# Tungsten Cluster Master Class

## Advanced: Multi Cluster Topologies – Dynamic Active-Active

Chris Parker

VP of Customer Success, EMEA

# Topics

In this short course, we will

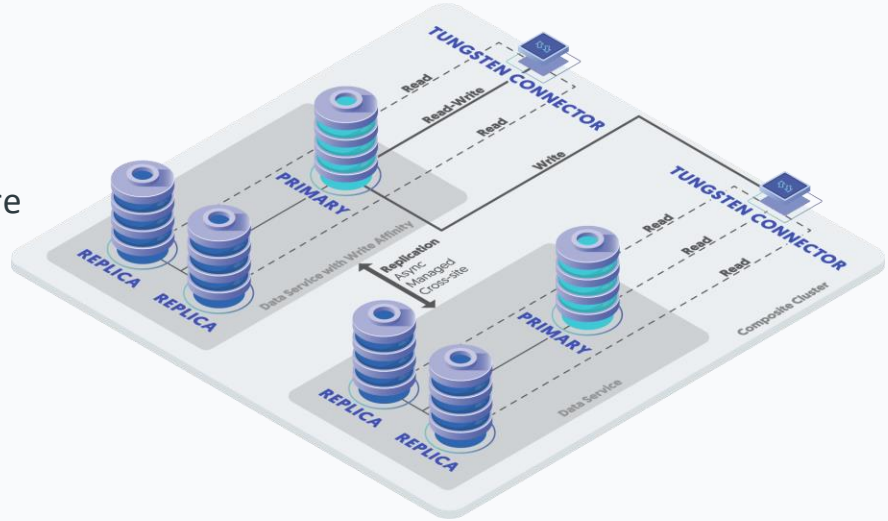
- Review Dynamic Active-Active Topology
- Explore additional considerations
- Study the Configuration
- See an installation in practice

# Dynamic Active-Active Topology

# Tungsten Cluster

## Dynamic Active-Active Topology

- Minimum 2 Clusters
  - Min 3 nodes per cluster
- All clusters are read/write
- Multiple write-able primaries, but the connectors are configured to write to a single primary
- The other sites remain writeable, and one will be used if the original site is fully unavailable
- Cross-Region
- Simple setup and control
- Managed cross-site replication – the managers are aware of and control the cross-site Replication services.



# Configuration Considerations

# Installation Considerations

- All usual Pre-Reqs need to be in place
- Network Connectivity
  - Additional THL Ports required for sub-service
- Database must be ROW based
- Network Latency between clusters
- Connector Behaviour
  - Switch back on recovery?

# Sample Config

# Dynamic Active-Active

- Both Clusters identified as Active clusters
- All writes, from any Connector, will follow the affinity rules set.
- In event of a cluster failure, the connectors will re-route writes based on the affinity
- When a cluster recovers, depending on the reset option, connectors will either revert to the original cluster, or remain where they are
- Completely Cluster-aware
- Everything is controlled via `cctrl`
- One single install
- INI Installation method only – Staging-method installs are not supported

```
[defaults]
user=tungsten
install-directory=/opt/continuent
profile-script=~/.bash_profile
connector-bridge-mode=false
application-user=app_user
application-password=secret
application-port=3306
application-readonly-port=3307
replication-user=tungsten
replication-password=secret
replication-port=13306
disable-security-controls=true
rest-apis=true
rest-api-authentication=true
rest-api-ssl=true
rest-api-address=0.0.0.0
rest-api-admin-pass=secret
rest-api-admin-user=tungsten
connector-reset-when-affinity-back=true

[alpha]
topology=clustered
master=db1
members=db1,db2,db3
connectors=db1,db2,db3
connector-write-affinity=alpha
connector-read-affinity=alpha

[beta]
topology=clustered
master=db4
members=db4,db5,db6
connectors=db4,db5,db6
connector-write-affinity=alpha
connector-read-affinity=beta

[global]
topology=composite-multi-master
composite-datasources=alpha,beta
```

# Connector Affinity

- Can be specific in two different ways:
  - `connector-write-affinity`
  - AND
  - `connector-read-affinity`
  - OR
  - `connector-affinity`

- 2 Sites (`alpha,beta`)
  - All Connectors:
    - `connector-write-affinity=alpha`
  - `alpha` connectors:
    - `connector-read-affinity=alpha`
  - `beta` connectors:
    - `connector-read-affinity=beta`
  - OR
  - `alpha` connectors:
    - `connector-affinity=alpha:alpha,beta`
  - `beta` connectors:
    - `connector-affinity=alpha,beta:beta`

# Summary

What we have learnt today

- Reviewed the Dynamic Active-Active Topology
- Understood Configuration and considerations for a Dynamic Active-Active deployment
- Demonstrated an installation

# Thank you for listening

continuent.com

Chris Parker

VP of Customer Success, EMEA