



SUNGARD

Global Services

Stephen Nimmo

Leveraging the Data Grid with Hazelcast

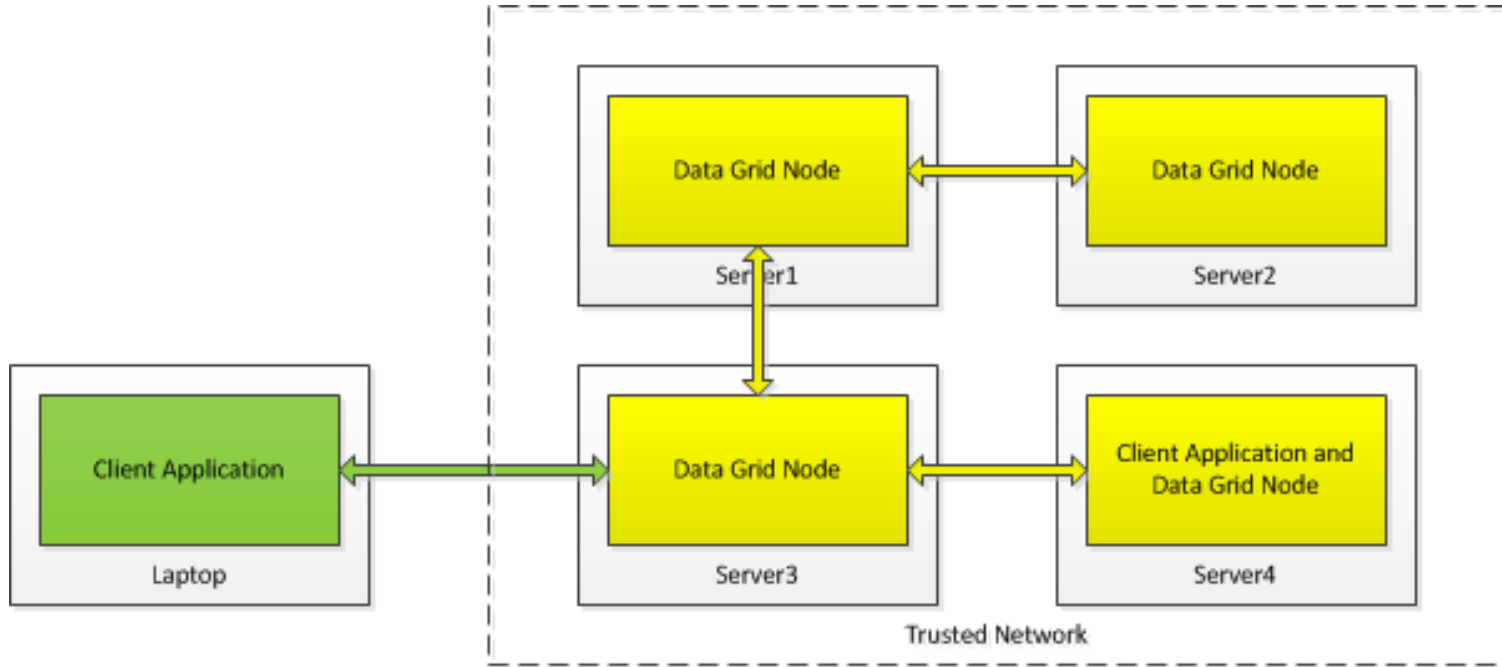
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Leveraging the Data Grid

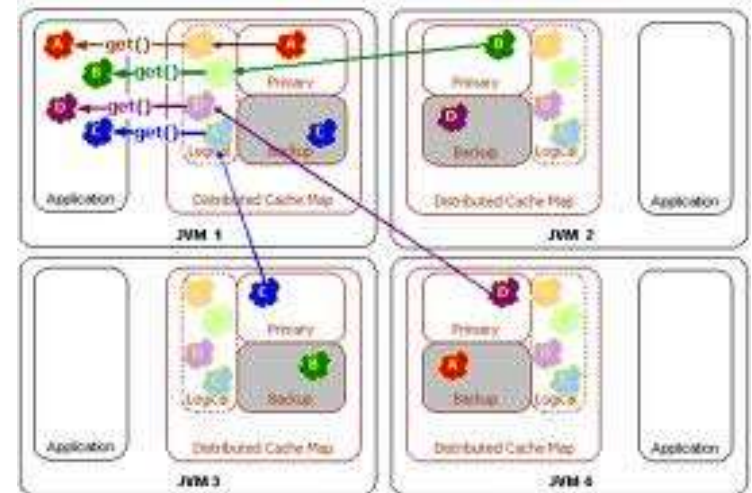
- What are Data Grids?
 - Data Caching
 - Data Replication
 - Distributed Computing Services
- Benefits
 - Speed - Data kept in-memory
 - Low Response Times
 - High Throughput
 - Resiliency
 - Data Redundancy
 - Scalability
 - Reduces bottlenecks for data access





- Data Replication
- Backup
- Failover
- Scalability
- Client Types
 - Data Node
 - Super Client
 - Dataless Client

- Topologies
 - Distributed
 - Replicated
 - Near Cache
- Data Definitions
 - POJOs
 - Implement equals and hashCode!
 - Map, Queue, Topic, List, Set
- Data Node Classpaths
 - Must include all objects to be stored.
 - Create separate jar for grid definitions
- Naming
 - Prefix + category



- Create a new Hazelcast node
 - Show structure for Hazelcast configuration
 - Start Market Data Server
-
- Show market data simulation
 - Creating mock data
 - Topics
 - Maps
 - Show discovery and failover



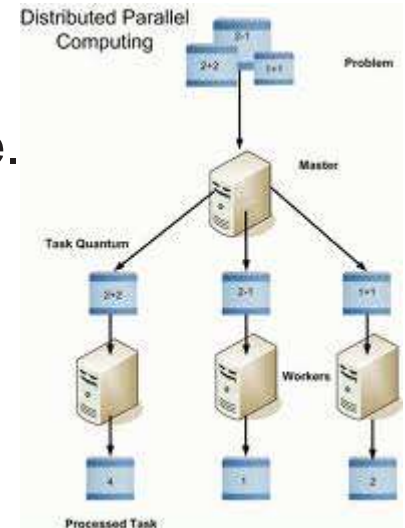
- Key Based Lookups
 - Check for values in maps using a key
- Data Value Queries
 - SQL Predicates
 - Criteria API
- QueryingTheGrid Example



- Read Through
 - Checks map for key first
 - If no key is present and map is backed with a map store, process will check database for data values
- Write Behind
 - Can configure timing, including real-time persistence
 - Allows persistence from any node
 - Reduces transactional requirements
- Examples



- Create callable
- Create runnable
- You can ask Hazelcast to execute your code (Runnable, Callable):
 - on a specific cluster member you choose.
 - on the member owning the key you choose.
 - on the member Hazelcast will pick.
 - on all or subset of the cluster members.
- DistributedExecution example



- MapListener
 - entryAdded
 - entryRemoved
 - entryUpdated
 - entryEvicted
- MessageListener
 - Queue or Topic
- EventListeners example



- `Hazelcast.getCluster()`
 - `Cluster`
 - `Member`
- `HazelcastInstanceAware`
- `ClusterInformation` example

- HTTP Session Replication
- Complex Event Processing
- Data Monitoring
- REST Support
- Amazon EC2 Autodiscovery

- Hazelcast - <http://www.hazelcast.com>
- 100 Node Demo - <http://cloud.dzone.com/articles/running-hazelcast-100-node>
- Source code for demonstration can be found at <http://code.google.com/p/stephennimmo>
- You can follow me on Twitter @stephennimmo



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