



YOUR INDEPENDENT HP SOFTWARE COMMUNITY

# Big Data Security: Challenges, Strategies and Tools

April 17, 2014

**Brought to you by**

# **Vivit Security & Privacy Special Interest Group**

**led by Dominic J. Listermann**

[www.vivit-worldwide.org](http://www.vivit-worldwide.org)



# Hosted by



**Akshar Dave**  
SoftNet Solutions  
Big Data Special Interest Group Leader



# Today's Presenter



**Dominic J. Listermann**  
Security+, CSM, CSPO, SAFe Agilist  
CorTechs, Inc.  
Security & Privacy SIG Leader



# Housekeeping

- This “LIVE” session is being recorded
- The recording will be available on BrightTALK immediately after this session
- Q&A: Please type questions in the Questions Box below the presentation screen
- Additional information available for you behind the Attachment button and later on the Vivit website





YOUR INDEPENDENT HP SOFTWARE COMMUNITY

# Big Data Security

Challenges, Strategies and Tools

# Data Is...

Data is...

- everywhere
- enduring
- dangerous
- disruptive
- contextual
- insightful



# What makes Data Big?

- “3Vs” - Volume, Variety and Velocity

Volumes of data with greater levels of variety and complexity are being expanded at ever-increasing velocity.

- Some have added another “V” for Vulnerability.

Original “3Vs” definition was created by analyst Doug Laney in 2001



# Today's Big Data

Billions of connected devices generating and sharing:

- Email
- Blogs
- Social Media
- Images
- Video
- GPS records
- “Shadow Data”



# Usefulness of Big Data

- Big Data can provide insights on customers and partners leading to competitive advantage
- Big Data's usefulness requires it to be captured, stored and analyzed for time-sensitive decision-making and actions
- Big Data's sensitivity demands the capability to protect highly distributed infrastructures and data



# Big Data Security Challenges

- Heartbleed Bug
- PII
- Smart Grids
- GPS records
- Cloud

“Big data has been around forever.”

-Ernie Hayden, SearchSecurity, RSA 2012



# Big Data Insecurity Implications

- Increased Government Regulations and Compliance Requirements
- Security Breach reveals
- Loss of critical data
- Loss of customer trust
- Decreased willingness to share data
- Reduced competitive advantage



# Big Data Security Strategies

Big Data hand-offs or moves cross vulnerable junctions.

- Process data where it resides whenever possible
- Work with trusted partners
- Properly vet employees
- Remove, replace and or obscure PII and other sensitive data



# Big Data Security Strategies

## Deidentification techniques:

- Anonymization – removes names, address and social security numbers
- Pseudonymization – replaces PII with identifiers
- Encryption
- Key-coding – encodes PII and provides key for decoding
- Data sharding – breaks off part of the data



# Big Data's Hidden Vulnerabilities

## GPS Records

- Have been used to gather a lot of identifying information about a person or persons, such as:
  - Names
  - Addresses
  - Behavioral Patterns

Keith Carter, Big Data World Asia 2013 Conference



# Big Data's Hidden Vulnerabilities

## Context and Contamination

- Analysis without the human element can lead to decisions based on:
  - Incomplete information
  - Non-contextual information
  - Otherwise contaminated information
- Example: Jobs and Unemployment Rate

“Lists of key words, curated by human beings work OK for the short run, but tend to fail catastrophically over the long run.”

Gary King, Harvard University, Institute for Quantitative Social Science





# Where Big Data Security is Going

## Predictive Analysis

- Increased ability to predict threats by connecting disparate pieces of information to produce actionable intelligence
- Shift from reactive to predictive model
- Discover threats to protect customers, employees and data

Dan Hubbard, OpenDNS, <http://www.netrepid.com/big-data-security-issues-concerns-problems>



# Big Data Tools

“Humans are creatures of habit, and habits are blatantly obvious when run through an algorithm.”

Tracey Wallace, Big Data Needs to Work Toward Security Solutions Now Before It's Too Late, April 15, 2014.

If entities want to continue gathering information from customers, partners, etc., they must:

- Protect PII and other sensitive data
- Ensure completeness, accuracy and context
- Maintain transparency
- Work toward predictive rather than reactive responses to threats



# Big Data Tools

## HAVEn Platform & Ecosystem

Hadoop/  
HDFS

Catalog massive  
volumes of distributed  
data

**H**

Autonomy  
IDOL

Process and index all  
information

**A**

Vertica

Analyze at extreme  
scale in real-time

**V**

Enterprise  
Security

Collect & unify  
machine data with  
ArcSight Logger

**E**

nApps

Powering HP Software  
+ your apps

**n**



Social  
media



Video



Audio



Email



Texts



Mobile



Transactional  
data



Documents



IT/OT



Search engine



Images

<http://www.hp.com/haven>

# Q & A

If you have questions, please type and send them in using the Questions Box below the presentation screen.



# HP Discover Las Vegas 2014

- **Vivit needs your assistance.** We would like to be one of the largest groups with members attending this event.



**Las Vegas | June 10–12**

- Here's how you can assist:
  - [Register now](#) and **enter code swvivit** to enjoy a \$300 discount and ensure that you receive Discover information tailored to your needs.
  - Please encourage all Vivit members to use code **swvivit** when registering. [Registration](#) can be done via Vivit's website through the banner ad or the community calendar.



# Thank you

[www.vivit-worldwide.org](http://www.vivit-worldwide.org)



A close-up photograph of a hand holding a small, translucent blue globe of the Earth. The globe is semi-transparent, showing the continents in a darker shade of blue. The hand is positioned from the bottom left, supporting the globe from underneath.

YOUR INDEPENDENT HP SOFTWARE COMMUNITY

[WWW.VIVIT-WORLDWIDE.ORG](http://WWW.VIVIT-WORLDWIDE.ORG)