Operational Intelligence and Learning Analytics

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Splunk

Splunking:
   to explore underground caves

Splunking:
   to explore large amounts of machine data (volume at velocity)
Splunk Company Overview

Company
- Global HQs:
  - San Francisco
  - London
  - Hong Kong
- 1,400 employees globally
- Annual Revenue: $450.9M (YoY +49%)
- NASDAQ: SPLK

Products
- Free trial to massive scale
- Splunk products:
  - Splunk Enterprise
  - Splunk Cloud
  - Hunk
  - Splunk MINT
  - Premium Apps

Customers
- 9,000+ customers
- Across 100 countries
- Small to large organizations
- 75+ of the Fortune 100
- Largest license:
  - 400+ Terabytes/day
Industry Recognition

Splunk named one of the World’s most innovative companies

- Ranked #1 Big Data Innovator 3 years in a row
- Ranked #9 Most Innovative Company

Fast Company's Most Innovative Companies Issue (March 2015)
500+ Educational Institutions Use Splunk
Splunk Overview
Big Data Comes from Machines

Volume | Velocity | Variety | Variability

GPS, RFID, Hypervisor, Web Servers, Email, Messaging, Clickstreams, Mobile, Telephony, IVR, Databases, Sensors, Telematics, Storage, Servers, Security Devices, Desktops
What Does Machine Data Look Like?

**Sources**
- Order Processing
- Middleware Error
- Care IVR
- Twitter

**Order Processing**
ORDER, 2014-05-21T14:04:12.484, 10098213, 569281734, 67.17.10.12, 43CD1A7B8322, SA-2100


05/21 16:33:11.238 [CONNEVENT] Ext 1207130 (0192033): Event 20111, CTI Num: ServID: Type 0:19:9, App 0, ANI T7998#1, DNIS 5555685981, SerID 40489a07-7f6e-4251-801a-13ae51a6d092, Trunk T451.16
05/21 16:33:11.242 [SCREENPOPEVENT] SerID 40489a07-7f6e-4251-801a-13ae51a6d092 CUSTID 10098213
05/21 16:37:49.732 [DISCEVENT] SerID 40489a07-7f6e-4251-801a-13ae51a6d092

Twitter

{actor:{displayName:"Go Boys!!",followersCount:1366,friendsCount:789,link: "http://dallascowboys.com/",location:{displayName:"Dallas, TX",objectType:"place"},objectType:"person",preferredUsername:"B0ysF@n80",statusesCount:6072},body:"Can't buy this device from @ACME. Site doesn't work! Called, gave up on waiting for them to answer! RT if you hate @ACME!!",objectType:"activity",postedTime:"2014-05-21T16:39:40.647-0600"}
If machine data contains critical insights...

Sources
- Registrar System
- Middleware Error
- Help Desk
- Twitter

![Diagram with labeled data points]

ORDER,2013-05-21T14:04:12.484,10098213,569281734,67.17.10.12,43CD1A7B8322,SA-2100


05/21 16:33:11.238 [CONNEVENT] Ext 1207130 (0192033): Event 2011, CTI Num:ServID:Type 981, DNIS 5555685981, SerID 40489a07-7f6e-4251-801a-13ae51a6d092, CUSSTID 10098213
05/21 16:33:11.242 [SCREENPOPEVENT] SerID 40489a07-7f6e-4251-801a-13ae51a6d092
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Disruptive Approach to Unstructured Data

1980-2010

- Schema at Write
- SQL
- ETL

Structured RDBMS

2010+

- Schema at Read
- Search
- Universal Indexing

Unstructured

Volume | Velocity | Variety

1980-2010 to 2010+

ETL

Universal Indexing
Splunk Use Cases in Universities
Insights Deliver Improved Student Experience

KEY PRIORITIES

- Continuously develop and deploy apps
- Embrace cloud and mobile
- Move to software defined infrastructure
- Execute on new business initiatives
- Ensure 100% uptime for critical apps
- Manage services, not silos
- Identify & mitigate advanced threats
- Prevent fraud
Which Students are attending
Facilities Used
Property Management
Data Driven User Experience

- Mobile Web version of our student portal
- Focused on providing timely, actionable information to our students
- Based on a student's situation and the time of the quarter we dynamically display, hide, move, and reorder content
Where are users coming from?
Cheating on LMS Tests
Student engagement tracking

Search returned no results

Search returned no results

view: 23.3h
Why Splunk?

- FAST TIME-TO-VALUE
- ONE PLATFORM, MULTIPLE USE CASES
- VISIBILITY ACROSS STACK, NOT JUST SILOS
- ASK ANY QUESTION OF DATA
- ANY DATA, ANY SOURCE OR DEPLOYMENT MODEL
The Power of Splunk

- Collect data from anywhere
- Search and analyze everything
- Gain real-time operational intelligence

splunk>
Apps & Capabilities for Business Analytics

Apps, Features & Partners

- DB Connect
- Stream
- ODBC Driver
- Data Models
- Pivot
What are they using it for?

- Cybersecurity
- Physical security
- Academic integrity
- Financial security

Source:
Interviews with the top 20 university (not-for-profit) accounts at Splunk

Observations:
- Go wide, then think about cost-sharing
- R1? Think 200gb+
How can it help us in higher ed?
R&D or Teach Splunk?

- 5Gb Annual Tutorial License
- 1Tb R&D license 3Yrs.

Internal Teaching

- Splunk Text book
- Splunk Curriculum based on Text Book
- Splunk Higher Ed user Group


Source: McKinsey Global Institute, May 2011: Big data: The next frontier for innovation, competition, and productivity
The 6th Annual Splunk Worldwide Users’ Conference

- **September 21-24, 2015**
  - The MGM Grand Hotel, Las Vegas
  - 4000+ IT & Business Professionals
  - 2 Keynote Sessions
  - 3 days of technical content
    - 165+ sessions
  - 3 days of Splunk University
    - Sept 19-21, 2015
    - Get Splunk Certified
    - Get CPE credits for CISSP, CAP, SSCP, etc.
    - Save thousands on Splunk education!
  - 60+ Customer Speakers
  - 60+ Splunk Speakers
  - 35+ Apps in Splunk Apps Showcase
  - 65 Technology Partners
  - Ask The Experts and Security Experts, Birds of a Feather, Chalk Talks and a new & improved Partner Pavilion!
  - RSVP at conf.splunk.com
  - Call for Papers through May 8th
Questions?