



Summit **2022**
Mission Now

Cash the Cache

AEROSPIKE



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Agenda

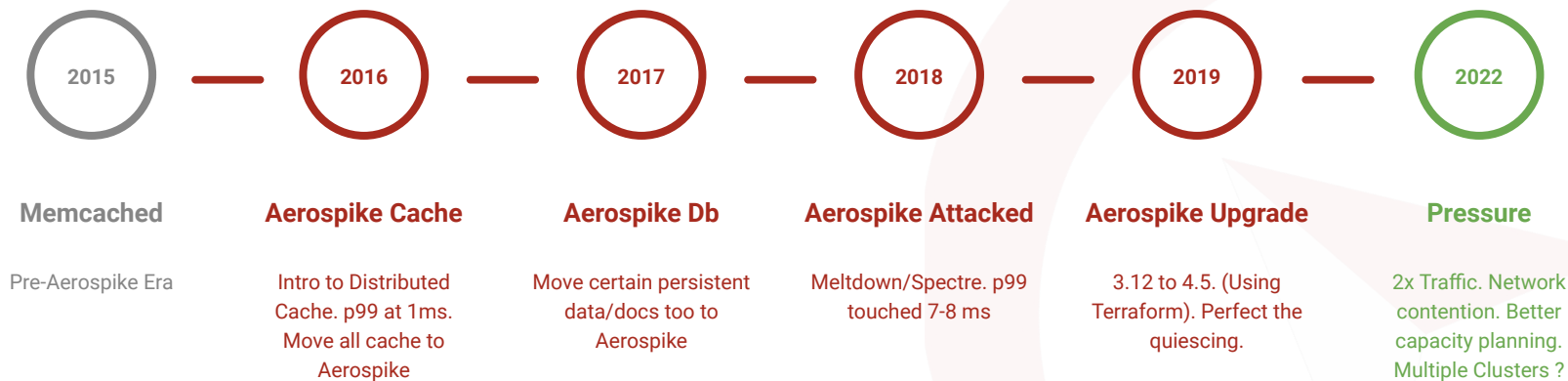
- About BigBasket
- Start of our Aerospike Journey
- Our Aerospike numbers (as of May 2022)
- Setups
- Usecases @ BB
- Learning from Outages
- Asks from BB to ❤️ Aerospike even more!

About BigBasket

- #1 in Online Groceries in India
- 10+ Million Users
- 5 Lakh Orders per day
- Serving 70 cities
- 9 Lakh Kafka Events per minute
- 400K requests per minute
- Monolith and (80+) Microservices

















Start of our Aerospike journey



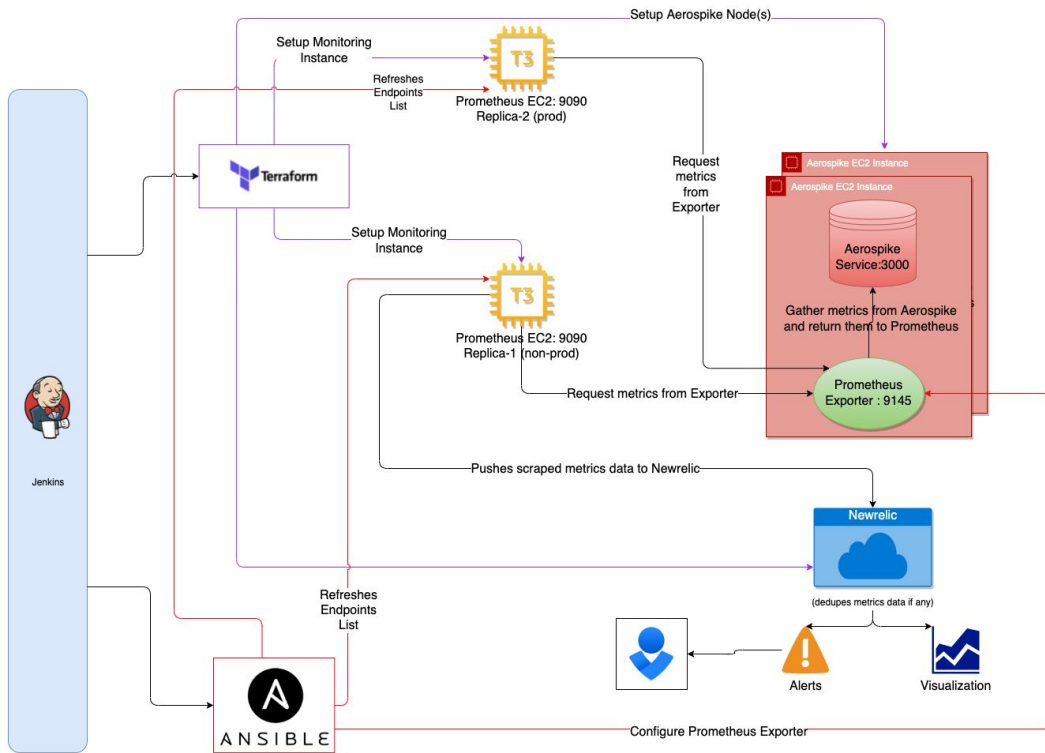
Our Aerospike numbers (as of May 2022)

- 140K reads per sec
- 20K writes per sec
- Billions of objects
- R/W latency p99: ≤ 1 ms
- 1 cluster, with 11 nodes
 - i3.en 6xl (24 core, 192 Gb, 25 Gbps)
- Data size footprint
 - 1 TB Disk
 - 500 Gb RAM
- Backups, but no XDR yet!

Build Version	Cluster Size	Disk	RAM	Cluster Name	Master and Replica Objects
4.5.3.2	11	 97.52 GB 902.53 GB	 53.82 GB 124.18 GB		421,705,524
4.5.3.2	11	 96.04 GB 904.02 GB	 52.91 GB 125.09 GB		415,285,868
4.5.3.2	11	 88.95 GB 911.10 GB	 49.15 GB 128.85 GB		384,755,443
4.5.3.2	11	 96.38 GB 903.67 GB	 53.15 GB 124.85 GB		416,876,761
4.5.3.2	11	 92.70 GB 907.35 GB	 51.08 GB 126.92 GB		400,837,223
4.5.3.2	11	 97.56 GB 902.50 GB	 53.73 GB 124.27 GB		421,740,687
4.5.3.2	11	 88.95 GB 911.10 GB	 49.16 GB 128.84 GB		384,792,961

Setups

- Terraform
 - 2 or 3 lines diff to increase or decrease nodes count
 - Newrelic Dashboards
 - Newrelic Alerts
 - Placement Groups
- Monitoring through Aerospike Prometheus Exporter
- (Breaking into smaller clusters)



Usecases of Aerospike @ BB

- Primary Cache (Key, Value Store). Multiple bins. (String, Numeric, GeoJSON)
- ModelCache (Wrapper on ORM)
- Protect certain source of truth sets from eviction.
- Multi-Reads wherever possible.
- Geo-JSON data (100 million addresses by this year end, to be used for Geo-searching)

Learnings from Outages

- Outage triggered by CDN Cache off behaviour
 - 2x reads + writes over a very large period.
- Network Packet Drops
 - Old Amazon AMI. Network driver crash.
 - i3.2xl : 8 vCPU, 61 Gib, 2.5 Baseline, 10 Gbps Burst bandwidth 🙄
 - i3en.6xl : 24 vCPU, 192 Gib, 25 Gbps constant 🙌

Asks from BB to ❤️ Aerospike even more!

Aerospike is more like a "fit it and forget it" kind of a solution. So pretty happy already with it. But...

- Speed up warm starts (glad to see it coming in 6.1)
- Ondemand Namespace creation (just like set creation) without a rolling restart
- Good visibility on Hot keys
- ARM64 support (M1 macs) (glad to see it coming in 6.2 / 6.3)