Okapi clustering

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Why cluster Okapi?

Good reasons:

- Resiliency
  - Better ability to survive node outages
  - Ability to spread Okapi instances across cluster (pod affinity)
  - Smoother upgrades

Bad reasons:

- Performance
  - Benefits are unclear, more testing needed
- Complexity

Hazelcast clustering

- Default clustering technology for Vert.X
- Shared memory map between nodes
- Can be self-forming, nodes automatically register and are removed if they become unavailable
- Many options for node discovery
  - Multicast
  - Kubernetes
  - AWS
  - etc. etc.

Okapi clustering with Kubernetes

Set up

- RBAC (service account and role binding)
- Hazelcast config
- Okapi config (stateful set)

Okapi upgrade considerations

- Stateful set (not deployment)
  - Set up grace period for graceful shutdown

- Track Vert.X version in Okapi release notes
  - Hazelcast patch releases can use standard rolling upgrade strategy
  - Minor releases require Okapi stateful set to be redeployed (planned outage)