



BATCH : BATCH 85
LESSON : AWS DAY 14
DATE : 20.08.2022
SUBJECT : Redshift-Elasticache



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Redshift-Elasticache



amazon
REDSHIFT






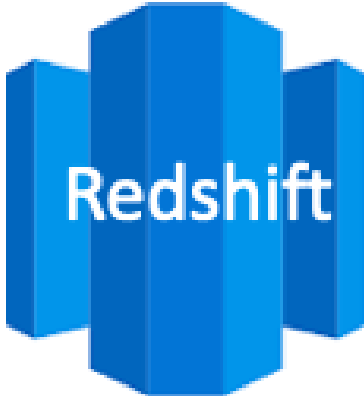
Redshift



- ✓ Amazon Redshift is a fully managed, cloud-based, petabyte-scale **data warehouse** service by Amazon Web Services (AWS).
- ✓ Amazon Redshift is an efficient solution to **collect and store** all your data to **analyze**. It gives you fast querying capabilities over structured data using familiar SQL-based clients and business intelligence (BI) tools.
- ✓ Amazon Redshift also includes Amazon Redshift Spectrum, allowing you to directly run SQL queries in Amazon S3 data lakes.



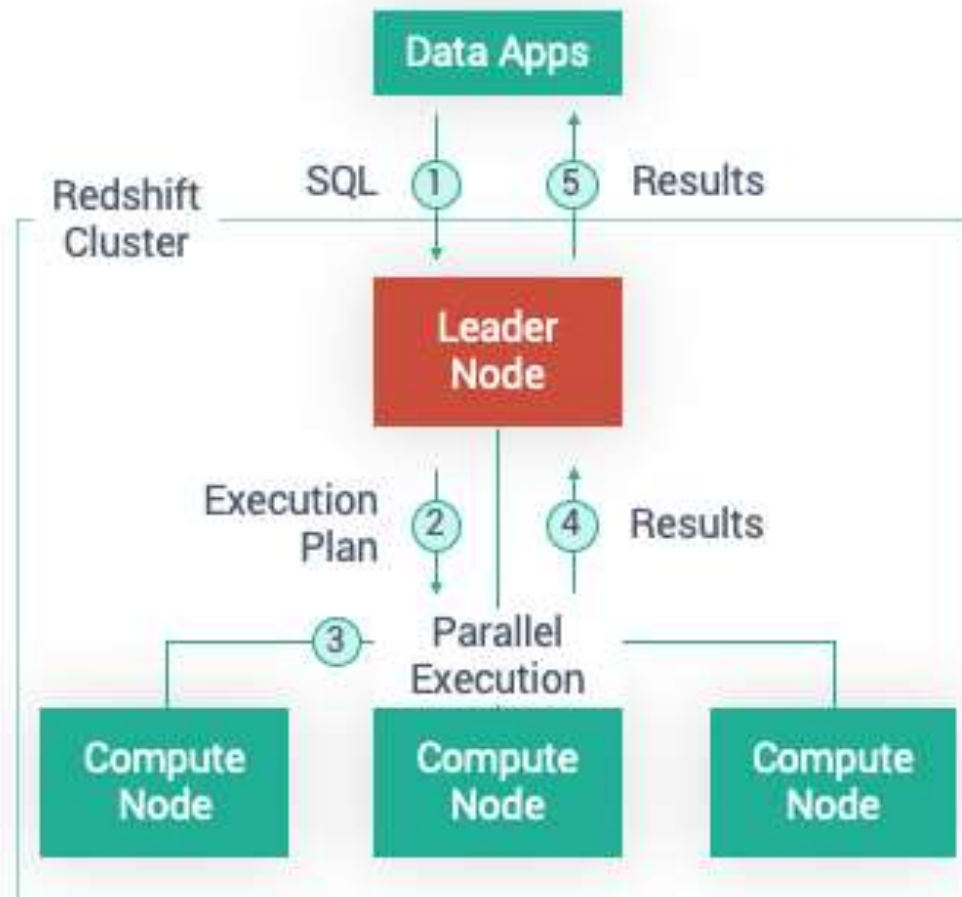
Redshift

Database	Data Warehouse
 RDS	 Redshift
OLTP (Online Transaction Processing)	OLAP (Online Analytical Processing)
Used for data storing and managing	Used for data analyzing



Redshift

Amazon Redshift Architecture: The Life of a Query



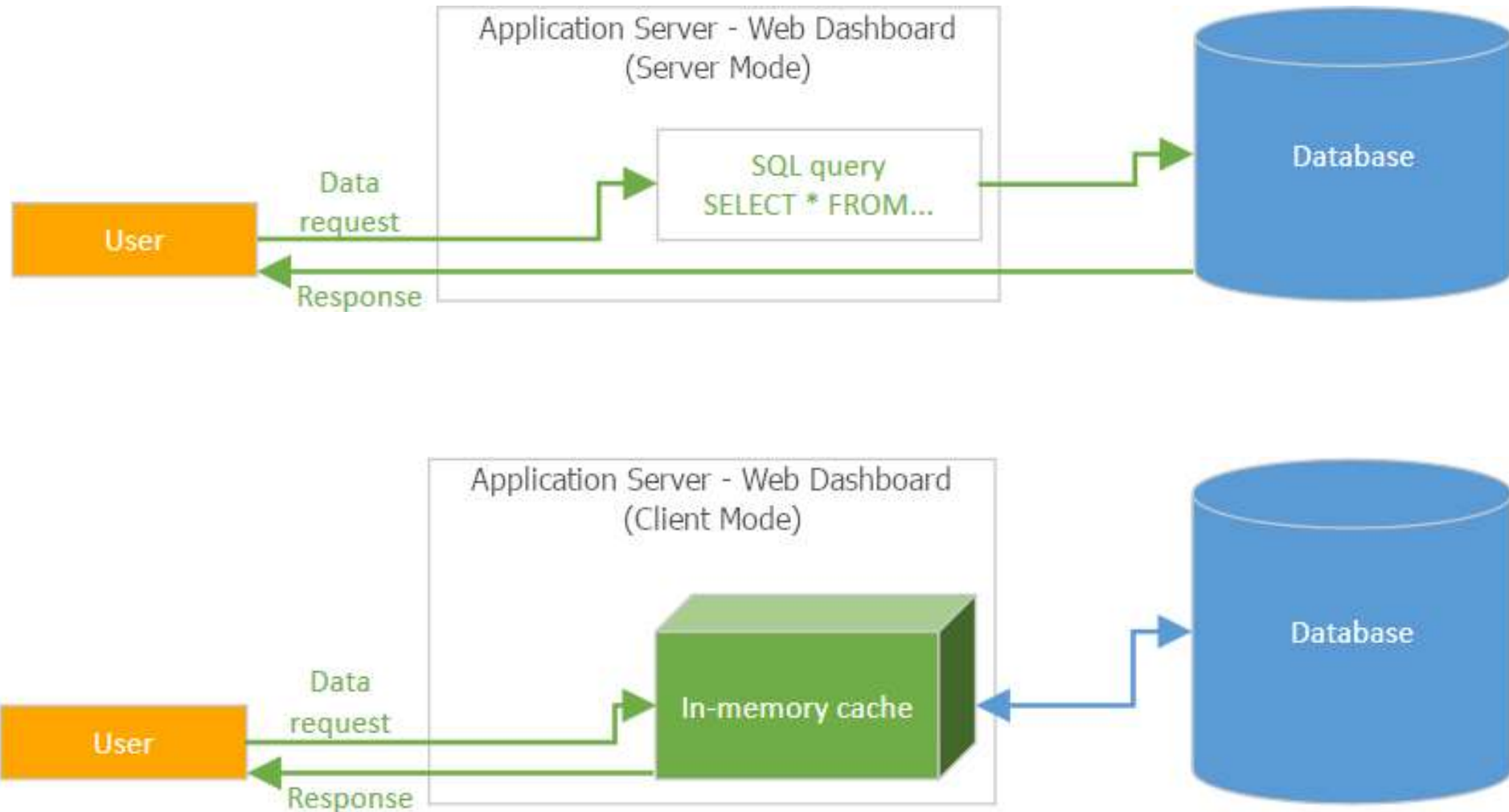
The 5 Steps to Process a Query

- 1 The cluster receives a query coming from a data app and parses the SQL in the leader node.
- 2 The leader node creates an execution plan that breaks a query down into a discrete sequence of steps.
- 3 The leader node distributes the work of executing the steps in parallel across the compute nodes.
- 4 The compute nodes send the results back to the leader node to merge data into a single result.
- 5 The leader node addresses any final sorting or aggregation and returns the results to the data app.





Elasticache





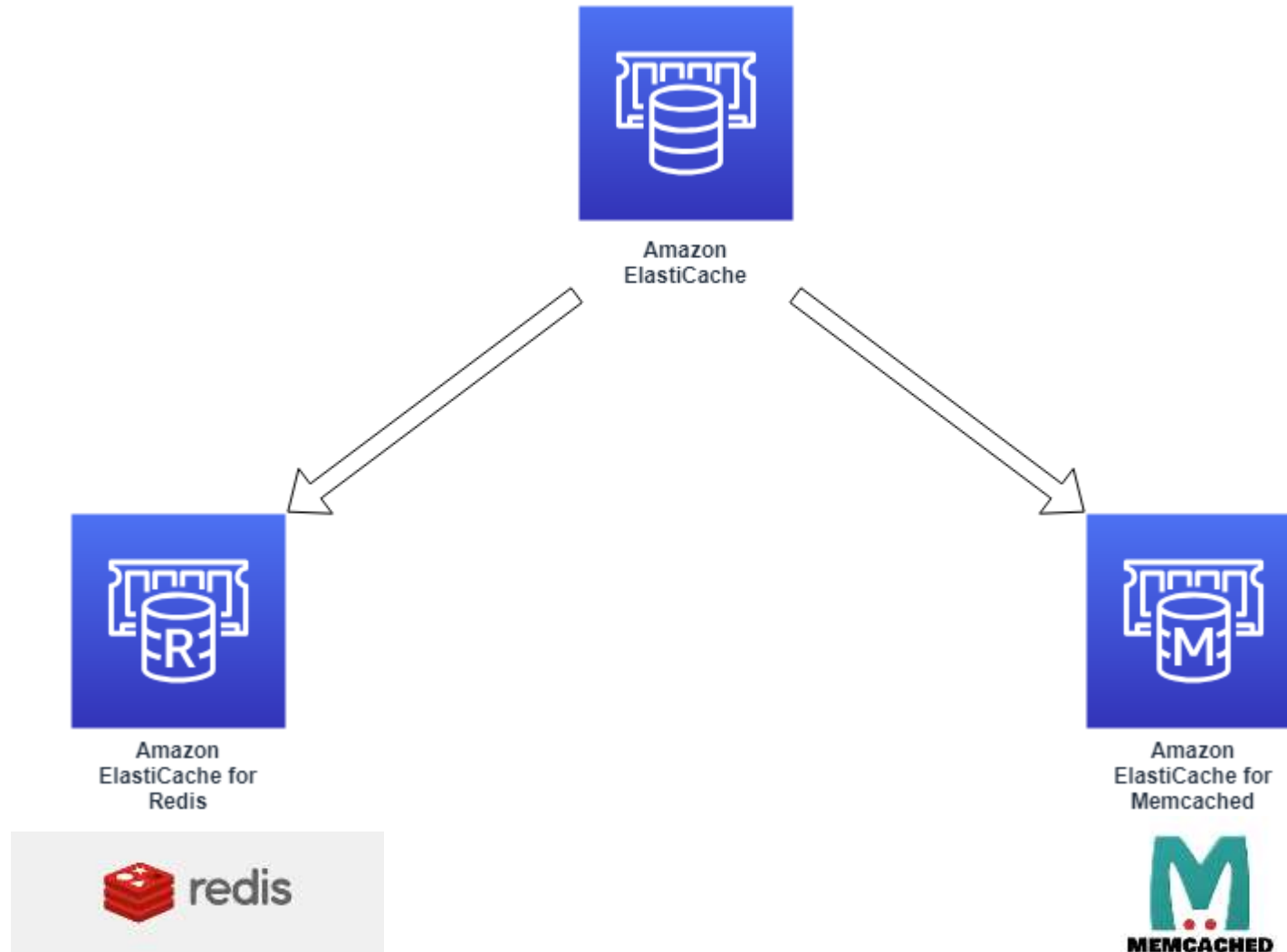
Elasticache



- ✓ Amazon ElastiCache makes it easy to set up, manage, and scale a distributed in-memory data store or cache environment in the cloud. It provides a high-performance, scalable, and cost-effective caching solution.



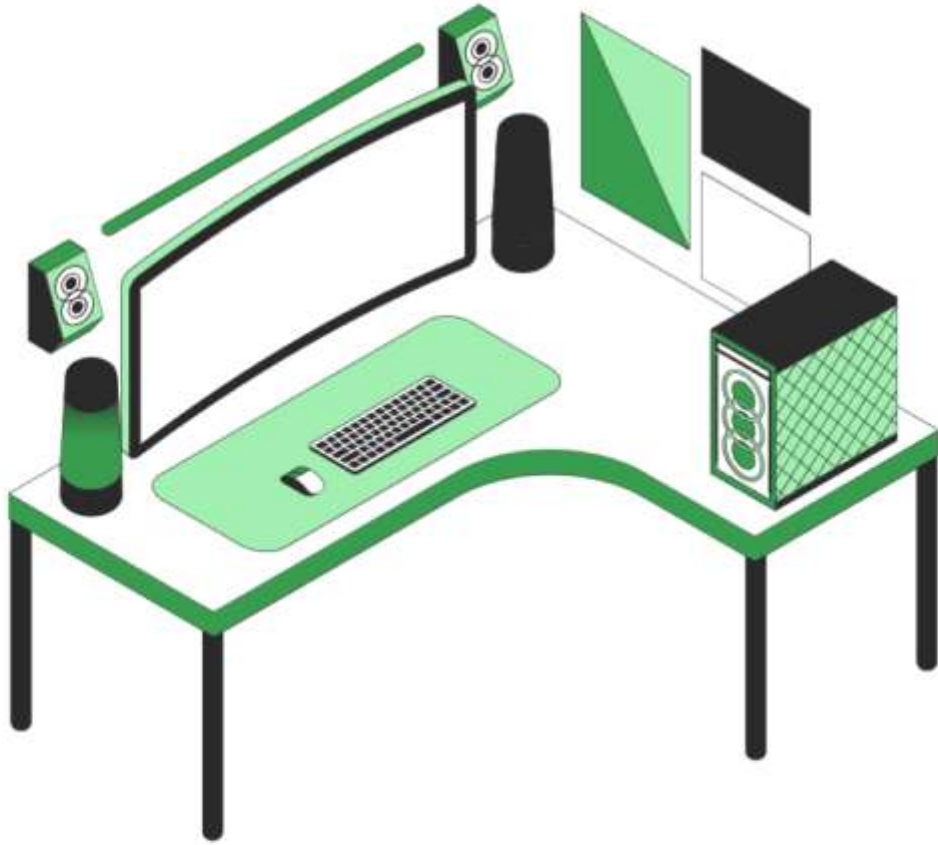
Elasticache





Redis vs Memcached

Feature	Redis	Memcached
Supported Data Types	strings, lists, sets, sorted sets, hashes, bit arrays, geospatial, and hyper logs	strings
Memory Management	Can store the details to disk when the physical memory is fully occupied.	in memory only. Supports saving into drive using an extension extstore
Data Size Limits	512 MB (for string values)	1 MB
Sub-milliseconds latency	Supports it	Supports it
Data Persistence	Supports using RDB snapshot and AOF Log persistence policies	Doesn't support it
Cluster Mode (Distributed caching)	Supports it	doesn't support it. Can be achieved on the client-side using a consistent hashing
Multi-Threading	Supports very well	Doesn't support multi-threading
Scaling	Supports horizontal scaling	Supports vertical scaling only (Horizontal scaling from the client side)
Data replication	Supports data replication out of the box.	Doesn't support
Supported Eviction Policies	Supports various types of policies https://docs.redislabs.com/latest/rc/concepts/data-eviction-policies/	Least recently Used (LRU)
Transaction Management	Supports it	Doesn't support



Do you have any questions?

Send it to us! We hope you learned something new.

