Open Source in Financial Services: Meet the challenges of new business models and disruption
Speakers

- Vamsi Chemitiganti, General Manager Financial Services, Hortonworks
- Josh West, Senior Solutions Architect, Red Hat Financial Services
- Andrew C. Oliver, President & Founder, Mammoth Data
AGENDA

- Why Red Hat, Hortonworks and Mammoth Data?
- Financial Services Industry
- What is Risk Management
- Technical Challenges
- Architecture
- Demo
- Conclusion
RED HAT, HORTONWORKS & MAMMOTH DATA

- Best of breed infrastructure
  - Red Hat Enterprise Linux is the core of most Hadoop installations
  - Hadoop is the force behind big data and modern data analytics

- Complementary products
  - JBoss Data Virtualization
  - JBoss Data Grid

- Expertise needed to make this work
  - Mammoth Data knows how to make Hadoop work for customers
  - Navigate the complexity of the Hadoop ecosystem
  - Create comprehensive data strategies & architectures
CORE INDUSTRY SHIFTS HAPPENING IN BANKING

The core domains, according to our FSI customers:

- Risk management
- Fraud management
- Omni-channel wealth management
- Financial payment systems
- Bank 3.0
- Compliance: Know Your Customer (KYC) and Foreign Account Tax Compliance Act (FACTA)
- Global trading platforms
- Case management
FINANCIAL SERVICES ARE TRANSFORMING

Focused around business and technology vectors:

TECHNOLOGY VECTORS
- Cloud Computing (OpenStack)
- DevOps and PaaS
- Mobility
- Big data and analytics
- BPM and microservices
- Software-defined datacenters

BUSINESS VECTORS
- Regulation and risk management
- Compliance and regulation
- Trading systems
- Omni-channel wealth management
- Legacy Modernization
- Payments Systems

DIGITAL BANK
Bank 3.0
WHAT IS RISK MANAGEMENT

- “Liquidity Risk - financial risk due to uncertain liquidity

- An institution might lose liquidity if it falls, it experiences sudden unexpected cash outflows, or some other event causes counterparties to avoid trading with or lending to the institution.

- A firm is exposed to liquidity risk if markets on which it depends are subject to loss of liquidity.”
CHALLENGES

- Homegrown and proprietary architectures
- Data needs only growing
- Need for open and interoperable architectures
- Need for low latency and high performance
- Easy development, deployment and management
- Ability to integrate seamlessly with rest of IT ecosystem
- Support various deployment model – On Premise/Cloud, etc...
TRADITIONAL SYSTEMS UNDER PRESSURE

1. Challenges
   - Constrains data to app
   - Can’t manage new data
   - Costly to Scale

2. New Data

   Business Value
   - ERP
   - CRM
   - SCM

INDUSTRY LEADERS

2020
40 Zettabytes

LAGGARDS

2012
2.8 Zettabytes

New

Traditional

Clickstream
Geolocation
Web Data
Internet of Things
Docs, emails
Server logs
MODERN DATA ARCHITECTURE EMERGES TO UNIFY DATA & PROCESSING

- Enable applications to have access to all your enterprise data through an efficient centralized platform
- Supported with a centralized approach governance, security and operations
- Versatile to handle any applications and datasets no matter the size or type
Liquidity Risk

- Three data sources, loaded in between HDFS and JDG
- Heterogeneous data
- Well understood problem
- Monte Carlo analysis across a Hadoop cluster against data living in JBoss Data Grid
Not every system can begin with a big ETL or data migration project.

- JBoss Data Virtualization front ending existing sources
  - JBoss Data Grid for fast access to both existing and feeds of data
  - Map Reduce for analysis across both existing and new sources
The financial services industry has used automation and machine learning algorithms for decades.

- Money is not their product. Data is their product.

As an industry we spread the knowledge:

- We don't compete with each other, we compete with Microsoft Excel

Liquidity risk is not I have $100 of IBM, I have $100 at risk

Monte Carlo simulation measures movements over time, and simulates how we might move today.
We need the ability to run a Liquidity Risk Algorithm on our Investment Portfolios at many different intervals:
- Intra Day; End of Day; Weekly; Monthly; Quarterly; Annual

In support of:
- maximizing investment opportunities
- satisfying regulatory capital reserve requirements
HOW IT WORKS
BEST PRACTICES

• Think through your Data Strategy first
• Think through your Data Architecture holistically
  – What are the transition costs, how can they be mitigated
  – What are the long term costs of both new technology and legacy
• Make Data a core competency and not a system side effect
  – Who is making sure you have “one way” to express a concept
BEST PRACTICES (CONTINUED)

- Take a hybrid approach for entrenched legacy technologies
  - ...believe it or not PL/SQL can call a web service
- Don’t play favorites
  - consider operational costs but pick the right technology for the right job!
- Get Help
Summary

- The operative word is “business value”
- Red Hat offers distinct platforms, but this is about solutions
- Opportunity is everywhere
MORE DETAILS

More about Red Hat & Hortonworks
http://hortonworks.com/partner/RedHat/

MAMMOTH DATA
THE LEADER IN BIG DATA CONSULTING

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