Amazon ElastiCache – Memcached Engine

## Service Overview

Amazon ElastiCache makes it easy to set up, manage, and scale distributed in-memory cache environments in the AWS Cloud. It provides a high performance, resizable, and cost-effective in-memory cache, while removing complexity associated with deploying and managing a distributed cache environment. ElastiCache works with both the Redis and Memcached engines.

A [node](https://docs.aws.amazon.com/AmazonElastiCache/latest/mem-ug/WhatIs.Components.html#WhatIs.Components.Nodes)is the smallest building block of an ElastiCache deployment. A node can exist in isolation form or in some relationship to other nodes. A node is a fixed-size chunk of secure, network-attached RAM. Each node runs an instance of the engine and version that was chosen when you created your cluster.

A [Memcached cluster](https://docs.aws.amazon.com/AmazonElastiCache/latest/mem-ug/WhatIs.Components.html#WhatIs.Components.Clusters)is a logical grouping of one or more ElastiCache nodes. Data is partitioned across the nodes in a Memcached cluster.

It’s also important to notice that [ElastiCache is fully integrated with Amazon VPC](https://docs.aws.amazon.com/AmazonElastiCache/latest/mem-ug/VPCs.EC.html), using the same principles, which are used for EC2 VMs.

## Use cases / Considerations

Here are several [common ElastiCache use cases](https://docs.aws.amazon.com/AmazonElastiCache/latest/mem-ug/elasticache-use-cases.html), which should help you decide if you need this service or not.

One of the most important choices in working with ElastiCache is whether to use Redis or Memcached engine. You can use [this cheetsheet](https://d0.awsstatic.com/whitepapers/performance-at-scale-with-amazon-elasticache.pdf#page=8&zoom=100,92,493) to decide what suits your needs better.

You also might want to take a look at [reserved nodes](https://docs.aws.amazon.com/AmazonElastiCache/latest/mem-ug/CacheNodes.Reserved.html) as a way to reduce costs, if you can predict what kind of load will you have.

## Governance

As most of AWS services, ElastiCache is fully integrated with [AWS CloudWatch](https://docs.aws.amazon.com/AmazonElastiCache/latest/mem-ug/CacheMetrics.html) for metrics, [AWS CloudTrail](https://docs.aws.amazon.com/AmazonElastiCache/latest/mem-ug/logging-using-cloudtrail.html) for logging and it also supports [AWS SNS](https://docs.aws.amazon.com/AmazonElastiCache/latest/mem-ug/ECEvents.html), sending all important events to a specific topic.

For security, ElastiCache provides [several types of encryption](https://docs.aws.amazon.com/AmazonElastiCache/latest/mem-ug/encryption.html) and [Role Based Access Control](https://docs.aws.amazon.com/AmazonElastiCache/latest/mem-ug/Clusters.RBAC.html).

## Cautions

Memcached doesn’t have replication like Redis does, so you must make sure it`s handled from application side.

## Pricing considerations

All info regarding ElastiCache pricing can be found in [AWS docs](https://aws.amazon.com/elasticache/pricing/)

## More details

<https://d0.awsstatic.com/whitepapers/performance-at-scale-with-amazon-elasticache.pdf>