Architecture principles

- Database is the source of truth (not the devices)
  - All GET operations served from DB (not from devices)

- LoadBalancer Operations are asynchronous
  - Operations on LB device are done in the background by the adapter.
  - Adapter updates DB afterwards depending on outcome.
  - LoadBalancers will have status set to “BUILD” till they are successfully created on device.

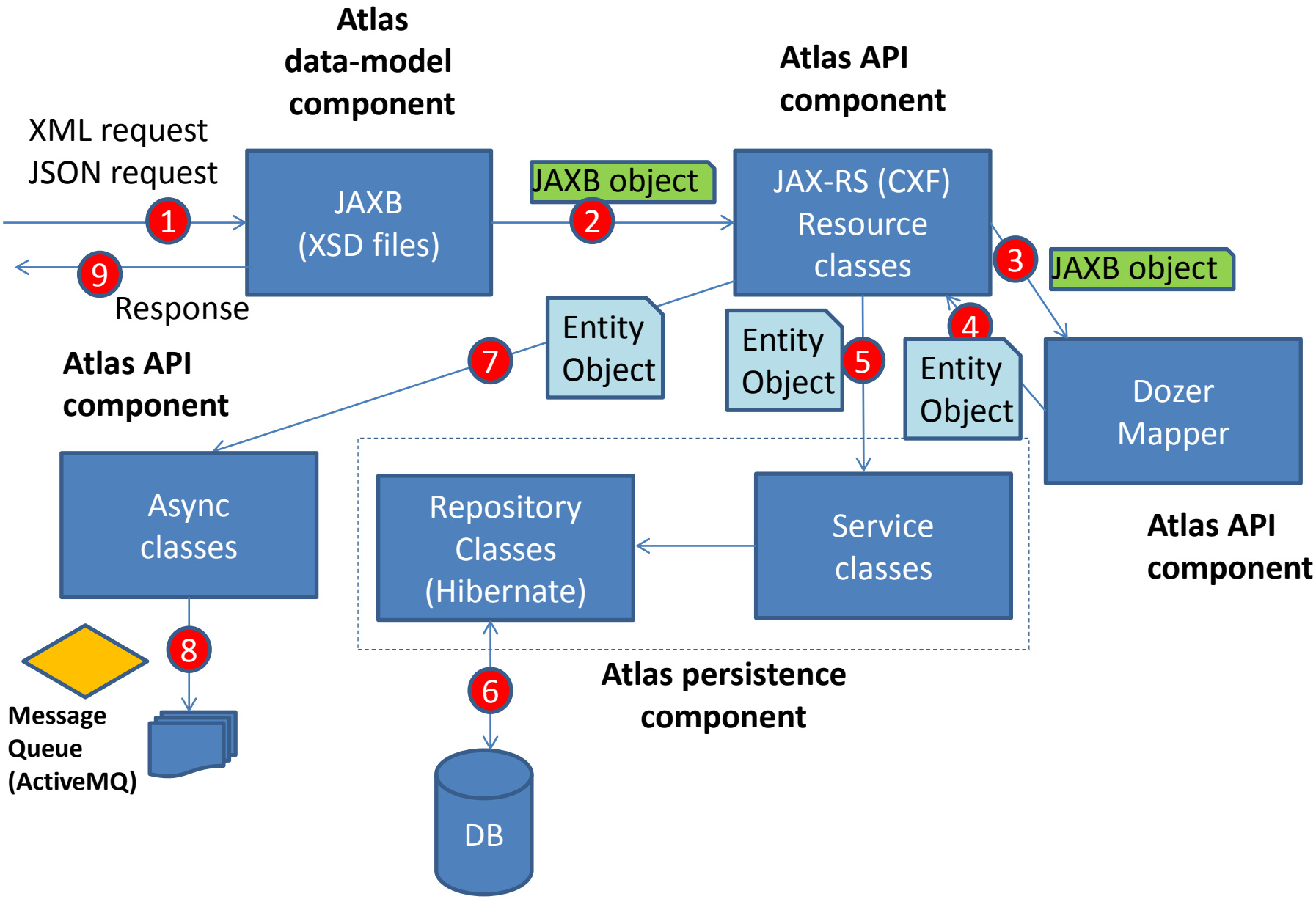
- If there are errors during update to LB device, it’s considered an “operational” problem, which will be sorted out by the Ops team. The Loadbalancer status is set to “ERROR”.

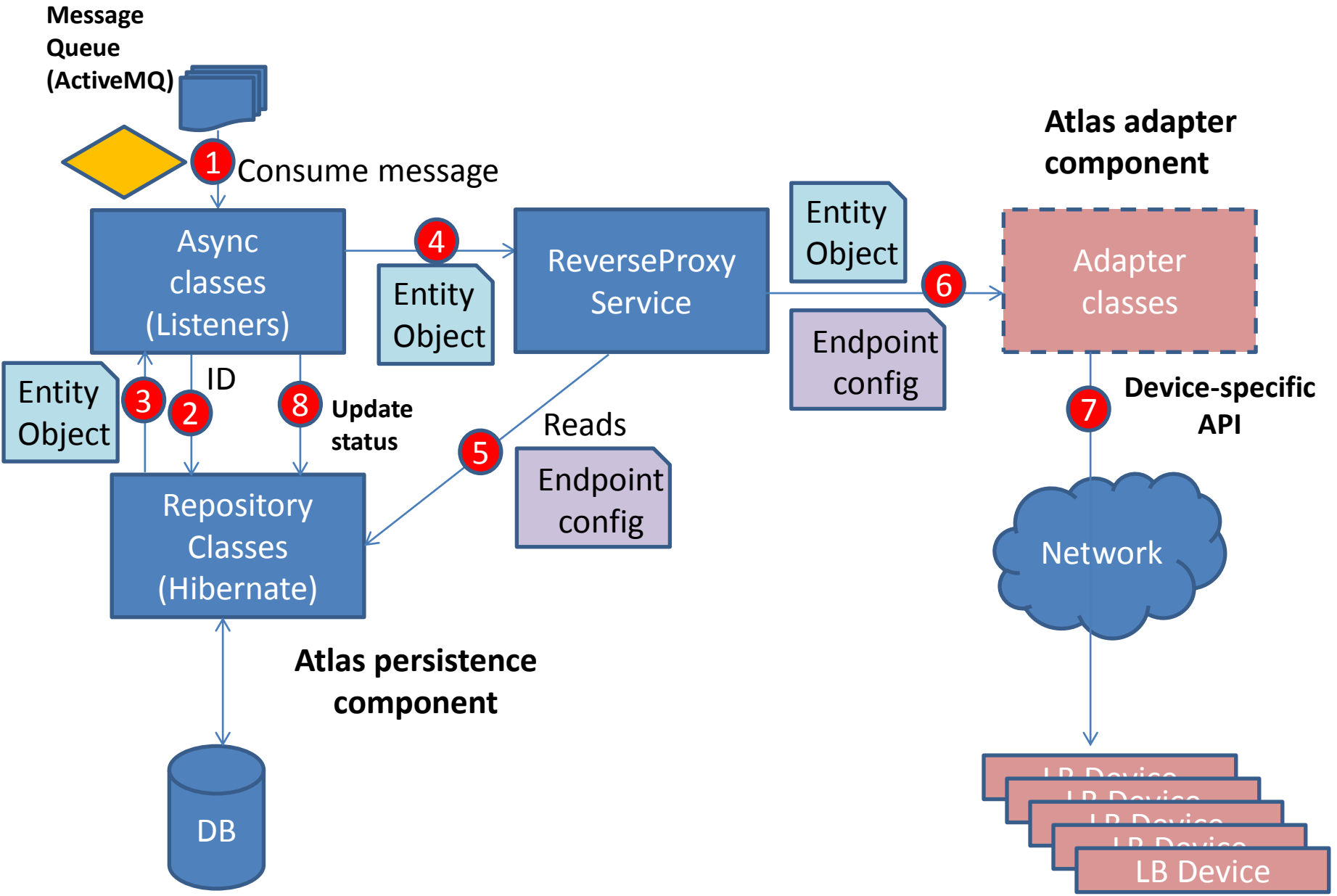
- Scaling is based on using ActiveMQ cluster, Java App Server cluster (e.g. Glassfish cluster) and several LB devices
  - REST operations return quickly (only update DB and return).
  - Any ActiveMQ consumer in the cluster can pickup a message from the queues.
  - Adapter consumes from queue and choose LB device to put the new loadbalancer on.

Atlas objects

- All user facing data types expressed in XSD.
  - Java JAXB used to generate POJOs (Java classes) from XSD files (contracts).
- Use Apache CXF (JAX-RS) to expose service API as REST or SOAP.
- Atlas maps user-facing POJOs to internal domain POJOs using Dozer (a tool that maps between 2 Java classes).
- Internal domain POJOs (Entity objects) are persisted to DB using Hibernate.

Workflow of request processing through Atlas components


Atlas
data-model
component
Atlas API
component
XML request
JSON request
JAXB
(XSD files)
JAXB object
JAX-RS (CXF)
Resource
classes
JAXB object
Response
Entity
Object
Entity
Object
Entity
Object
Dozer
Mapper
Atlas API
component
Atlas API
component
Async
classes
Repository
Classes
(Hibernate)
Service
classes
Message
Queue
(ActiveMQ)
Atlas persistence
component
DB
1
2
3
4
5
6
7
8
9


Message Queue (ActiveMQ)
1
Consume message
Async classes (Listeners)
4
Entity Object
ReverseProxy Service
Entity Object
6
Endpoint config
Atlas adapter component
Adapter classes
Entity Object
3
2
ID
8
Update status
5
Reads
Endpoint config
7
Device-specific API
Repository Classes (Hibernate)
Network
Atlas persistence component
DB
LB Device