

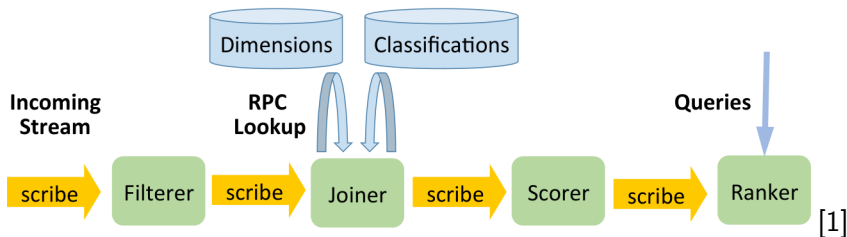
Turbine: Facebook's Service Management Platform for Stream Processing

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Turbine

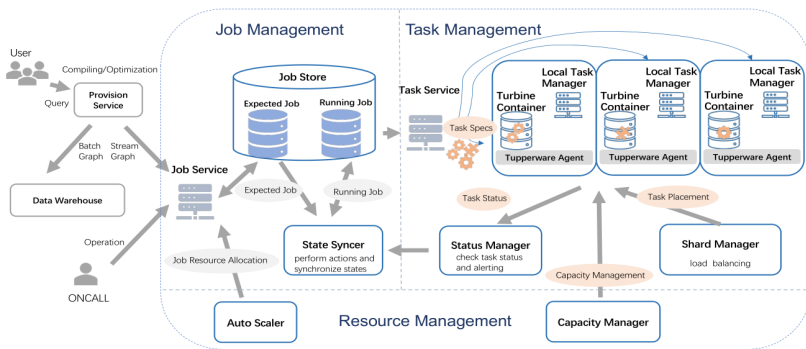
- Streaming applications manager.
- Service management platform on top of cluster management systems ¹.
- Currently integrates with Tupperware[3].



¹Aurora, Mesos, Borg, Tupperware, Kubernetes, etc.

System Overview

- Job Management layer: What to run?
- Task Management layer: Where to run?
- Resource Management layer: How to run?



[2]

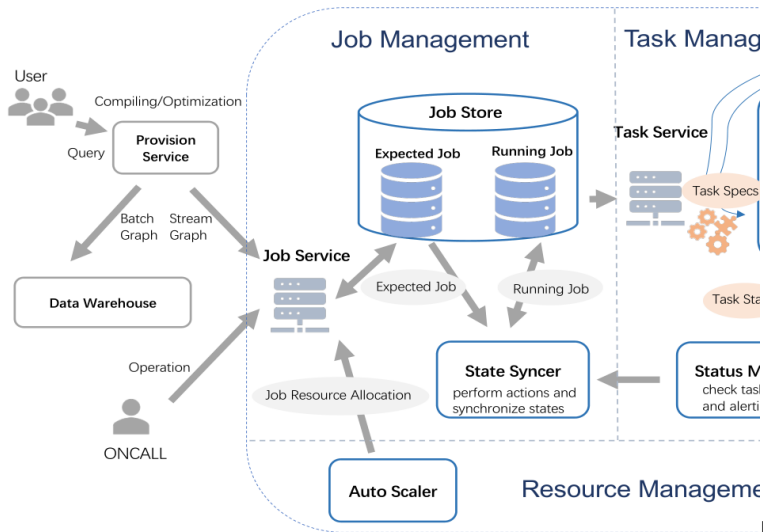
- Job Service
- State Syncer
- Job Store

Cuadro 1: **Job Store Schema.** [2]

Expected Job Table

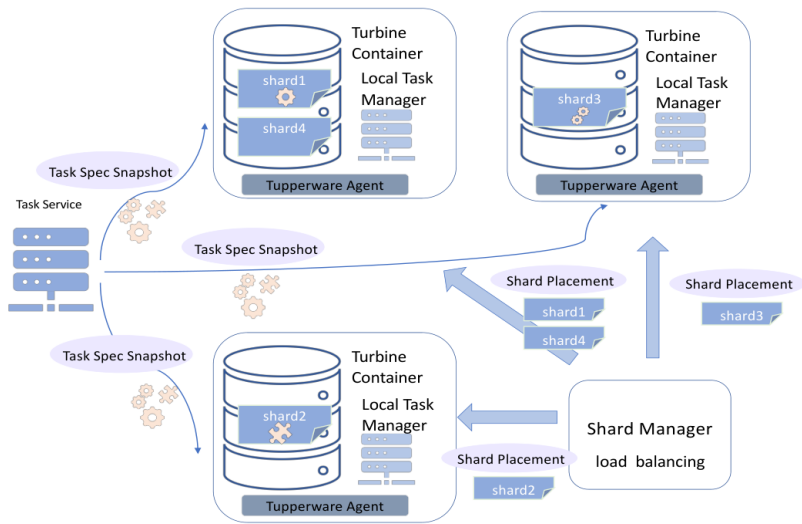
Base Configuration
Provisioner Configuration
Scaler Configuration
Oncall Configuration

Job Management



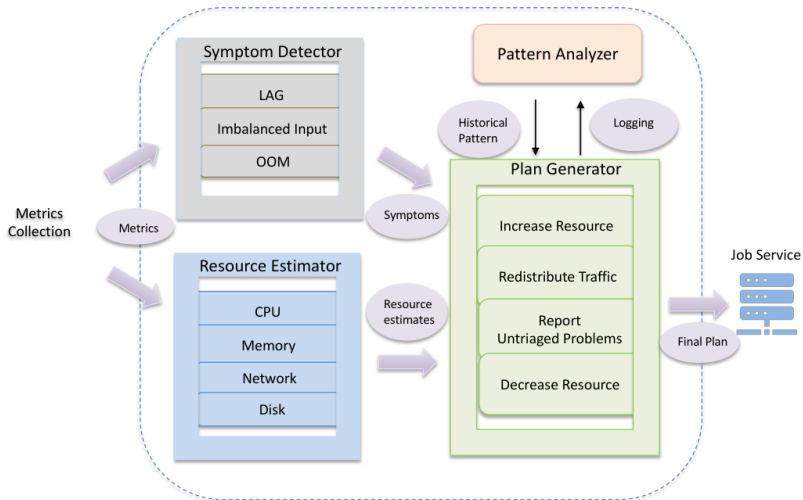
[2]

Task Management



[2]

Resource Management



[2]

Capacity Management:

- Monitor resource usage of jobs in a cluster
- Manage resource allocations
- Disaster recovery

Load Balancer

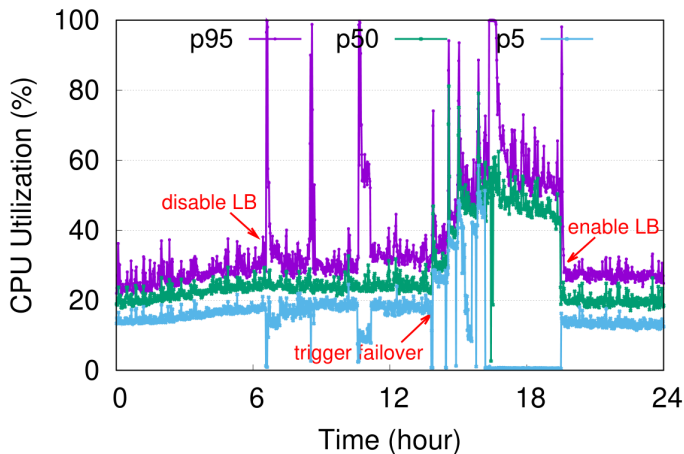


Figure 1: Testing the load balancer. [2]

Auto Scaler

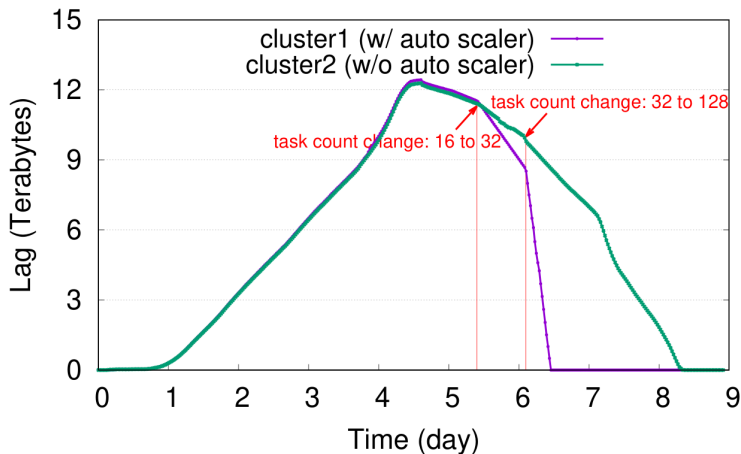


Figure 2: Processing backlogged data. [2]

- [1] Guoqiang Jerry Chen y col. “Realtime data processing at facebook”. En: *Proceedings of the 2016 International Conference on Management of Data*. 2016, págs. 1087-1098.
- [2] Yuan Mei y col. “Turbine: Facebook’s service management platform for stream processing”. En: *2020 IEEE 36th International Conference on Data Engineering (ICDE)*. IEEE. 2020, págs. 1591-1602.
- [3] Aravind Narayanan. *Tupperware: containerized deployment at Facebook*. 2014.