MapR Streams
A global pub-sub event streaming system for big data and IoT

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MapR Streams: Vision

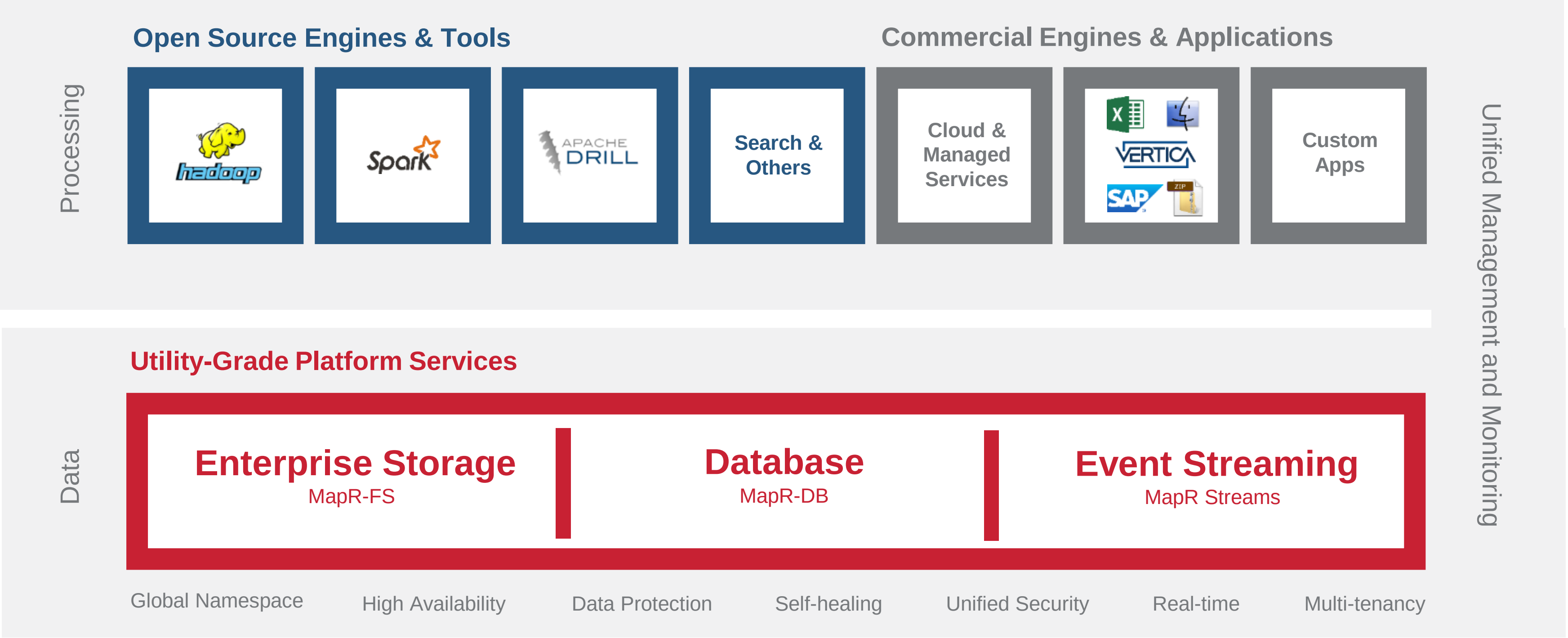
To enable continuous, globally scalable streaming of event data, allowing developers to create real-time applications that their business can depend on.

Converged

Continuous

Global

MapR Converged Data Platform



Processing

Open Source Engines & Tools

Commercial Engines & Applications

Search & Others

Cloud & Managed Services

Custom Apps

Data

Utility-Grade Platform Services

Enterprise Storage
MapR-FS

Database
MapR-DB

Event Streaming
MapR Streams

Global Namespace

High Availability

Data Protection

Self-healing

Unified Security

Real-time

Multi-tenancy

Unified Management and Monitoring

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Big Data is Generated One Event at a Time

“time” : “6:01.103”,
“event” : “RETWEET”,
“location” :
    “lat” : 40.712784,
    “lon” : -74.005941

“time: “5:04.120”,
“severity” : “CRITICAL”,
“msg” : “Service down”

“card_num” : 1234,
“merchant” : ”Apple”,
“amount” : 50

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Batch Processing Has Many Use Cases

YOU ARE HERE

- Customer 360
- Sentiment analysis

- Clickstream analysis
- Predictive maintenance

- Fraud detection
- Coupon offers
- Risk models

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Real-time Processing is Complementary

- Trending now
- News feed

- Ops dashboards
- Failure alerts
- Breach detection

- Real-time fraud detection
- Real-time offers
- Push notifications

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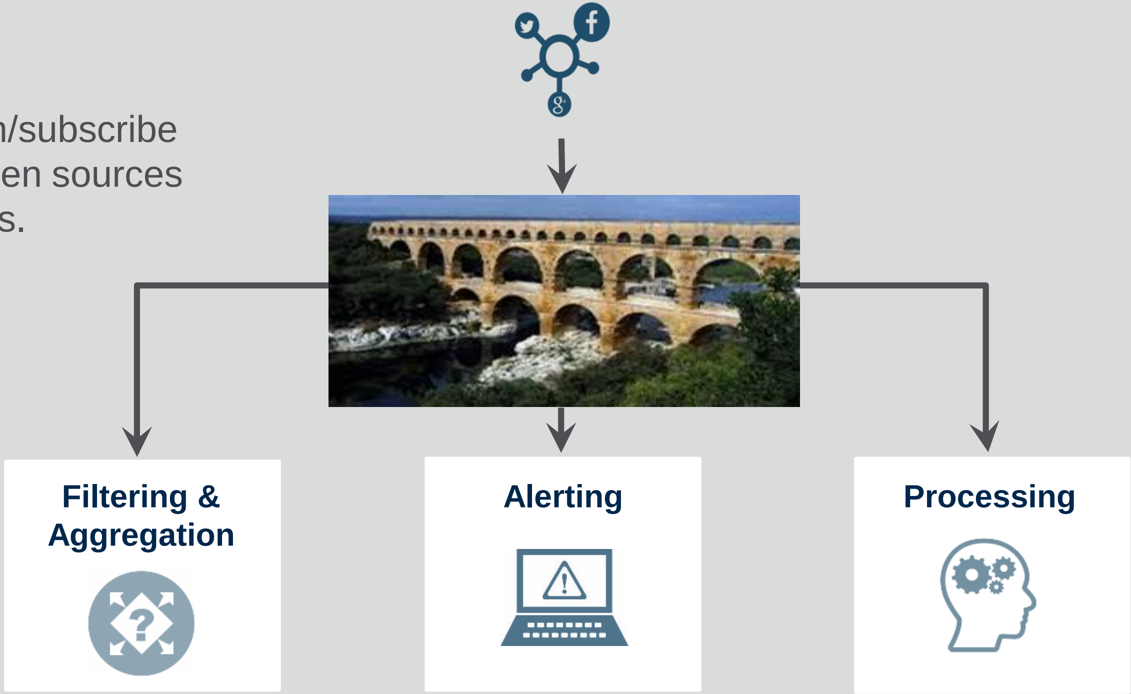
Streams Simplify Data Movement

Streams

Reliable publish/subscribe transport between sources and destinations.



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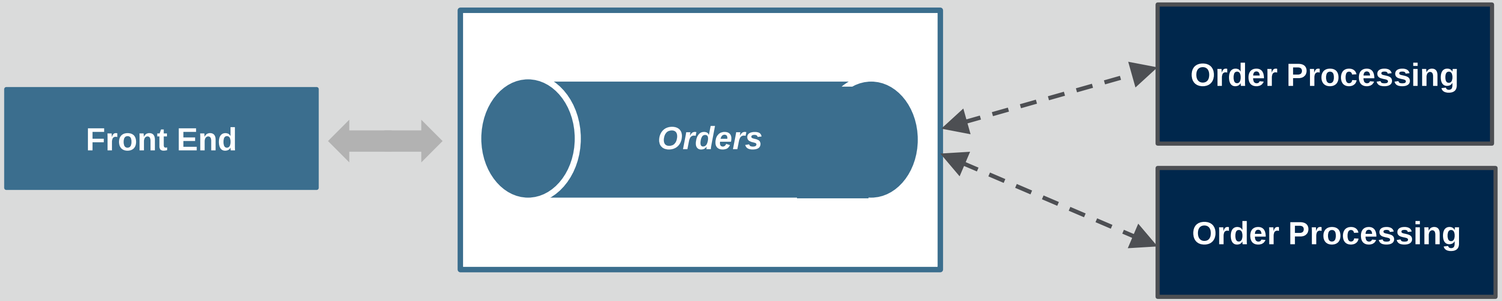
Legacy Systems: Message Queues

IBM MQ, TIBCO, RabbitMQ



Usage/Requirements

- Tight, transactional conversations between systems
- 1:1 or Few:Few
- Low data rates
- Mission-critical delivery

Approach

- Queue-oriented design
  - Each message replicated to N output queues
  - Messages popped when read
- Scale-up, master/slave

Doesn’t Do

- High message rates (>100K/s)
- Slow consumers
- Queue replay/rewind

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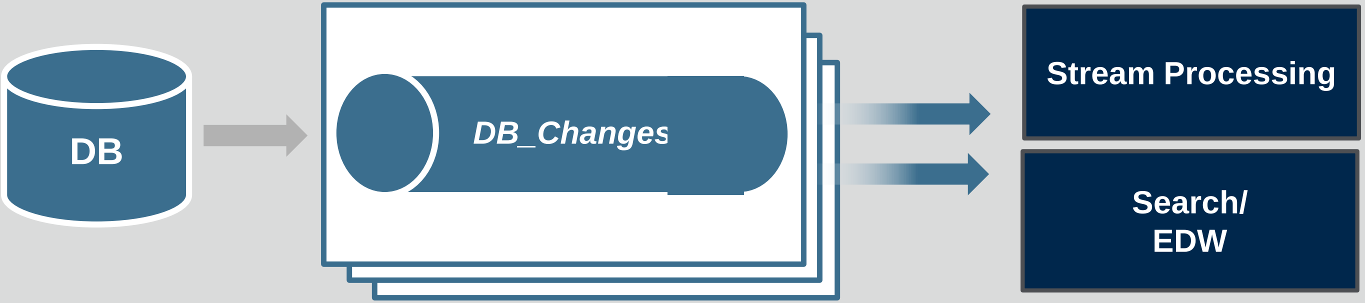
Evolving “big data” Event Streams: Distributed Logs

Kafka, Hydra, DistributedLog



Usage/Requirements

- High throughput data transferred from decoupled systems
  - Many -> 1
  - 1 -> Many
  - Different speeds

Approach

- Log-oriented design
  - Write messages to log files
  - Consumers pull messages at their own pace
- Scale-out

Doesn’t Do

- Global applications
- Message persistence
- Integrated analytics (data movement required)

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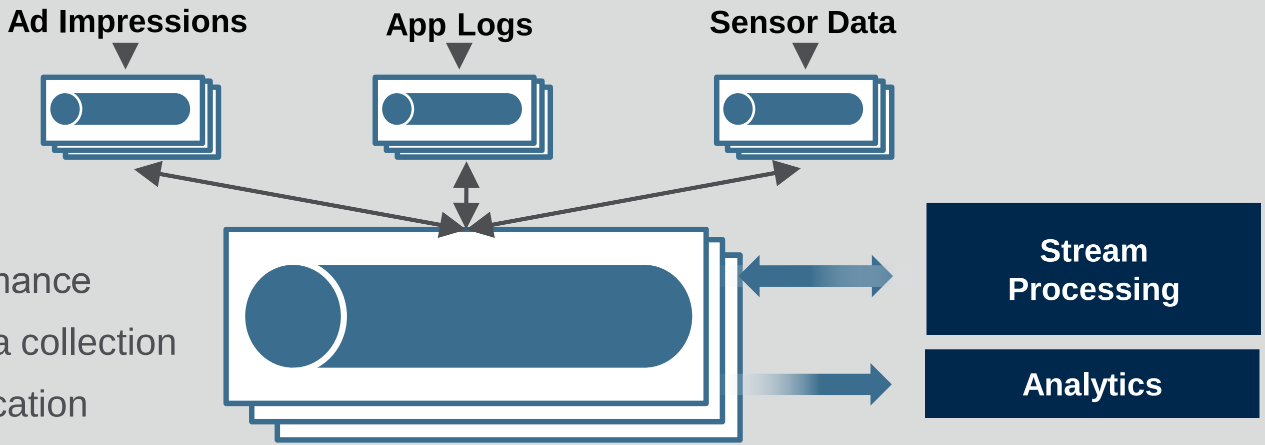
MapR: Rethinking a Platform for Event Streams



- “Big data” scale and performance
- Global applications and data collection
- Multi-tenant and multi-application
- Secure
- Analytics-ready (no movement)
- Converged: no cluster sprawl

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MapR Streams
Converged, Continuous, Global

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MapR Streams:

Global Publish-Subscribe Event Streaming System for Big Data

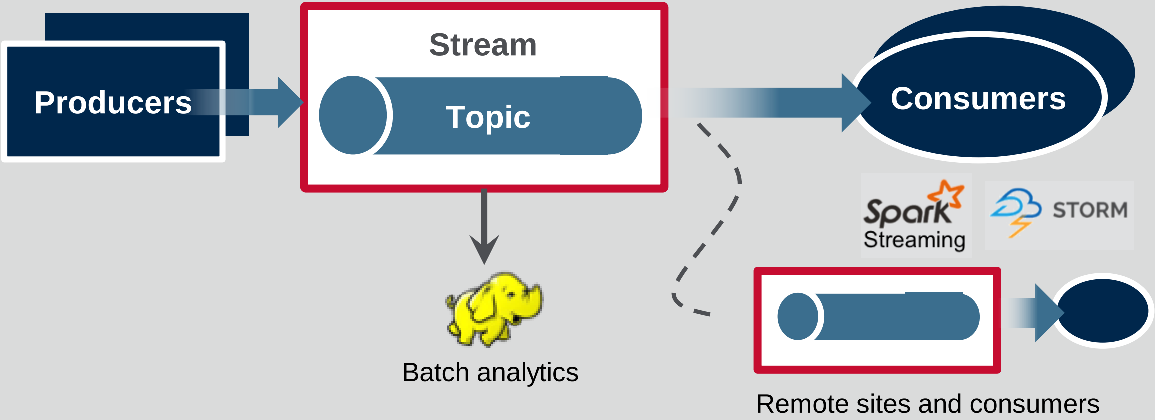
Producers publish **billions** of messages/sec to a topic in a stream.

Guaranteed, immediate delivery to all consumers.

Tie together geo-dispersed clusters. **Worldwide**.

Standard real-time API (Kafka). Integrates with Spark Streaming, Storm, Apex, and Flink

Direct data access (OJAI API) from analytics frameworks.



MapR Streams - Converged, Continuous, Global

Converged

- **Converged platform** with file storage and database
- OJAI API - **Direct access** from analytics tools
- Unified **security** framework with files and database tables
- **Multi-tenant** - topic isolation, quotas, data placement control

Continuous

- **Integrated** with Spark Streaming, Flink, Apex, others
- **Message persistence** for up to infinite time span
- **Guaranteed** delivery (at least once)
- Consistent, synchronous replication & no single point of failure

Global

- Native, **global data and metadata replication** with arbitrary topology
- Millions of streams, 100K topics/stream
- Billions of events per second
- Millions of producers & consumers

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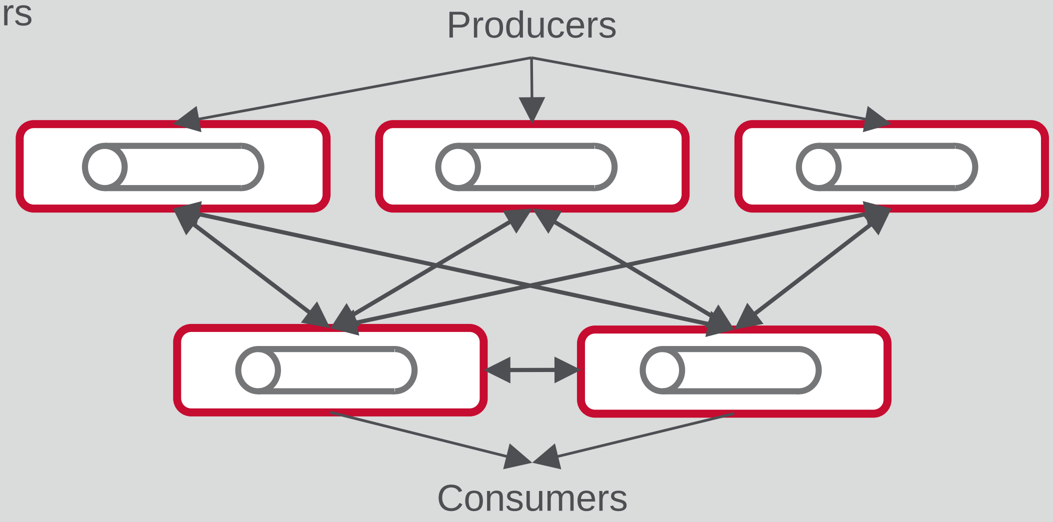
Global

Provides

- Arbitrary topology of thousands of clusters
- Automatic loop prevention
- DNS-based discovery
- Globally synchronized message offsets and consumer cursors

Enables

- Global applications & data collection
- Producer & consumer failover
- Analysis/filtering/aggregation at the edge
- “Occasional” connections



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Top Differentiators

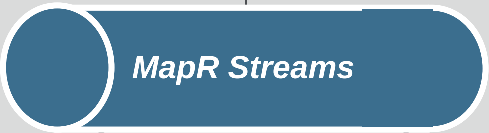
Single cluster for files, tables, and streams.

Global, **IoT-scale** “fabrics” with failover.

Converged

Global

Data persistence and direct data access to batch processing frameworks**.**



Secure & Multi-Tenant

Authentication, authorization, encryption**.** **Unified policy** with all other platform services**.**

Tenant-owned streams, logical grouping of topics and messages**.**

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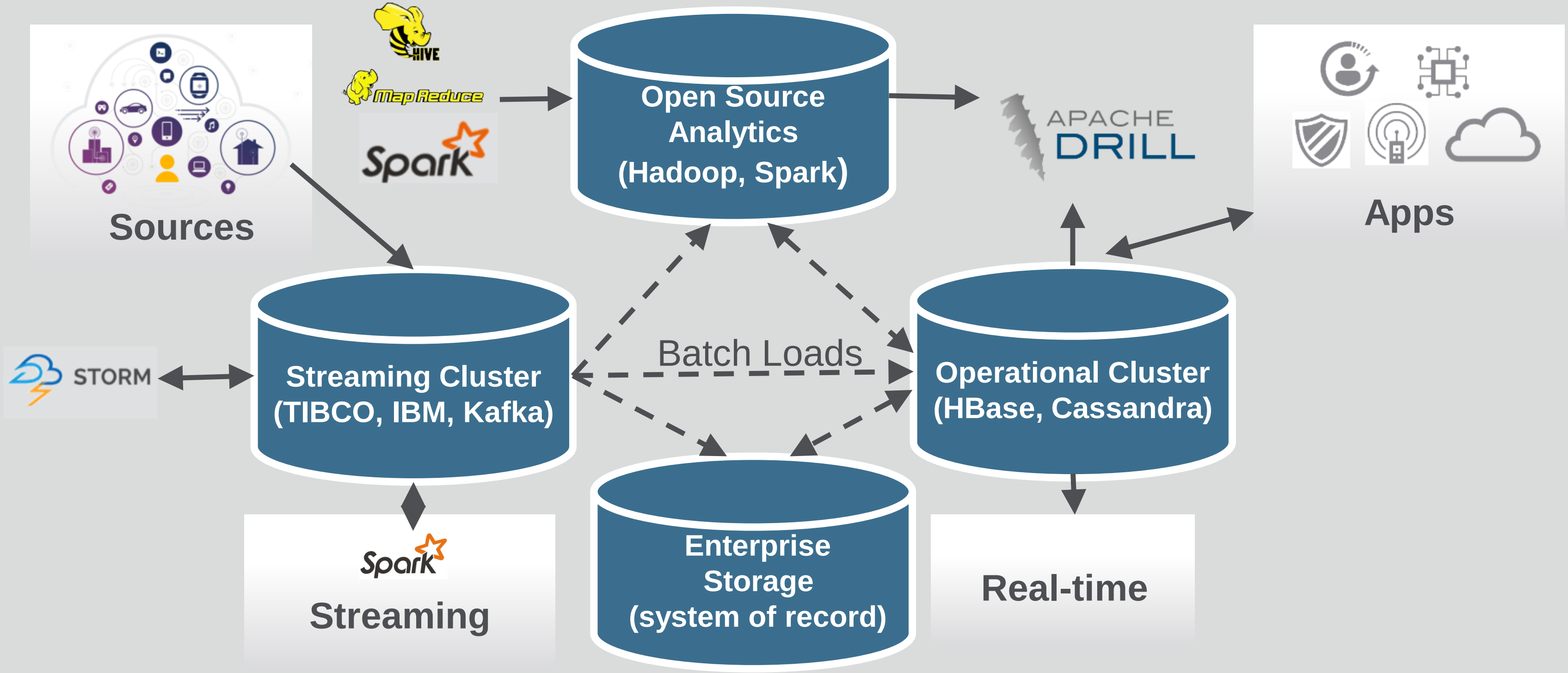
Life Without a Converged Platform


HIVE
MapReduce
Spark
Sources
Open Source Analytics (Hadoop, Spark)
APACHE DRILL
Apps
STORM
Streaming Cluster (TIBCO, IBM, Kafka)
Batch Loads
Operational Cluster (HBase, Cassandra)
Spark
Streaming
Enterprise Storage (system of record)
Real-time

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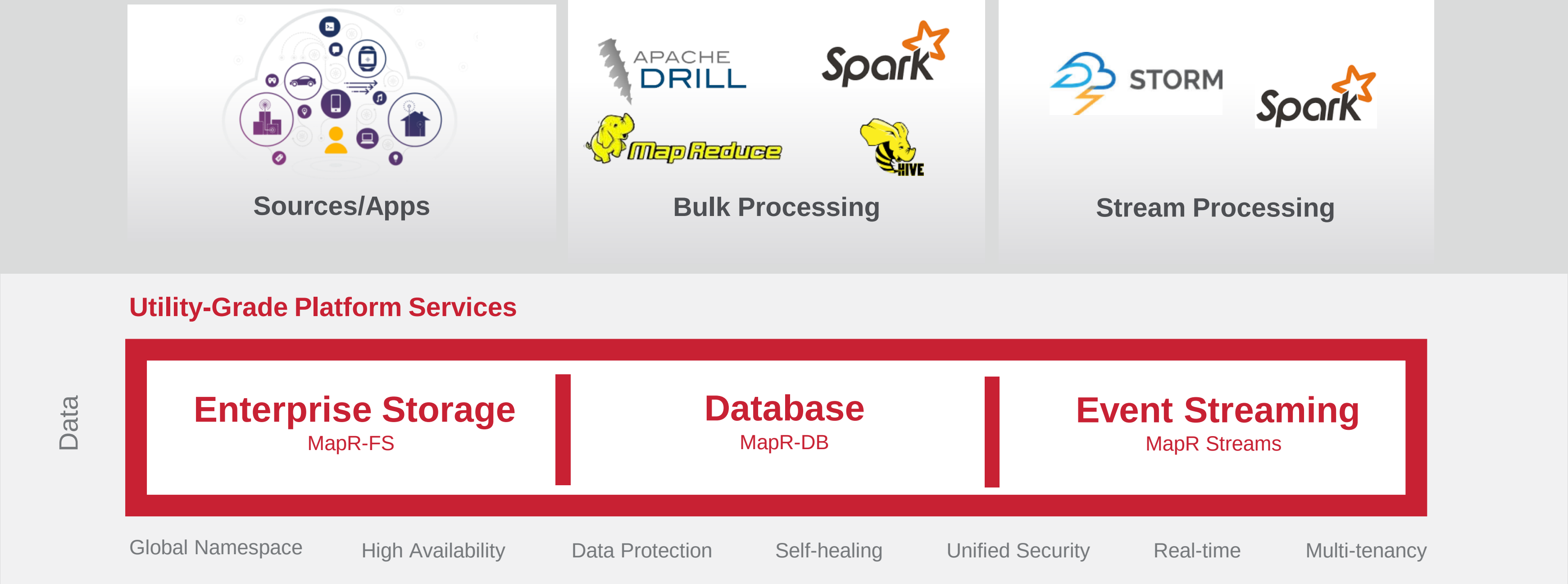
Life With a Converged Platform



Sources/Apps

Bulk Processing

Stream Processing

Utility-Grade Platform Services

Data

Enterprise Storage
MapR-FS

Database
MapR-DB

Event Streaming
MapR Streams

Global Namespace · High Availability · Data Protection · Self-healing · Unified Security · Real-time · Multi-tenancy

Only full-stack “big data” platform.

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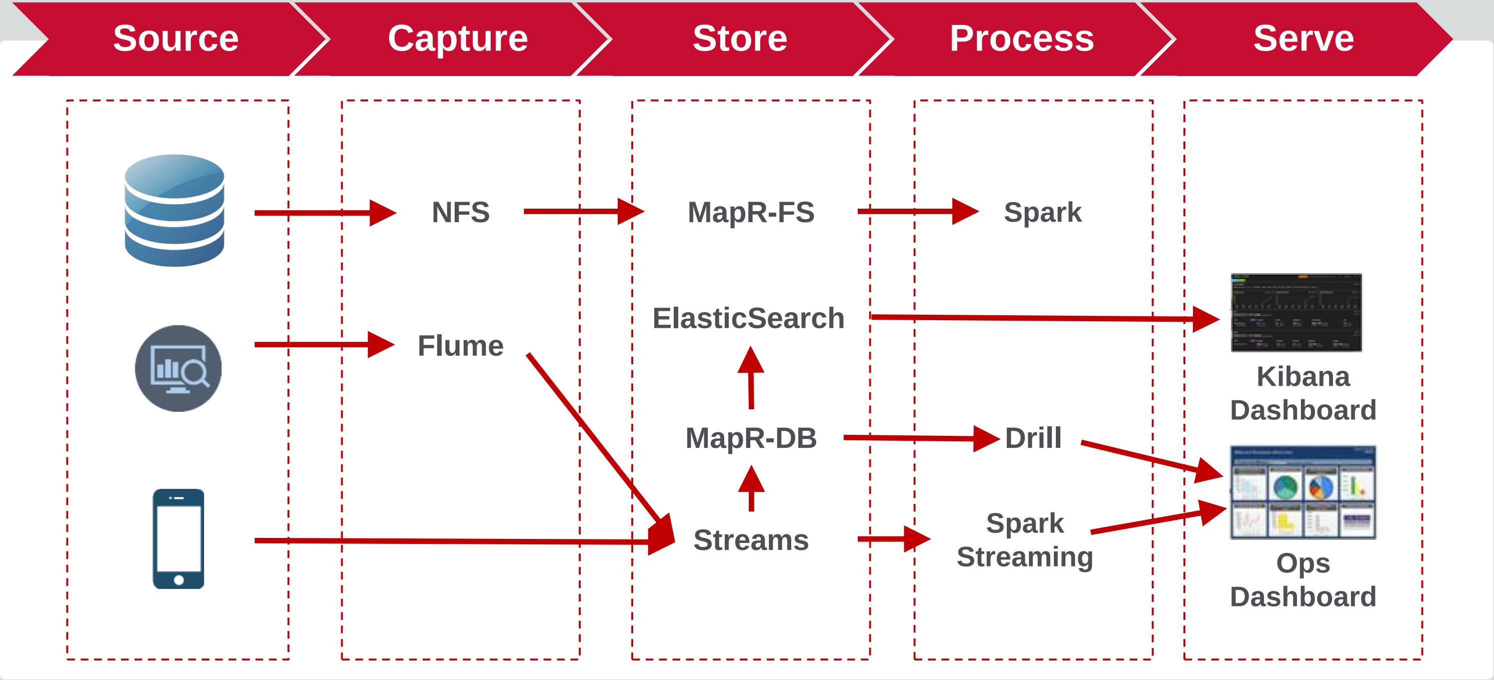
Part of a Converged Reference Architecture



IoT Data Transport & Processing

Business Results

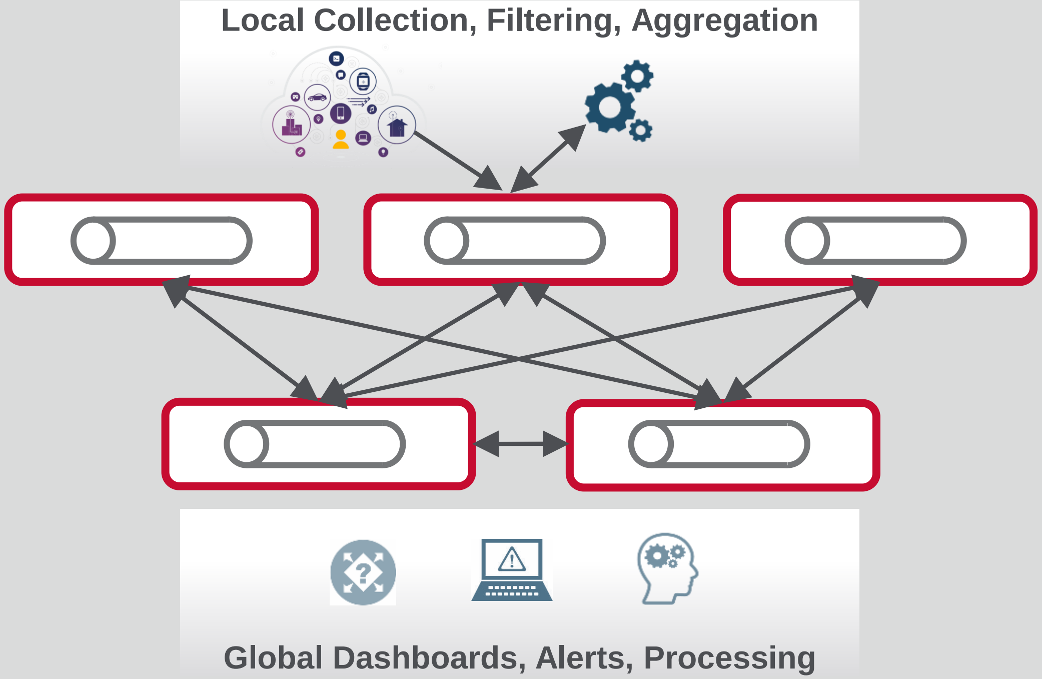
- New revenue streams from collecting and processing data from “things”.
- Low response times by placing collection and processing near users.

Why Streams

- IoT is event-based, and needs an event streaming architecture.

Why MapR

- Converged platform gives single cluster, single security model for data in motion and at rest.
- Reliable global replication for distributed collection, analysis, and DR.



Local Collection, Filtering, Aggregation

Global Dashboards, Alerts, Processing

Q&A

Engage with us!

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