Apache Ignite and Apache Spark

Where Fast Data Meets the IoT

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Ignite PMC Chair
GridGain PM

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Agenda

- IoT Demands to Software
- IoT Software Stack
  - Device OS/RTOS
  - Data Collection and Enrichment
  - HTAP Platform
  - Application APIs
- Demo

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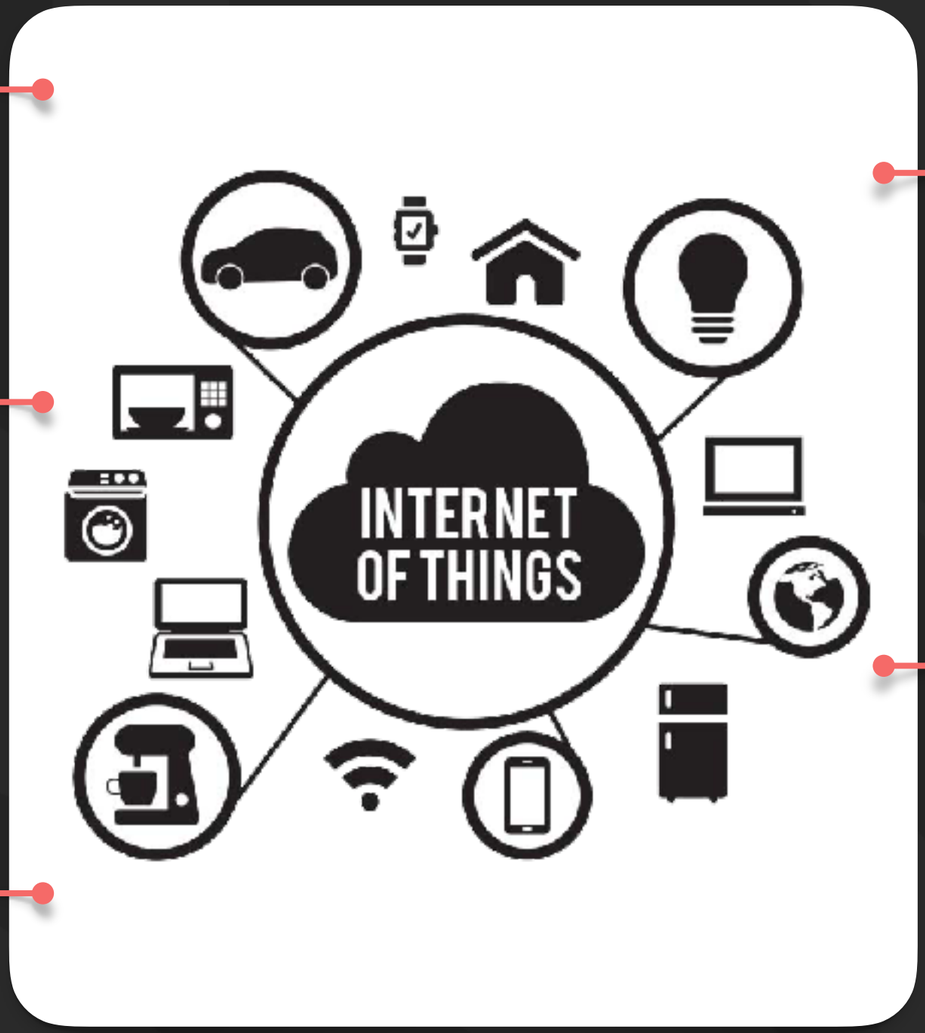
IoT Demands to Software

Real-time Processing

Analytics (BI, ML)

Simple Scalability



SQL, Geo-Spatial

High-Availability

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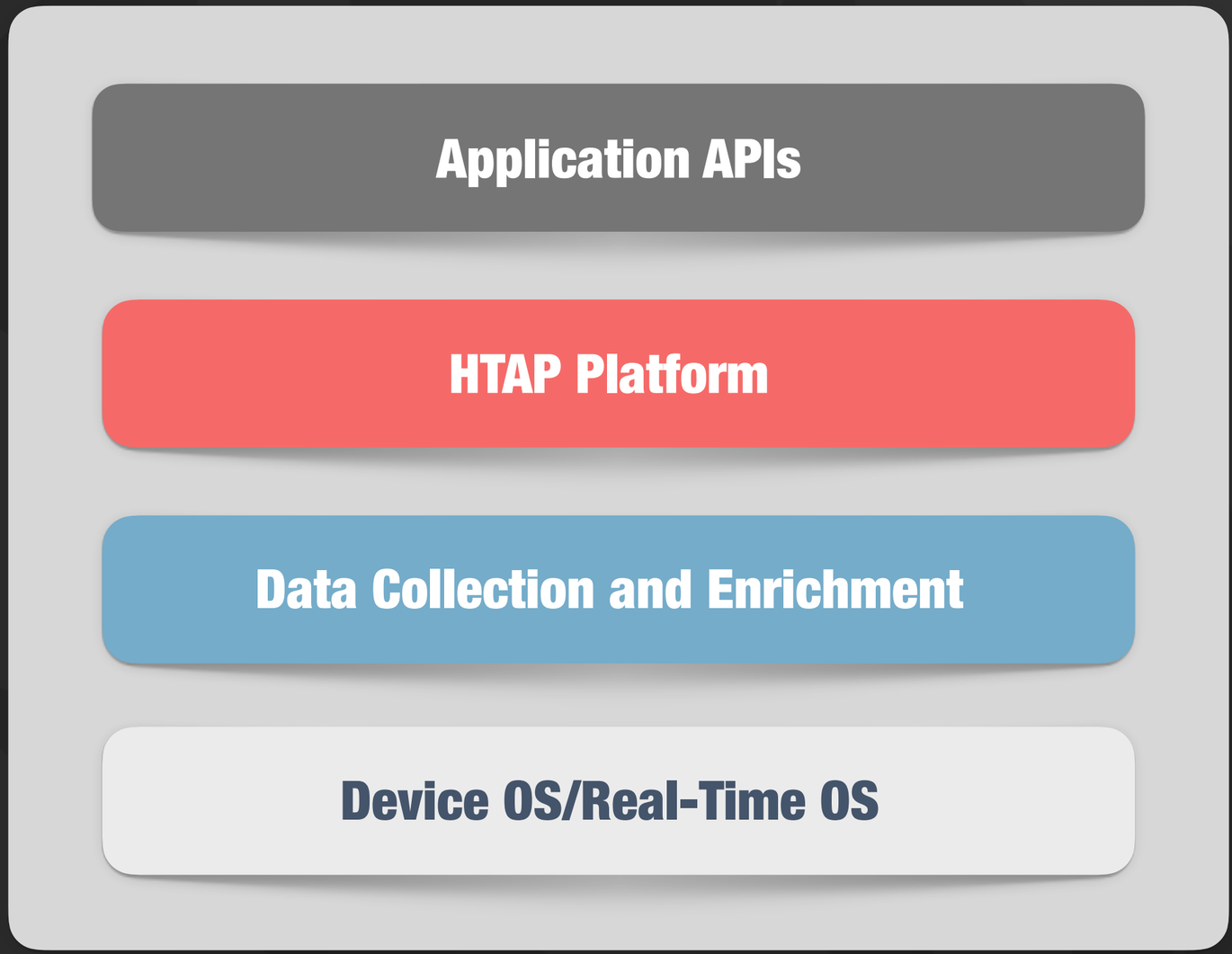
IoT Software Stack



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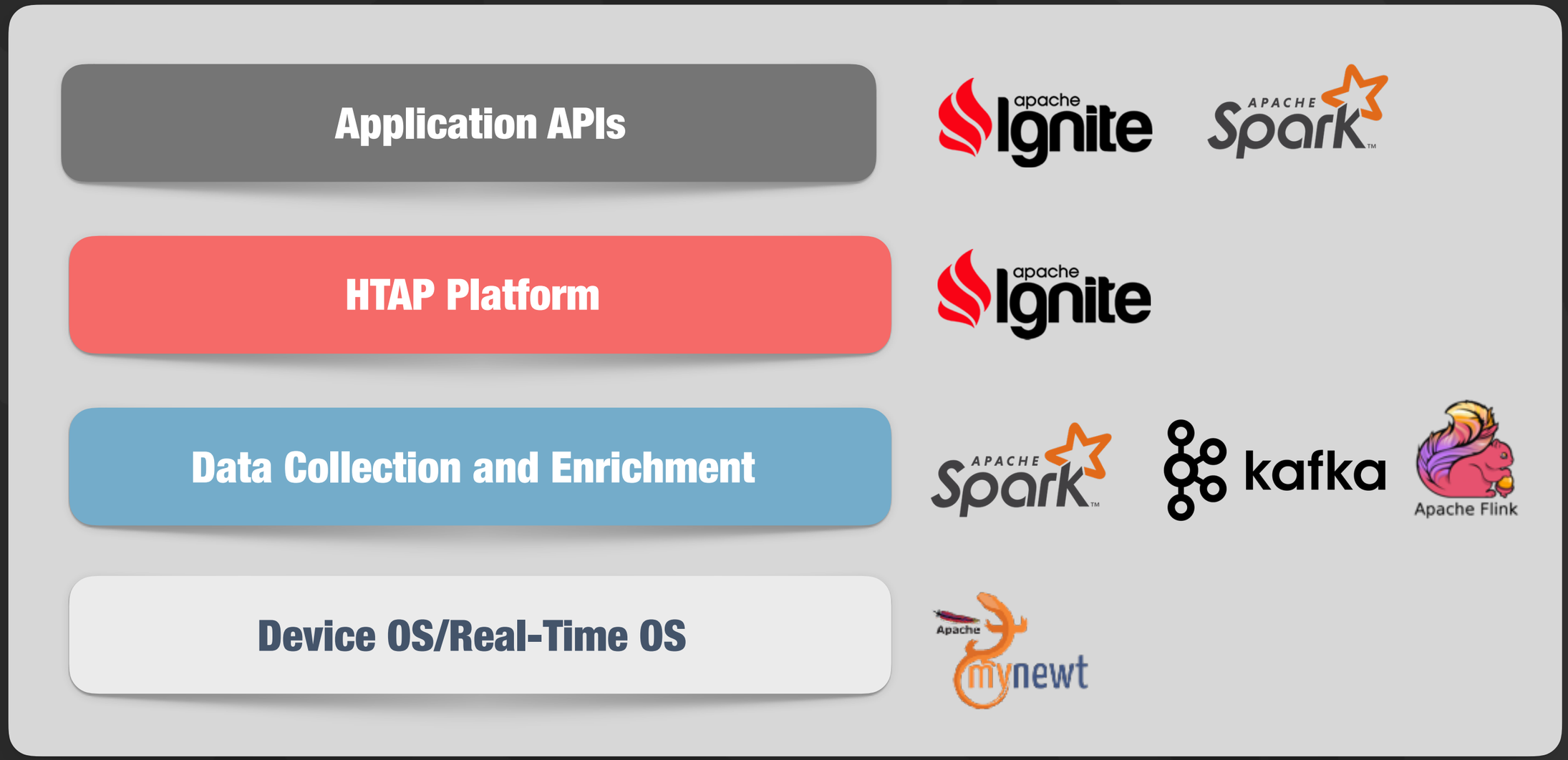
Apache IoT Software Stack



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Apache MyNewt

Open Source RTOS
Cortex M, MIPS

Secure Bootloader

Bluetooth, Wifi,
TCP/IP

Remote Firmware
Upgrade

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Data Collection and Enrichment

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Apache Ignite In-Memory Computing Platform

SQL | Key/Value | Transactions | Compute | Services | Streaming | ML

Memory-Centric Storage

Ignite Native Persistence
(Flash, SSD, Intel 3D XPoint)

Third-Party Persistence
(RDBMS, HDFS, NoSQL)

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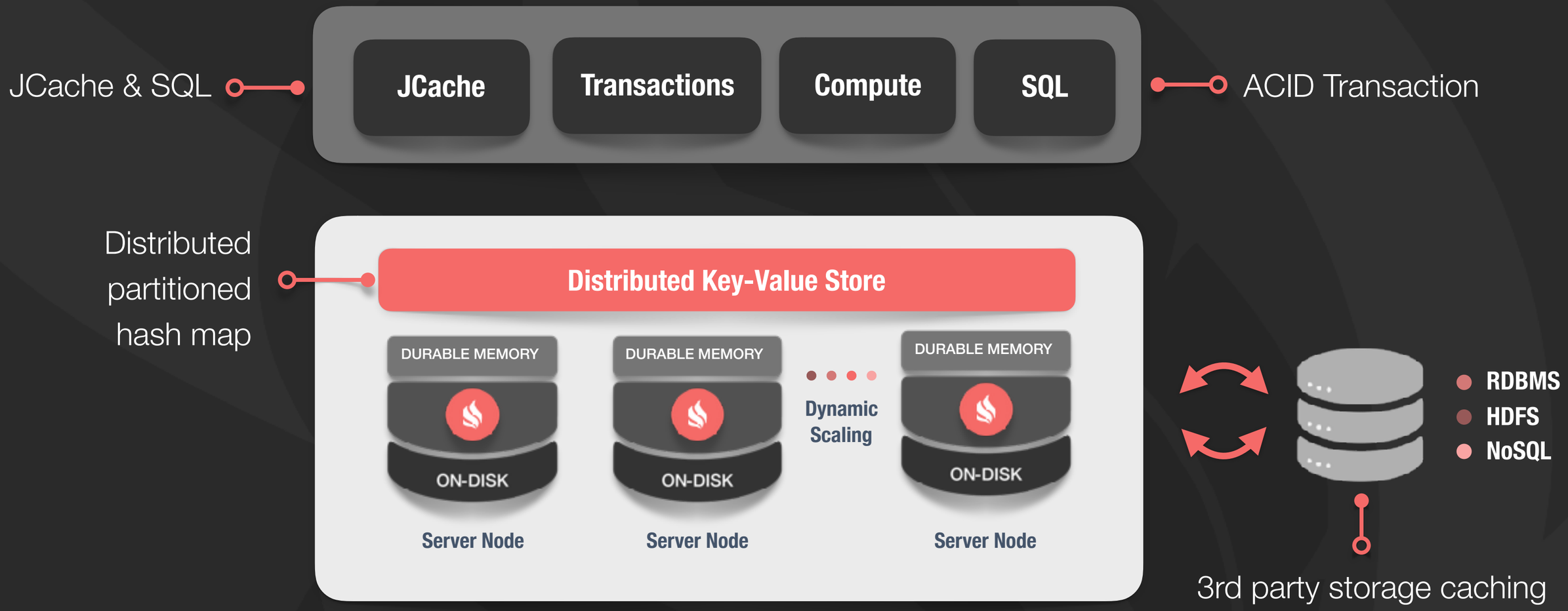
Data Grid



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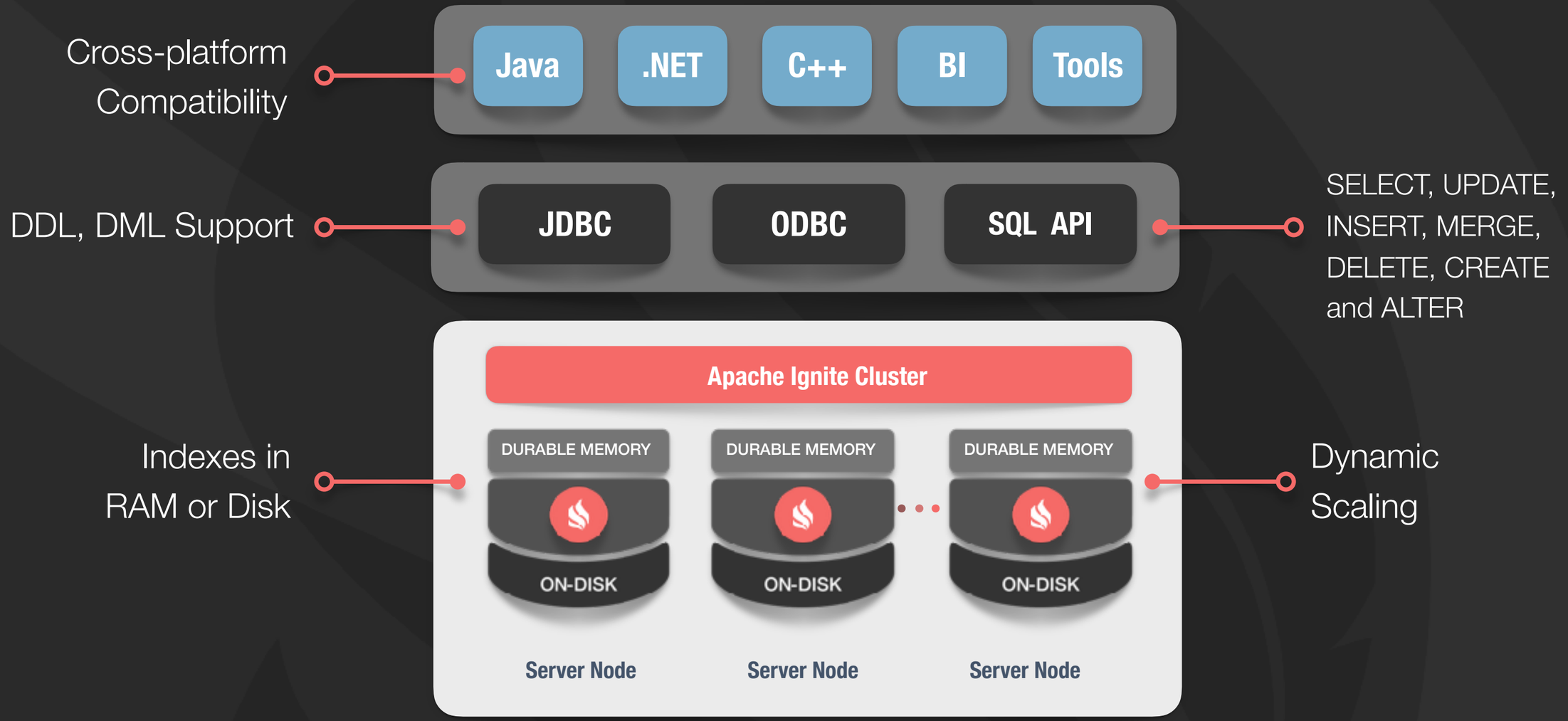
Distributed SQL



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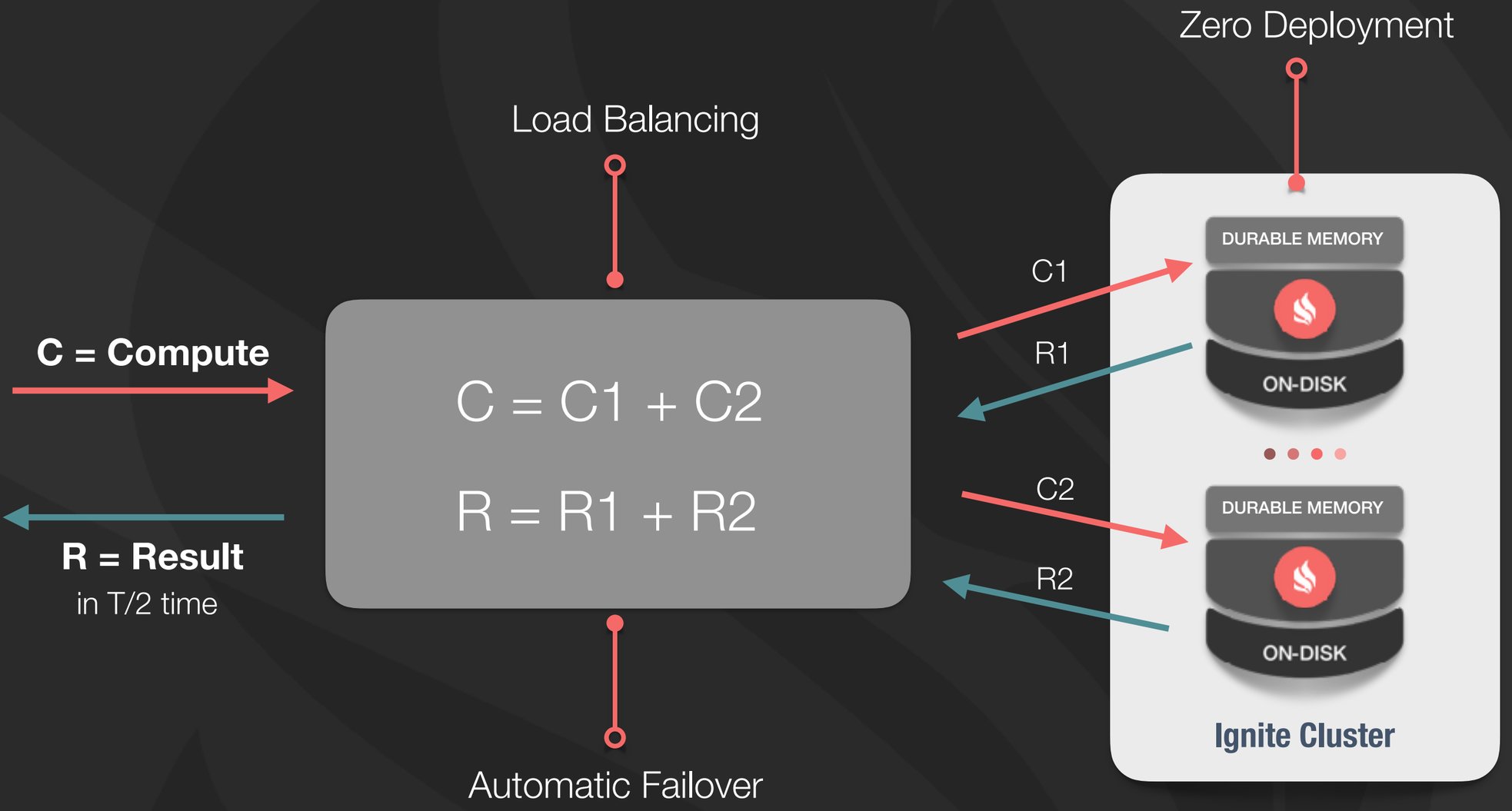
Compute Grid



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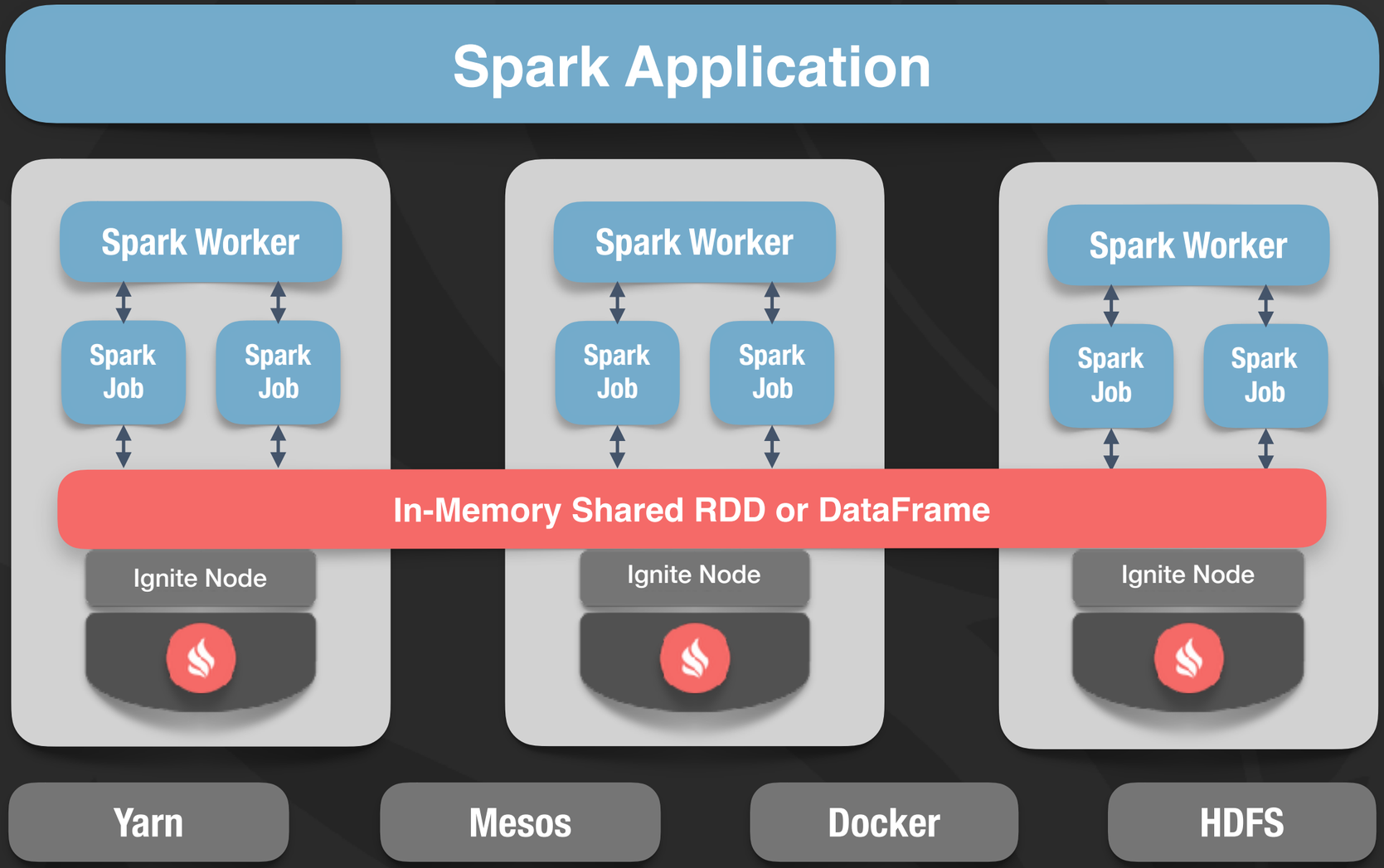
Ignite and Spark Integration



Share RDD across jobs on the host

Share RDD Globally

In-Memory Indexes

SQL on top of RDDs

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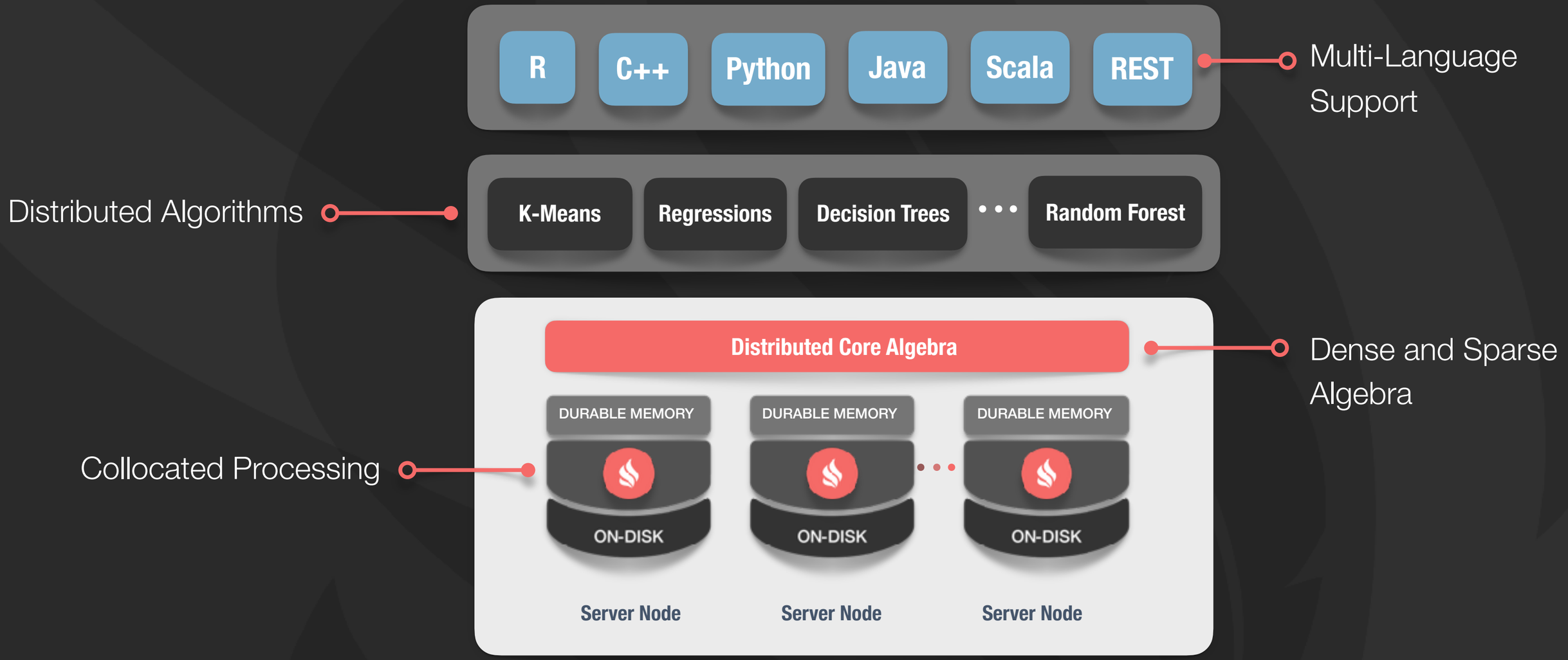
Machine Learning Grid



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Apache Ignite Users

Financial Services

SBERBANK
citibank
ING BANK
BARCLAYS
APOLLO
JEFFERIES
Fidelity Investments
AMERICAN EXPRESS

FinTech

SS&C | ADVENT
THE GLUE
MISYS FINANCIAL SOFTWARE
IHS Markit

Software

SS&C | ADVENT
Microsoft
workday.
SIEMENS
IBM

Telco

HUAWEI
RingCentral
intelligentpipe
CYBER DUST

Pharma & Healthcare

PRIME THERAPEUTICS
e-therapeutics

Logistics & Travel

Nederlandse Spoorwegen
MercuryGate
pitney bowes
JacTravel

E-commerce

newegg
24 HOUR FITNESS

IoT

thingworx
SilverSpring NETWORKS

Adtech

adalyser
nielsen

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Large IoT Provider - Smart Metering and Utilities

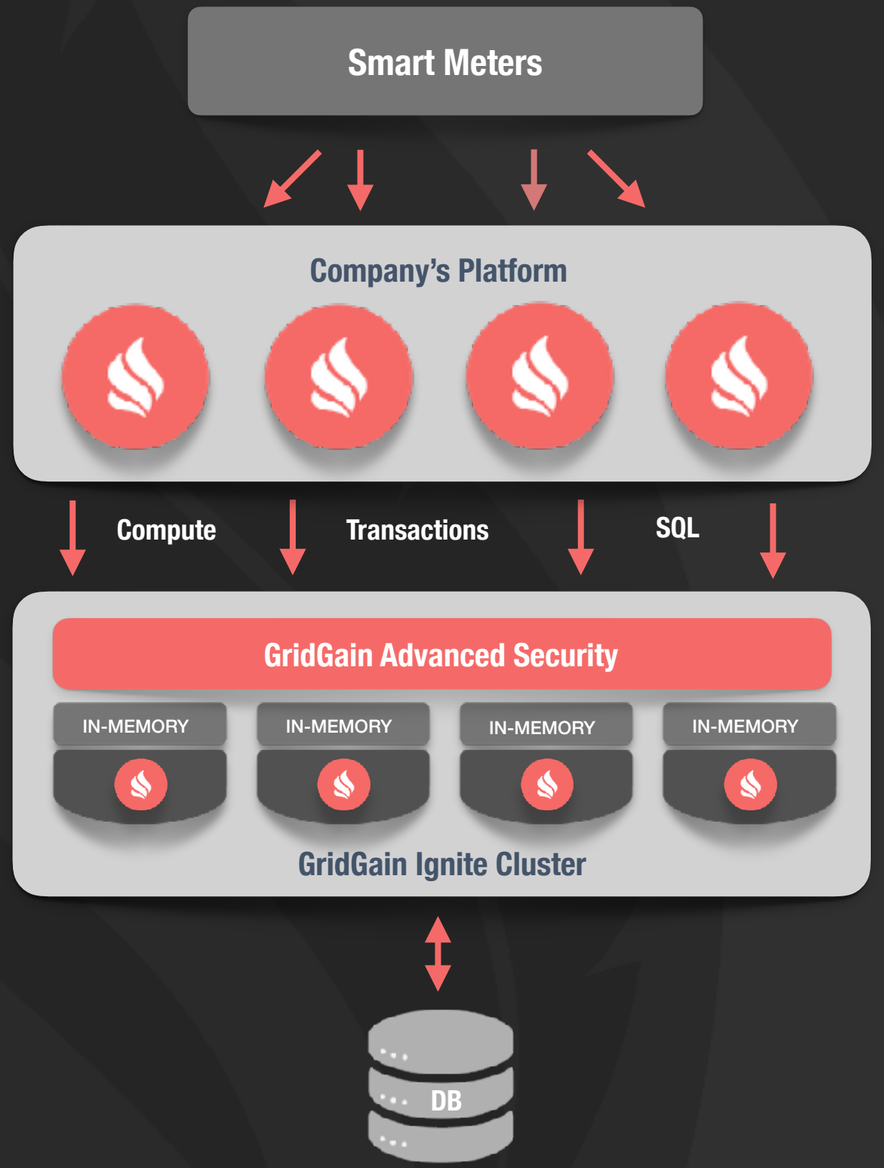
The company develops IoT solutions that transmit energy consumption data between meters, consumers and utilities in real time.

Problem

- Could not meet latency and throughput SLAs
- Missing scalability and elasticity

GridGain Solution

- 50 millions meters stream the data back in real-time
- Collocated in-memory processing
- Advanced security and multi-tenancy



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Demo

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Any Questions?

Thank you for joining us. Follow the conversation.
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