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Big Data Encryption for Privacy and Compliance
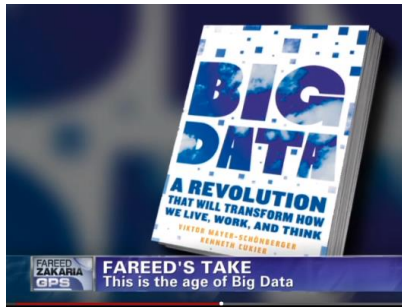
LinuxCon
Sam Heywood, VP Products and Marketing

September 10, 2013

Seen the news lately?

USA TODAY — NEWS · SPORTS · LIFE · MONEY · TECH · TRAVEL · OPINION · 85°

Commentary: Is NSA showing real cost of 'Big Data'?

NEWS ANALYSIS
Is Big Data an Economic Big Dud?
By JAMES GLANZ

BIG DATA
A REVOLUTION THAT WILL TRANSFORM HOW WE LIVE, WORK, AND THINK
VIKTOR MAYER-SCHÖNBERGER · KENNETH CUKIER

FAREED ZAKARIA GPS
FAREED'S TAKE
This is the age of Big Data

THE OBAMA ADMINISTRATION IS INVESTING
$200 MILLION IN BIG DATA RESEARCH PROJECTS.

Wyndham CFO Pursues Pricing Advantage in Big Data

The Economist
The data deluge
AND HOW TO HANDLE IT: A 14-PAGE SPECIAL REPORT

How to Keep Up with Your Quants

In this era of big data, analytics are becoming a competitive necessity (including for risk management), and companies of all industries need general managers who can work effe with "quants" to ensure that their work yields more effective decisions, according to Thom

The whistleblower
I can't allow the US government to destroy privacy and basic liberties
theguardian
guardian.co.uk

Bits

JUNE 1, 2013, 8:00 AM | 31 Comments
Why Big Data Is Not Truth
By QUENTIN HARDY

A Look Inside Medicine's Big Data Revolution - 01:35

LinkedIn connects big data, human resources

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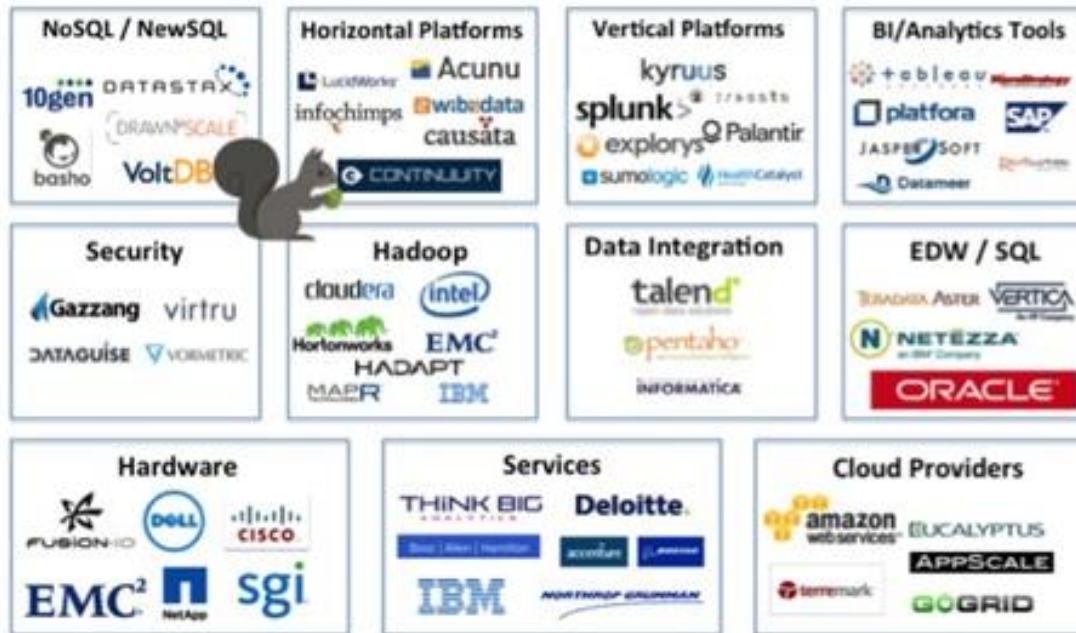# What do we know about Big Data?

- No agreed-upon definition

- ## No agreed-upon definition

Is it about the technology?
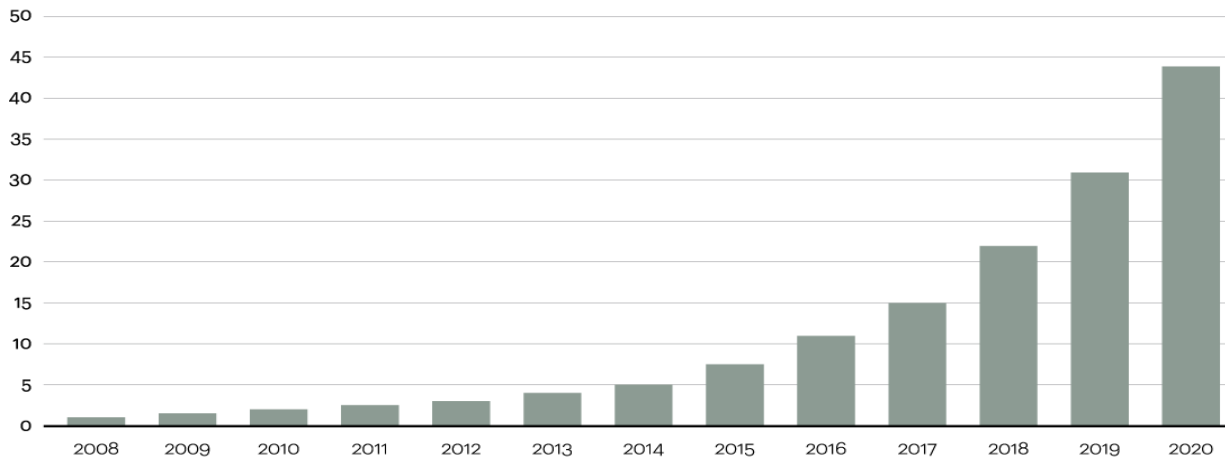

Courstesy Sqrrl Data, Inc.

What do we know about Big Data?

- No agreed-upon definition

Is it about the size of the data?

Data is growing at a 40 percent compound annual rate, reaching nearly 45 ZB by 2020

Data in zettabytes (ZB)

Source: Oracle, 2012

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- No agreed-upon definition

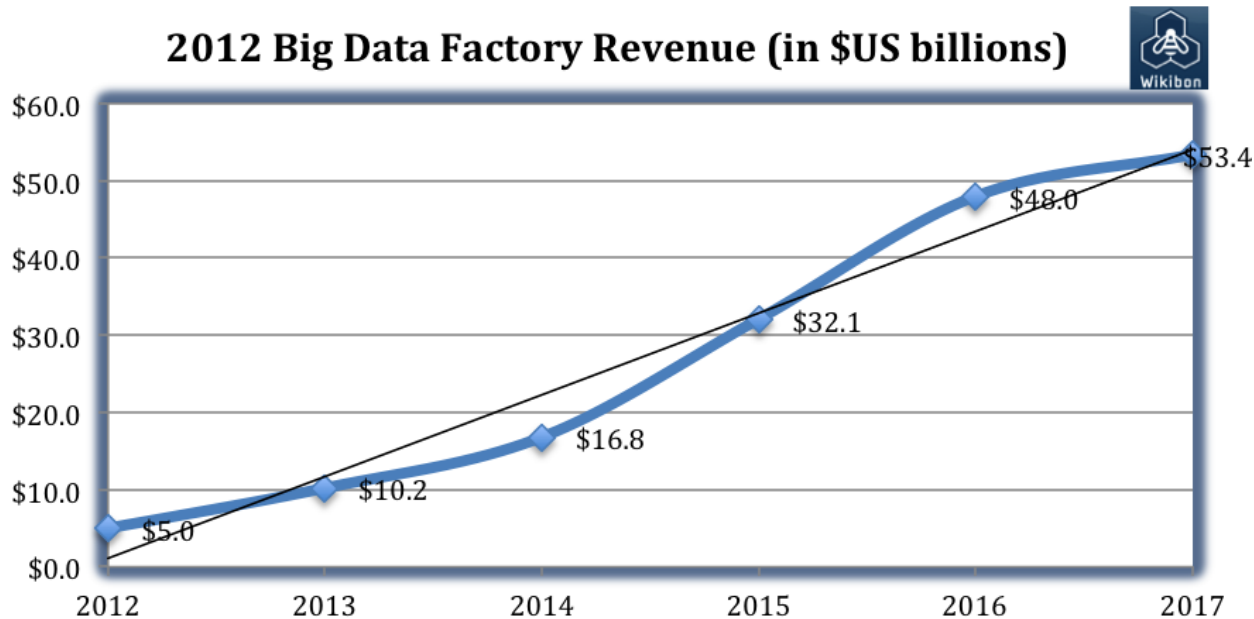Is it about what we do with the data?

- ## The market is enormous

… and growing

2012 Big Data Factory Revenue (in $US billions)

Year	Revenue
2012	$5.0
2013	$10.2
2014	$16.8
2015	$32.1
2016	$48.0
2017	$53.4
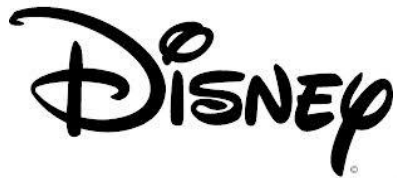
Source: Wikibon 2012

- The market is enormous

Everyone is getting in on the act

- NoSQL often means No Security

Hadoop, Cassandra, MongoDB, etc... were not developed with security in mind

- NoSQL often means No Security

Many projects are being deployed in the cloud, adding another layer of security complexity

- NoSQL often means No Security

Bad news if you're working with sensitive, confidential or regulated data

PII	Customer/Personal Data
HIPPA	Protected Health Information
FERPA	Student Data
SOX	Financial Data
PCI-DSS	Account Information
EU Data Protection	Customer/Personal Data

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- Open Source projects are patching holes
  - Sentry
  - Project Rhino
  - Accumulo
  - Knox

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What's being done to protect Big Data?

- Platform vendors are adding security
  - Authentication
  - Identity Management
  - SSL encryption
  - Some audit features

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What can *YOU* do to protect Big Data?

1. Encrypt Everything Everywhere

2. Set and Enforce Access Controls

3. Manage Digital Security-Related Artifacts

4. Establish Data Security for Hybrid Environments

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1. Encrypt Everything Everywhere

Encrypt data at-rest and on the wire to protect sensitive data and ensure compliance

2. Set and Enforce Access Controls

Protect the keys at the user, role and process levels

Copyright: Paramount Pictures, 1996

3. Manage Digital Security-Related Artifacts

Secure keys, certificates, tokens, passwords in a "virtual safe-deposit box"

4. Establish Data Security for Hybrid Environments

NoSQL data security should be equally effective in public, private and hybrid environments

Copyright: Lucasfilm, ltd

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About Gazzang

- Headquartered in Austin, Texas

- Focus on high-performance data-at-rest encryption and key management

- Specialize in securing cloud and Big Data environments

- Key vertical industries: financial services, healthcare, retail, government, education, technology

- Packaged solutions available for all major Big Data distributions

Gazzang Encryption

Gazzang zNcrypt™ sits between the file system and any database, application or service running on Linux to encrypt data before it's written to the disk.

- AES-256 encryption
- Process-based ACLs
- File and block encryption
- Maximum performance
- Enterprise scalability
- Packaged support for Hadoop, Cassandra, MongoDB and other big data platforms
- Keys protected by 256-bit passphrase/ 16-bit Salt and RSA Keys, certificates, fingerprints, one-time secrets
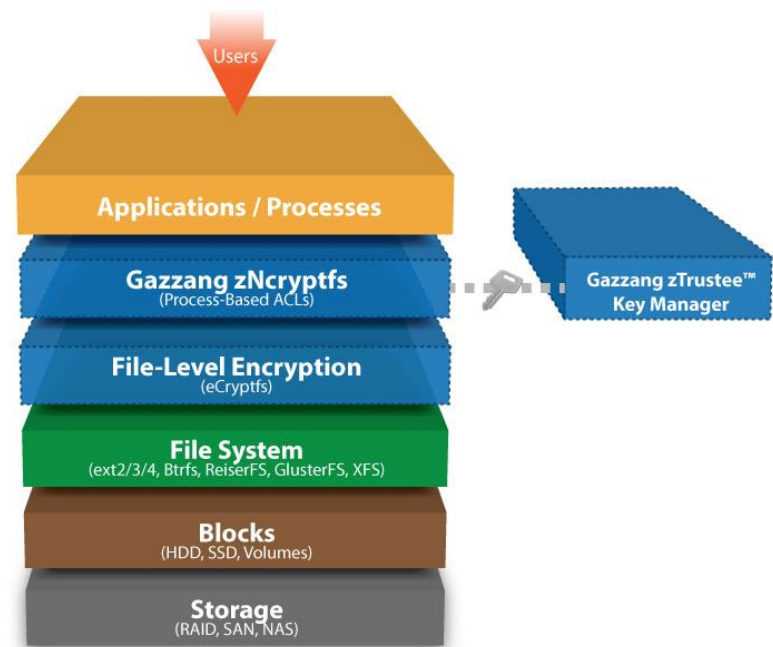
Gazzang Key Management

Gazzang zTrustee™ is a "virtual safe-deposit box" for managing zNcrypt keys or any other digital artifact that must be secure and policy controlled

- Software-based solution separates keys from encrypted data
- Centralized management of SSL certificates, SSH keys, tokens, passwords and more
- Unique "trustee" and machine-based policies deliver multifactor authentication
- Integration with HSMs from Thales, RSA and SafeNet
- Multiple deployment options include on-prem, VPC or hosted SaaS offering
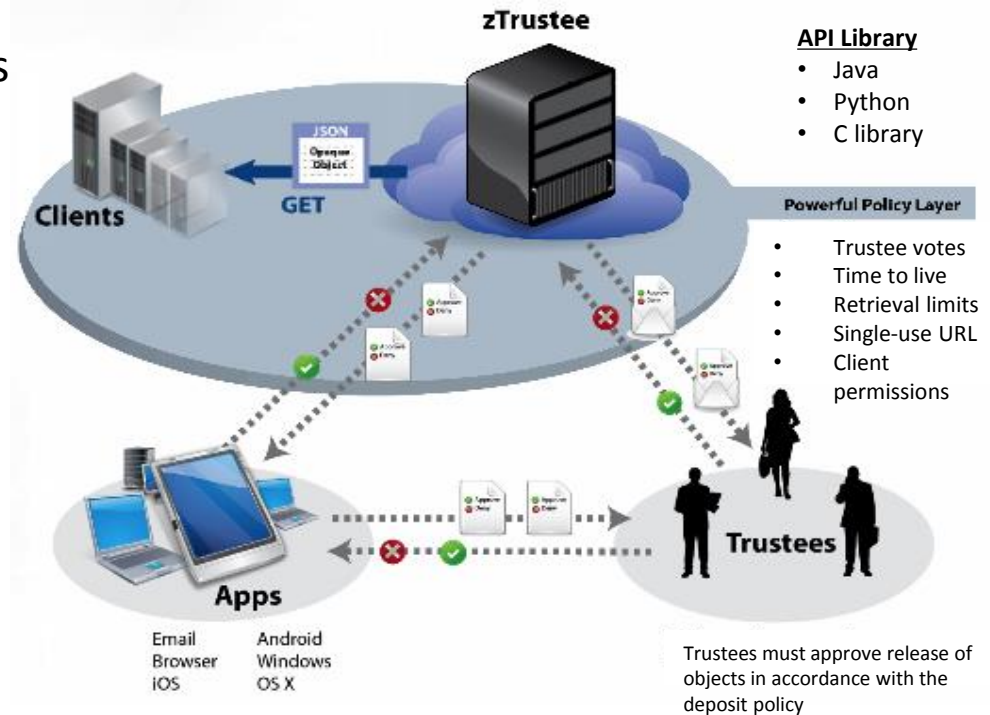
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Questions?

Thank You
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