Apache Ignite - In-Memory Data Fabric
Beyond the Data Grid

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www.ignite.apache.org  #apacheignite
• Project history
• In-Memory Data Fabric
• Advanced Clustering
• In-Memory Compute Grid
• In-Memory Data Grid
• In-Memory Service Grid
• In-Memory Streaming & CEP
• Plug-n-Play Hadoop Accelerator
IN-MEMORY DATA FABRIC
STRATEGIC APPROACH TO IMC
IN-MEMORY DATA FABRIC
MAIN CHARACTERISTICS

- Data Grid
- Compute Grid
- Service Grid
- Streaming
- Hadoop Acceleration
- Advanced Clustering
- File System
- Messaging
- Events
- Data Structures
Ease of Getting Started
  Automatic Discovery
Any Environment
  Public Cloud
  Private Cloud
  Hybrid Cloud
  Local Laptop
Zero-Deployment
  Auto-Deploy Code
Full Cluster Management
Pluggable Design
IN-MEMORY COMPUTE GRID

Direct API for MapReduce
Zero Deployment
Cron-like Task Scheduling
State Checkpoints
Load Balancing
Automatic Failover
Full Cluster Management
Pluggable SPI Design
IN-MEMORY DATA GRID

Distributed In-Memory Key-Value Store
Replicated and Partitioned data
TBs of data, of any type
On-Heap and Off-Heap Storage
Highly Available In-Memory Replicas
Automatic Failover
Distributed ACID Transactions
SQL queries and JDBC driver
Collocation of Compute and Data
Unlimited Vertical Scale
Avoid Java Garbage Collection Pauses
Small On-Heap Footprint
Large Off-Heap Footprint
Off-Heap Indexes
Full RAM Utilization
Simple Configuration
IN-MEMORY SERVICE GRID

Distribute Any Data Structure
Available Anywhere on the Grid
Automatic Remote Access via Proxies

Controlled Deployment
Support for Cluster Singleton
Support for Node Singleton
Support for Custom Topology
Load Balanced

Guaranteed Availability
Auto Redeployment in Case of Failures
IN-MEMORY STREAMING AND CEP

Streaming Data Never Ends
Branching Pipelines
Pluggable Routing
Sliding Windows
Real Time Analysis
Plug and Play installation
10x to 100x Acceleration
In-Memory Native MapReduce
In-Process Data Colocation
IgniteFS In-Memory File System
Read-Through from HDFS
Write-Through to HDFS
Sync and Async Persistence
IN-MEMORY HADOOP ACCELERATOR

Zero Code Change
In-Memory Native Performance
Use existing MR code
Use existing Pig/Hive queries
No Name Node
Eager Push Scheduling
SPARK INTEGRATION
SHARED RDD & IN-MEMORY FILE SYSTEM
THANK YOU!

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