

# Ways To Recover In-Memory Data On A Disaster

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# Hello!

**I AM ALPARSLAN AVCI**

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Loves to solve problems (if I can 😊)

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# RECAP

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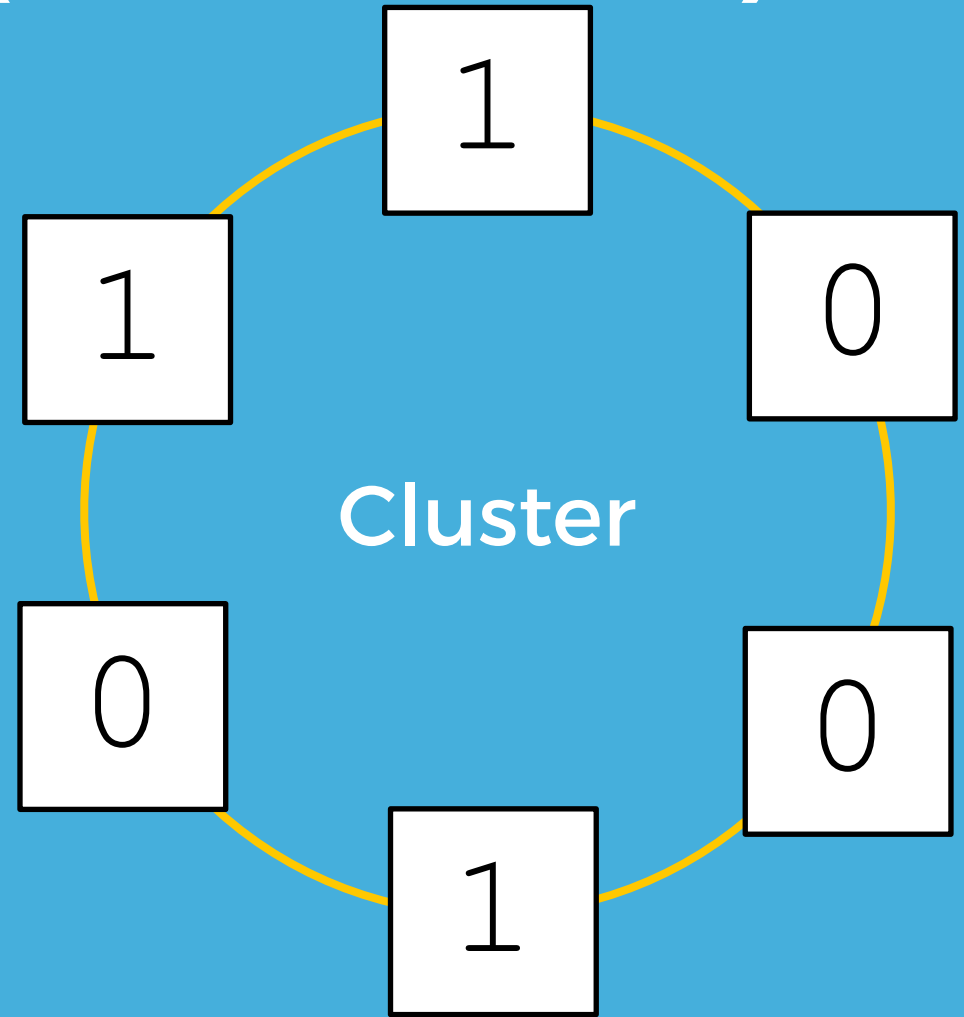
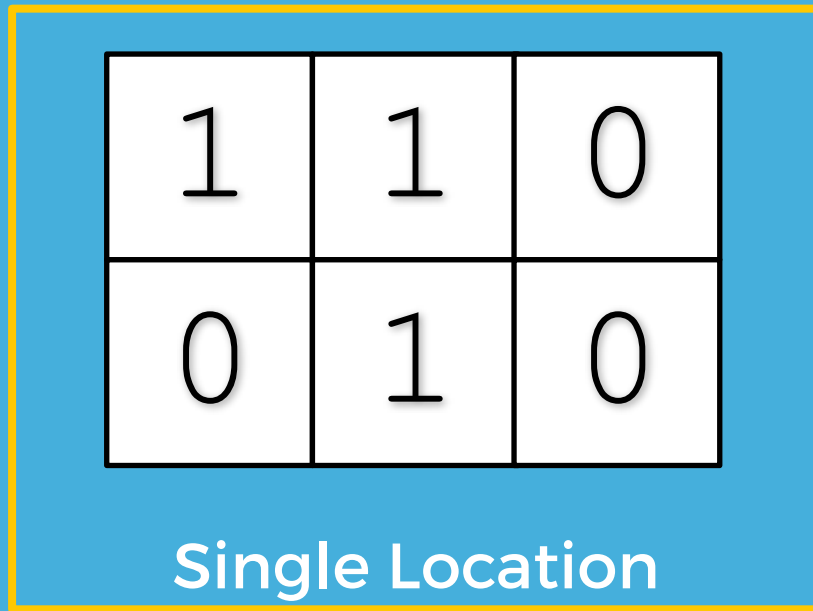
**IMDG = In-Memory Data Grid**



# PARTITIONING & REPLICATION



# DATA PARTITIONING (aka SHARDING)



# DATA REPLICATION

1	1	0
0	1	0

Primary



1	1	0
0	1	0

Backup



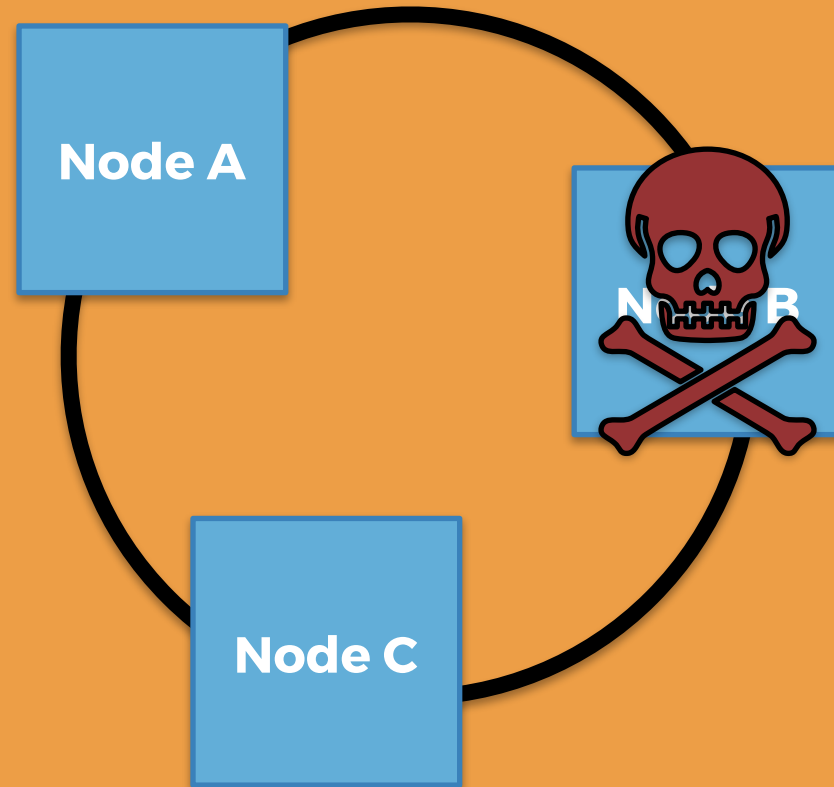
# USE-CASE 1: SINGLE NODE CRASH

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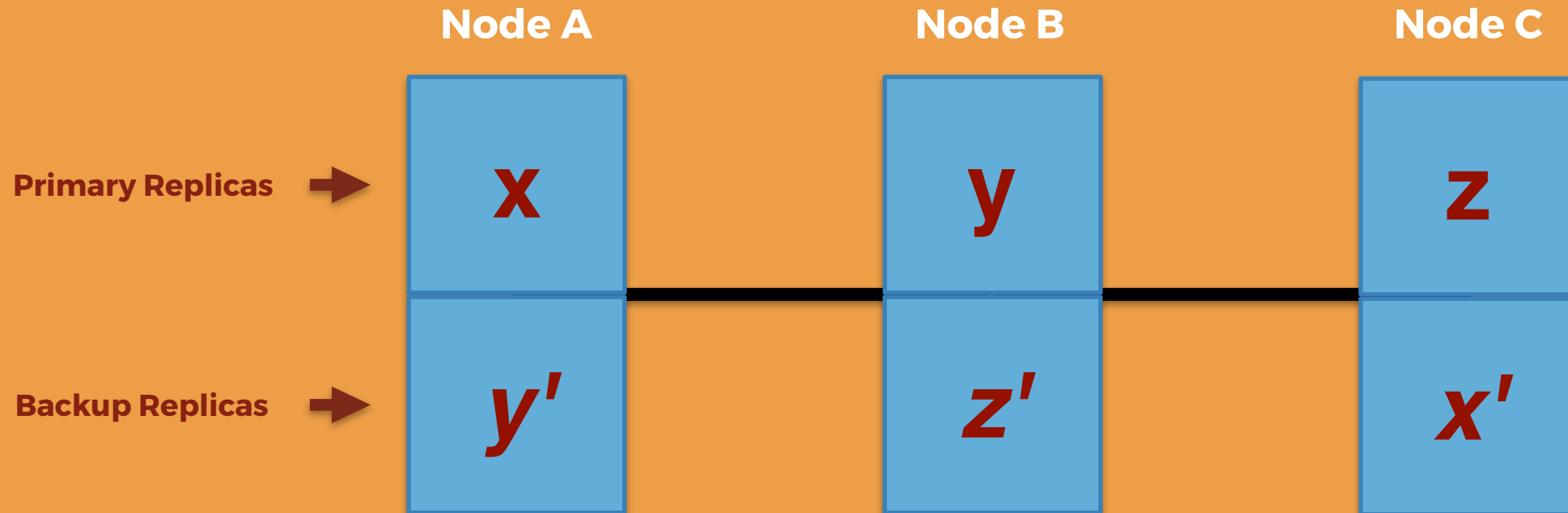




# SINGLE NODE CRASH



# SOLUTION: BACKUP REPLICAS



# Demo Time!

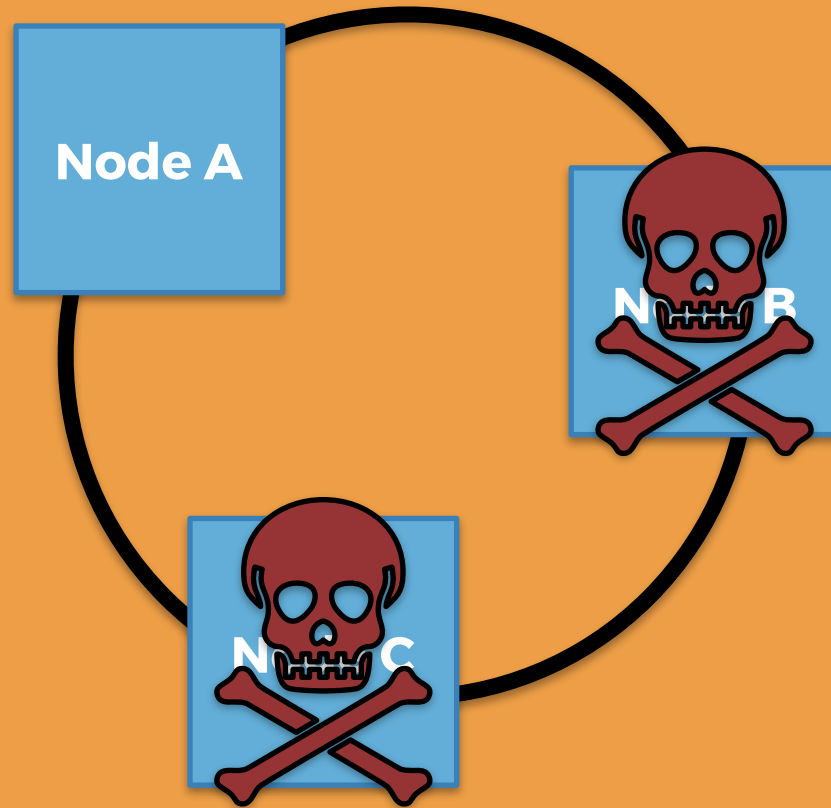


## USE-CASE 2: MULTIPLE NODES CRASH

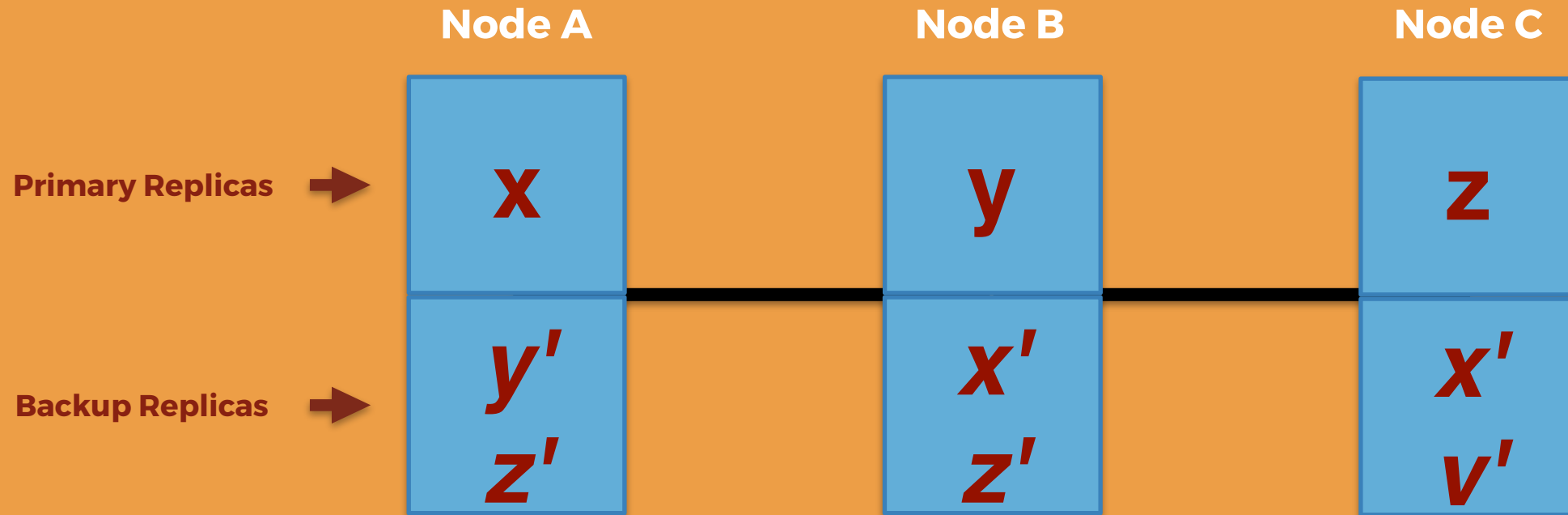
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# MULTIPLE NODES CRASH



# SOLUTION: MULTIPLE BACKUP REPLICAS



# Demo Time!

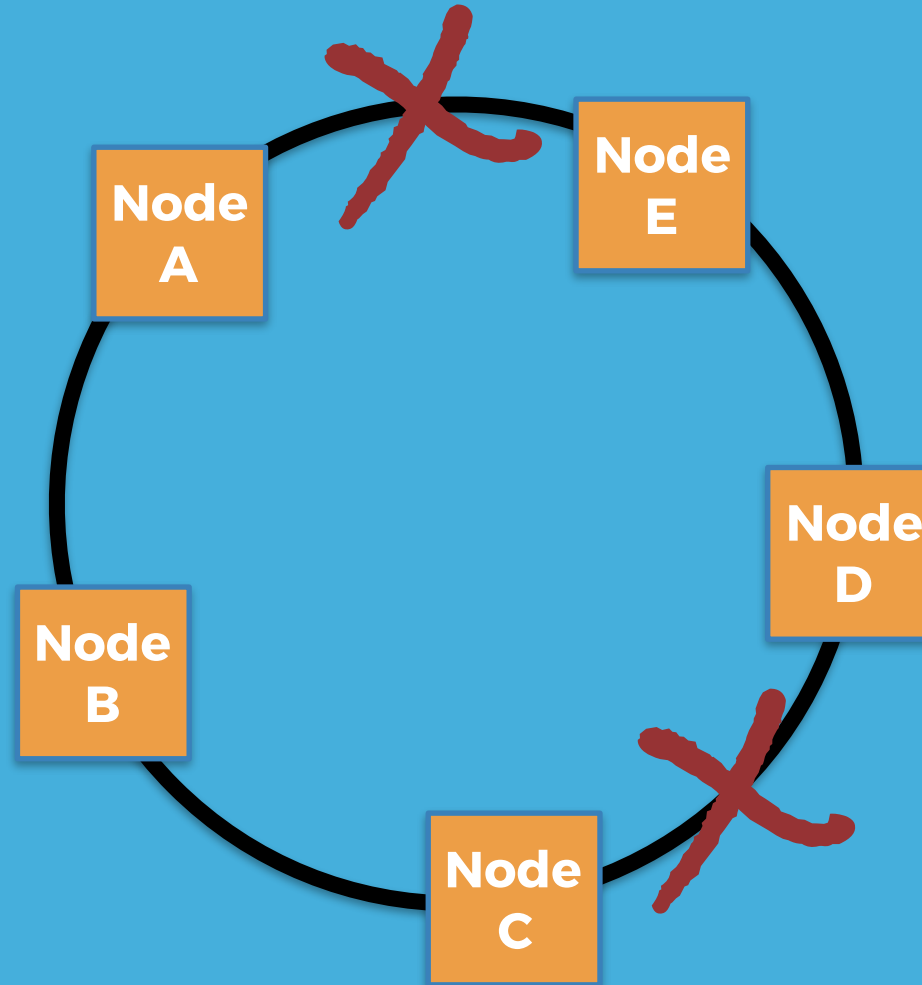


# **USE-CASE 3: SPLIT-BRAIN SCENARIO**

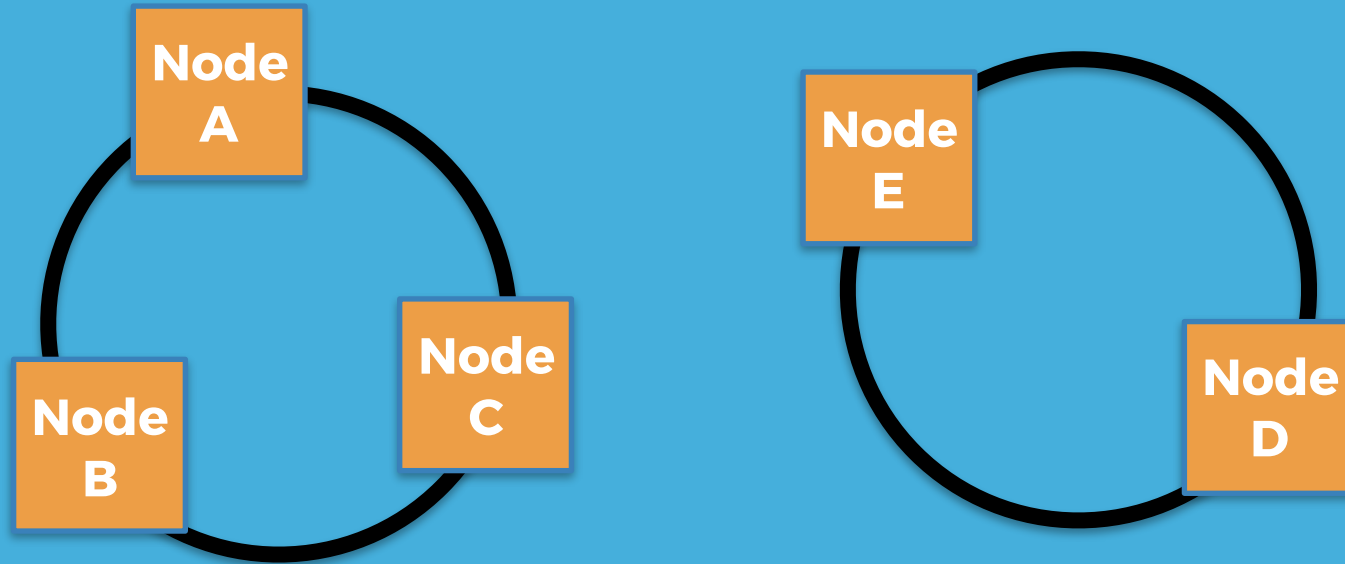
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# SPLIT-BRAIN SCENARIO



# SPLIT-BRAIN SCENARIO



# CAP THEOREM

- ✓ Consistency
- ✓ Availability
- ✓ Partition Tolerance





# QUORUMS



For Split-brain Protection



# MERGE POLICIES



For Split-brain Recovery

# Demo Time!

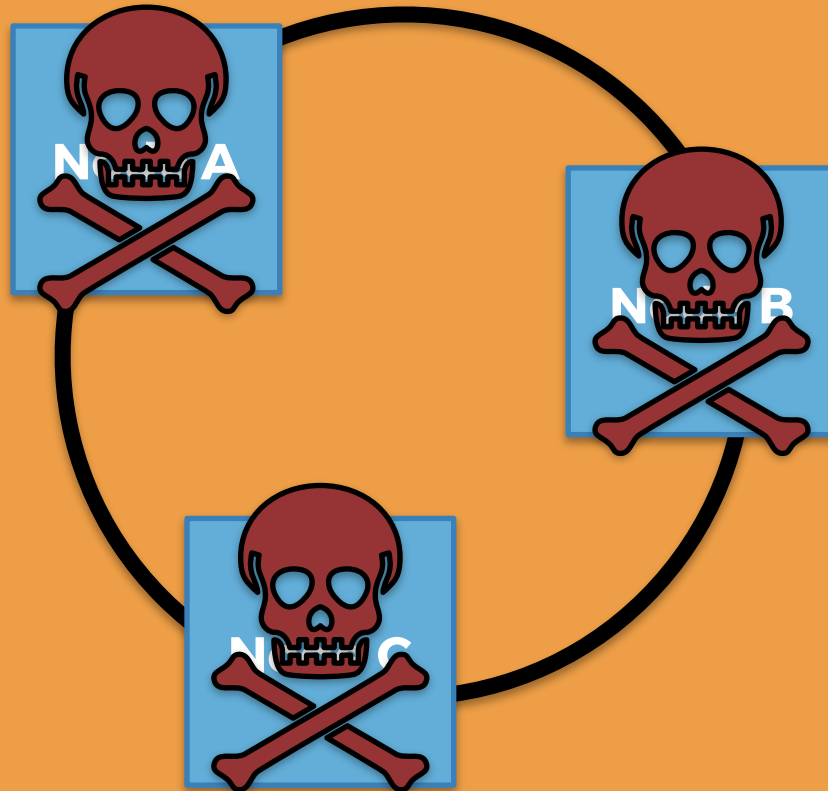


# USE-CASE 4: TOTAL CLUSTER CRASH

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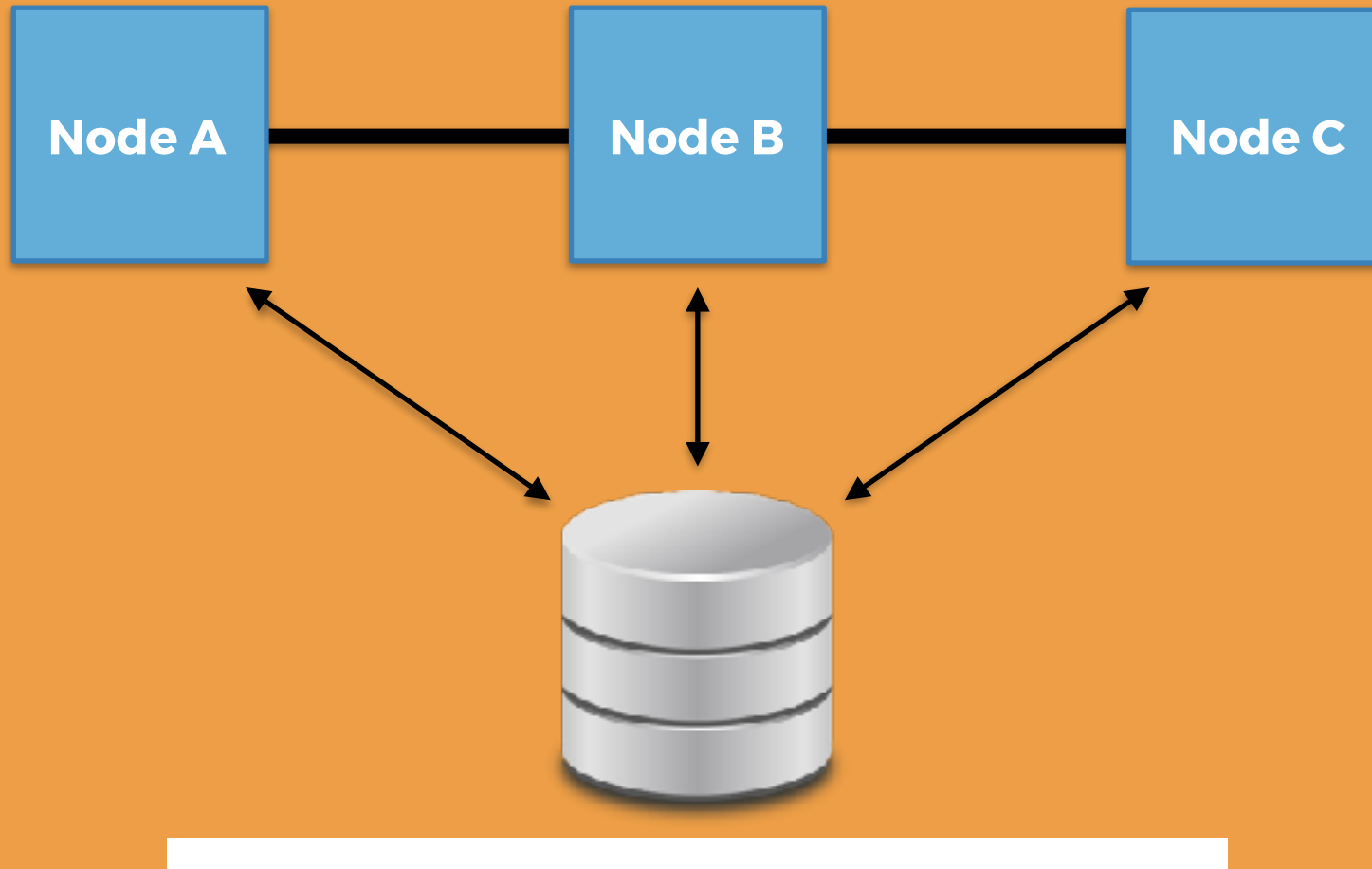


# TOTAL CLUSTER CRASH





# SOLUTION: DATABASE PERSISTENCE



# **SOLUTION: DATABASE PERSISTENCE**

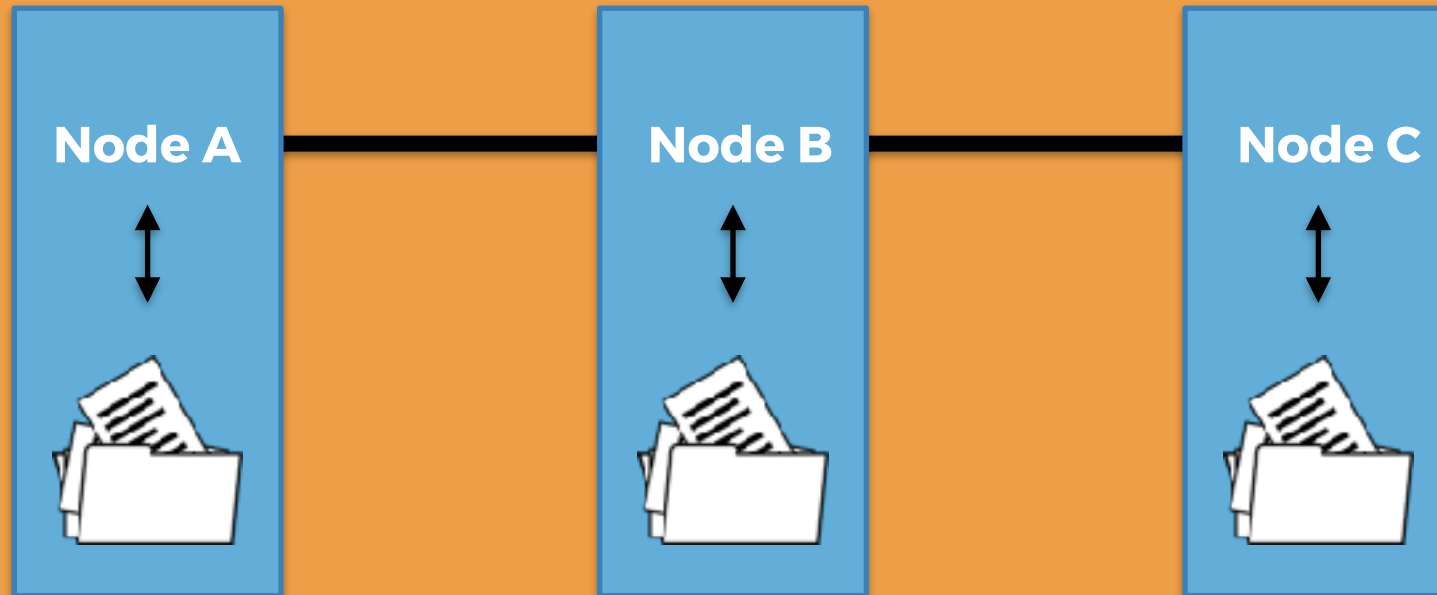
- ✓ Read-Through
- ✓ Write-Through
- ✓ Write-Behind



# Demo Time!



# SOLUTION: FILE PERSISTENCE



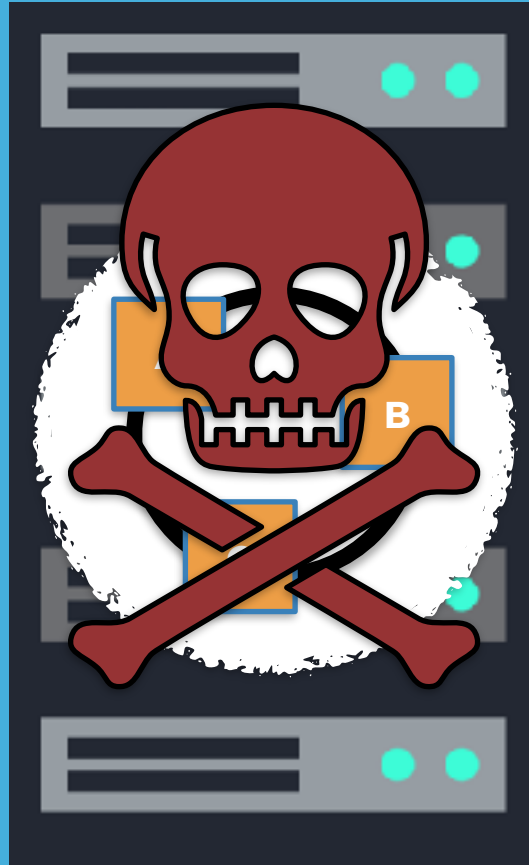
# Demo Time!



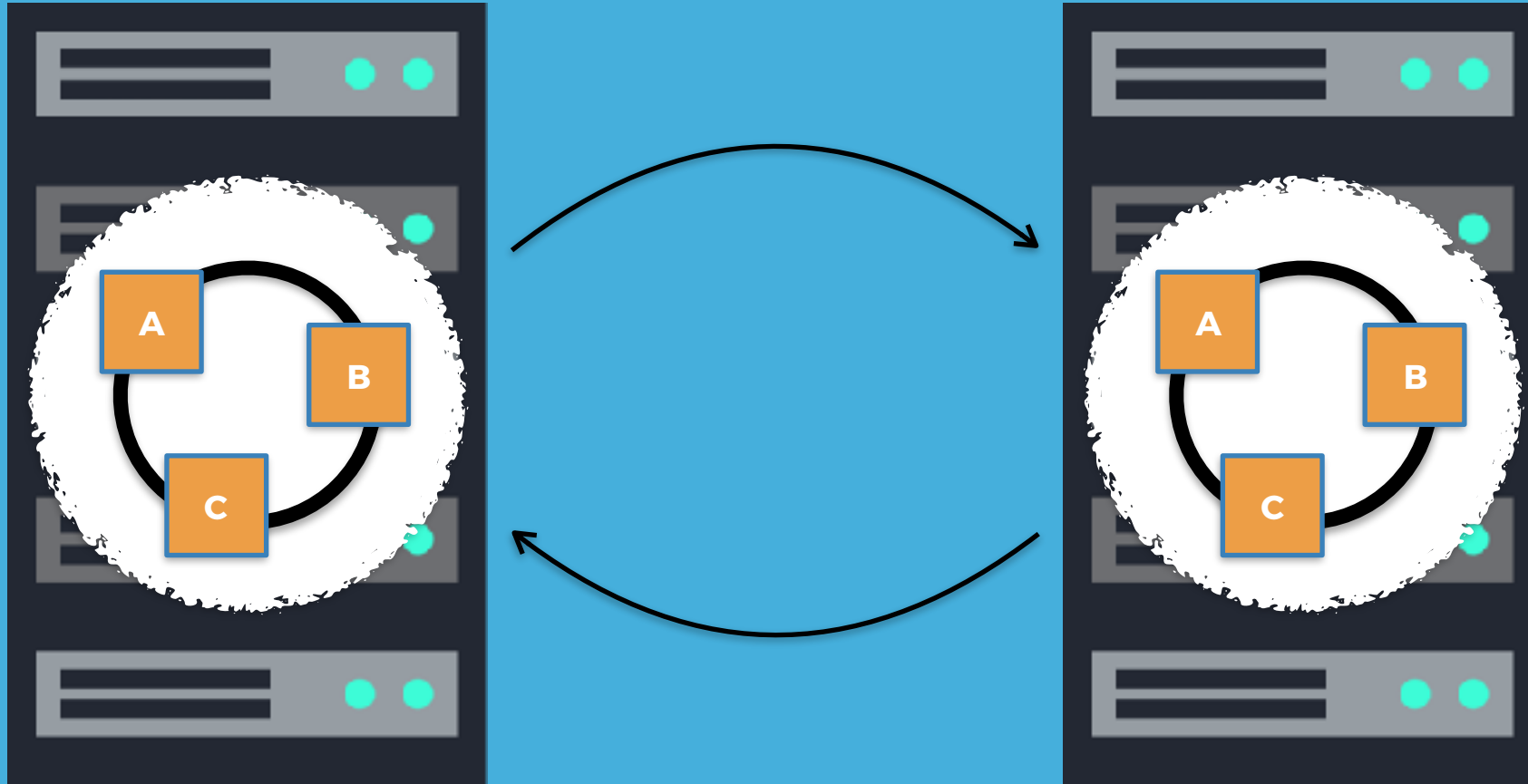
# USE-CASE 5: DATA CENTER CRASH

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# DATA CENTER CRASH



# SOLUTION: REPLICATE THROUGH WAN





# WAN REPLICATION

- ✓ Active - Passive
- ✓ Active - Active



# Demo Time!



# Questions?



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