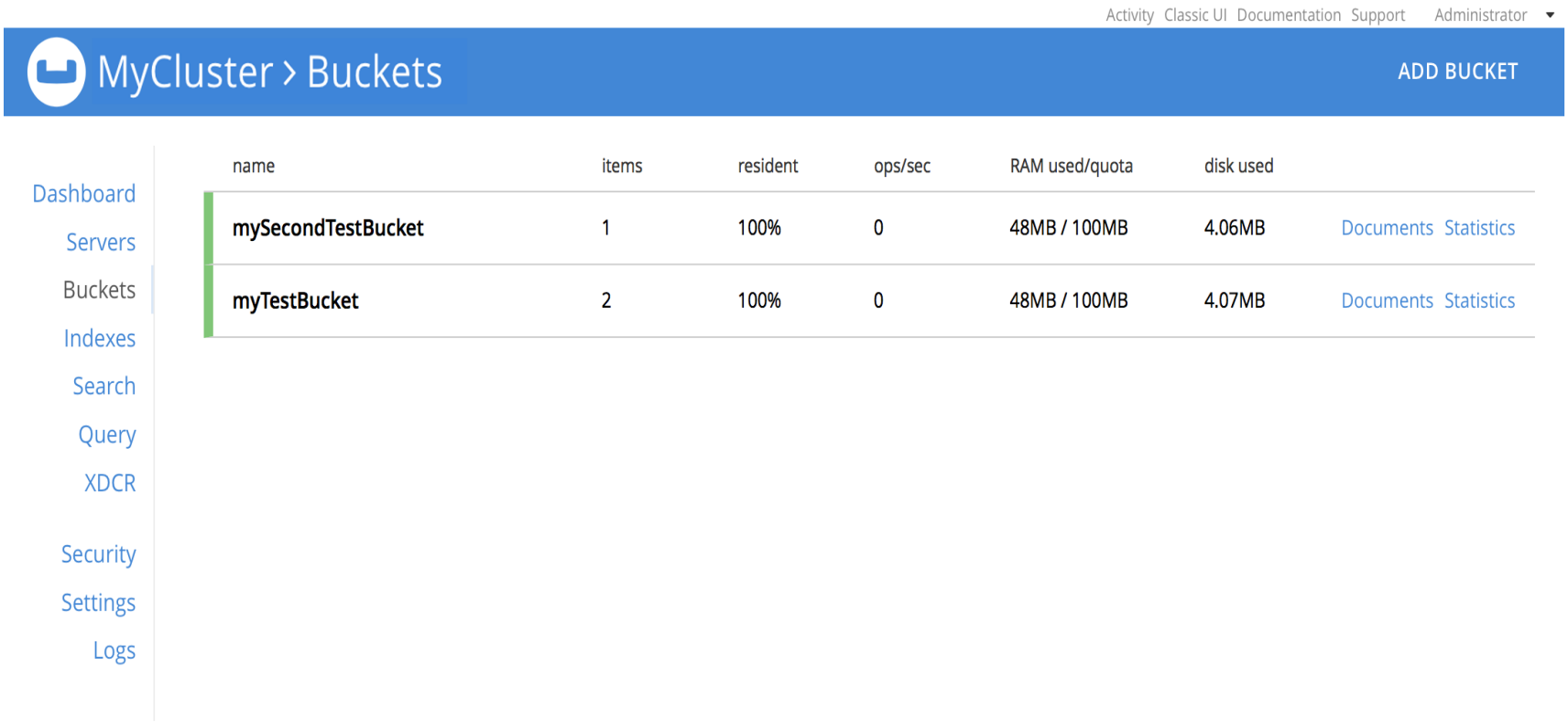


Ephemeral Bucket-Settings



HP

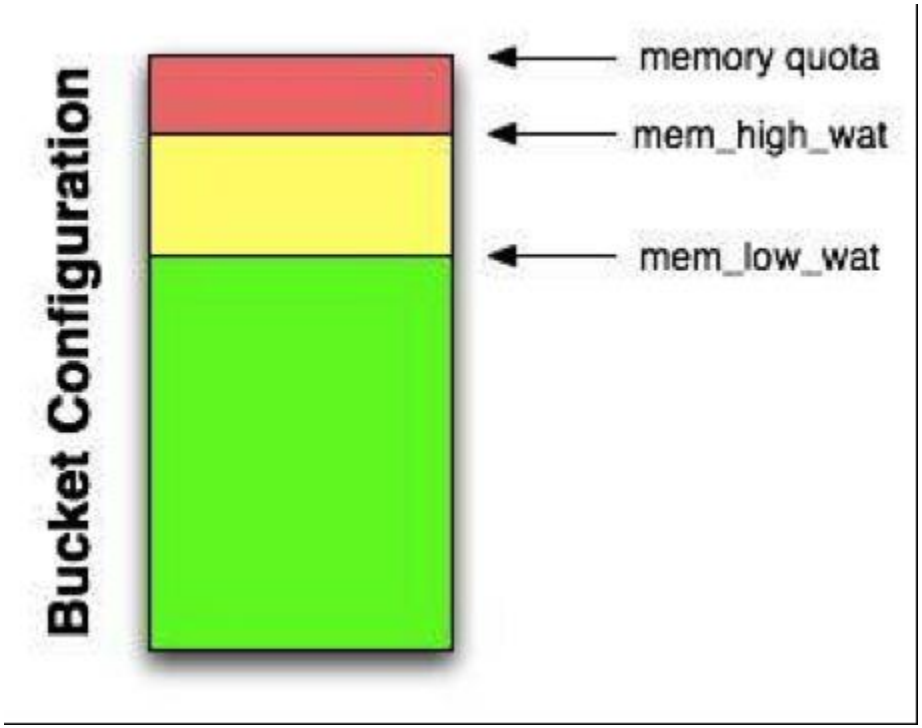
Bucket Information



HP

Ejection

- process of removing data from RAM to make room for active and more frequently used information.
- automatic and operates in conjunction with the disk persistence system



Default setting for RAM water marks

Version	High water mark	Low water mark
2.0	75%	60%
2.0.1 and higher	85%	75%

HP

Expiration

- Used for data with a naturally limited life.
- to be automatically deleted from the entire database.
- expiration time :
  - as a relative time (for example, in 60 seconds),
  - or absolute time (31st December 2012, 12:00 p.m.)

HP

Eviction

- removing information entirely from memory for Memcached buckets.
- uses a least recently used (LRU) algorithm.

HP

Sample Buckets