Oracle NoSQL Database and Cisco- Collaboration that produces results
What is Big Data?

VOLUME

VELOCITY

VARIETY

VALUE

SOCIAL

BLOG

SMART METER

187.5
## Why Is It Important?

<table>
<thead>
<tr>
<th>US HEALTH CARE</th>
<th>US RETAIL</th>
<th>MANUFACTURING</th>
<th>GLOBAL PERSONAL LOCATION DATA</th>
<th>EUROPE PUBLIC SECTOR ADMIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase industry value per year by</td>
<td>Increase net margin by</td>
<td>Decrease dev., assembly costs by</td>
<td>Increase service provider revenue by</td>
<td>Increase industry value per year by</td>
</tr>
<tr>
<td>$300 B</td>
<td>60+%</td>
<td>–50%</td>
<td>$100 B</td>
<td>€250 B</td>
</tr>
</tbody>
</table>

“In a big data world, a competitor that fails to sufficiently develop its capabilities will be left behind.”

Source: *McKinsey Global Institute: Big Data – The next frontier for innovation, competition and productivity (May 2011)*
Make Better Decisions Using Big Data
Oracle Integrated Solution Stack

ACQUIRE

HDFS
Oracle NoSQL DB
Oracle Database

ORGANIZE

HADOOP (MapReduce)
Oracle Loader for HADOOP
In-DB MapReduce
Oracle Data Integrator

ANALYZE

Oracle Exadata
In-DB Mining
In-DB ‘R’
OBIEE
Advanced Analytics

DECIDE
Acquire all available, schema-based and non-relational data
Acquiring Big Data Challenge

Application changes frequently

Process high volume, low-density information from various data-sets

With sub-millisecond Velocity
Why NoSQL Database?

USE CASES

- High-throughput event processing
- Customer profile management
- Mobile application backend infrastructure
- Click-through data processing
- Social networks
- Content management
- Archiving

SIMPLE QUERIES

DYNAMIC SCHEMA

HIGH VOLUME DATA
Oracle NoSQL Database
A Distributed, Scalable Key-Value Database

Simple Data Model
Small, distributed footprint
Highly scalable, available
Transparent load balancing
Integrates with Oracle Stack
Oracle NoSQL Database Differentiation

Commercial Grade Software and Support

- General Purpose
- Reliable – Based on proven Berkeley DB JE HA
- Easy to Install & Configure

Scalable throughput and bounded Latency

- Intelligent Oracle NoSQL DB Driver
  - Evenly distributes Data
  - Sends operation to fastest node
  - Bounded network hops for all operations

Simple Programming and Operation Model

- Simple Major + Sub key and Value data structure
- ACID transaction
- Configurable consistency and durability

Easy Management

- Web-based Console and CLI commands
- Manages and Monitors:
  - Topology
  - Load
  - Performance
  - Events
  - Alerts

Integrates seamlessly with Oracle Stack (ODI, CEP, OLH)
Benchmarking on Cisco Hardware

Cisco C210
Dual Socket x64
2.93 GHz (x5670)
Westmere Hexcore
24 Threads
96 GB

16 x 300 GB 10k RPM SAS RAID-0

10 Gigabit Ethernet between all nodes
Benchmarking Configuration

Configurations:
• 3 nodes (Master + 2 Replicas)
• 9 nodes (3 Masters + 6 Replicas)

Records:
• 3 nodes: 400 million
• 9 nodes: 1.2 billion

Client side driver:
• Load: Yahoo! Cloud System Benchmark (YCSB)
• Key: 13 bytes
• Data: 1KB
Benchmarking Results: Extreme Performance

- 1.2 billion records
- 72K insert/sec
- 21K read/update/sec
- Low latency
- Linear scalability