

Big Data for IT Operations

Omer Trajman | June 1, 2015



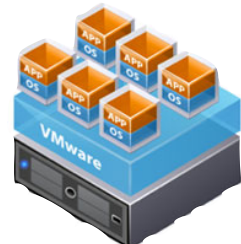
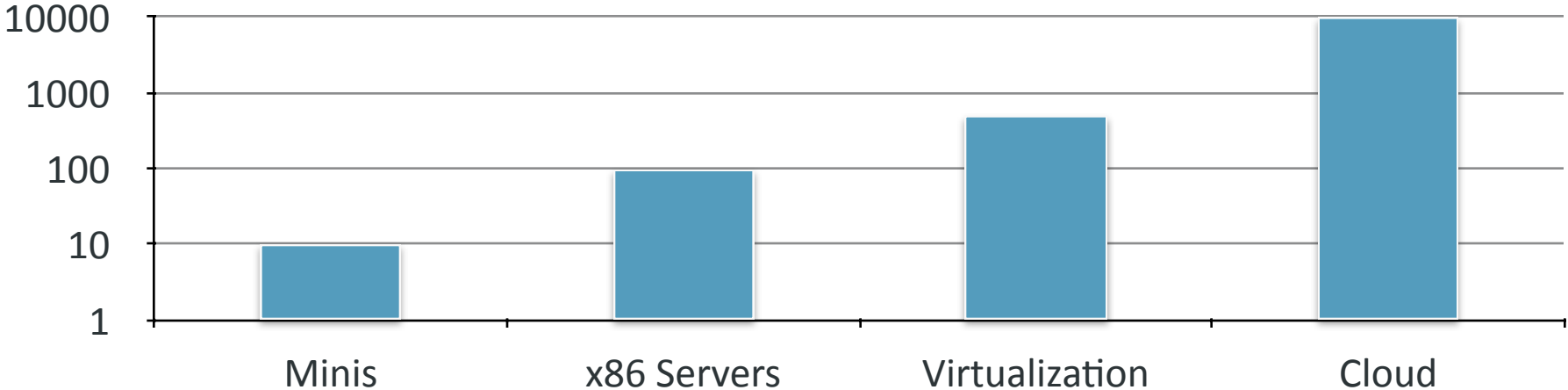


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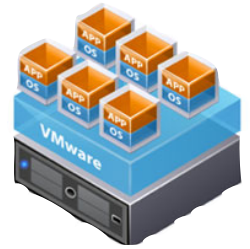
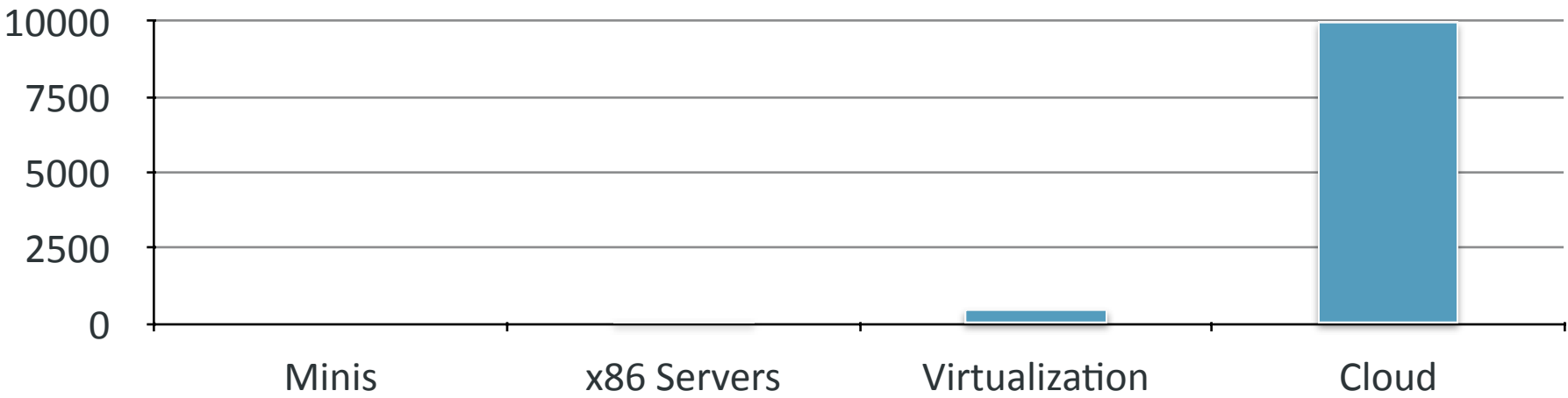
VERTICA

Evolution of IT

Systems Under Management per Organization (log)



Systems Under Management per Organization



Other Complex Systems



High Frequency Trading

Big Data Solutions

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To Keep Up w/ the IoE. See How!

Hadoop in 1 Click

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Top 7 Big Data Trends

www.tableau.com/big-data ▾

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Big Data on Windows

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node Hadoop clusters on Windows.

AT&T Networking Exchange

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Technology - From Industry Experts.

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Big data

Ad Targeting



Smith Optics I / O Recon...

★☆☆☆☆ (1)

\$17.50 - \$57.50 ✓Prime

Some options are Prime eligible

EasyAcc® Apple iPhone 5C...

★☆☆☆☆ (3)

\$5.99 ✓Prime

Ibex Outdoor Clothing
Men's...

★☆☆☆☆ (4)

\$84.95 - \$85.00

CanaKit Raspberry Pi Micro
USB...

★☆☆☆☆ (54)

\$7.99 ✓Prime

Navor 2 in 1 iPhone 5 5S
Folio...

★☆☆☆☆ (40)

\$29.50 ✓Prime

Kootek® Micro USB Powe
Supply...

★☆☆☆☆ (30)

\$7.99 ✓Prime

Personalized Recommendations



JBtek® Jet Black Case for...

★☆☆☆☆ (151)

\$8.89 ✓Prime



Bosch VAC003 35mm hose-
to-1-1/2...

★☆☆☆☆ (23)

\$6.97 ✓Prime

GoPro HERO3: White Edition
~...

★☆☆☆☆ (641)

\$199.99 ✓Prime

ShopVac 9013700 Reusable
Disc...

★☆☆☆☆ (69)

\$7.13 ✓Prime

Linear WD500Z-1 Z-Wave
500-watt...

★☆☆☆☆ (89)

\$34.95 ✓Prime



iPazzPort Raspberry Pi Mini...

★☆☆☆☆ (659)

\$14.99 ✓Prime

Visualizations

Line charts with scrubbers and annotations



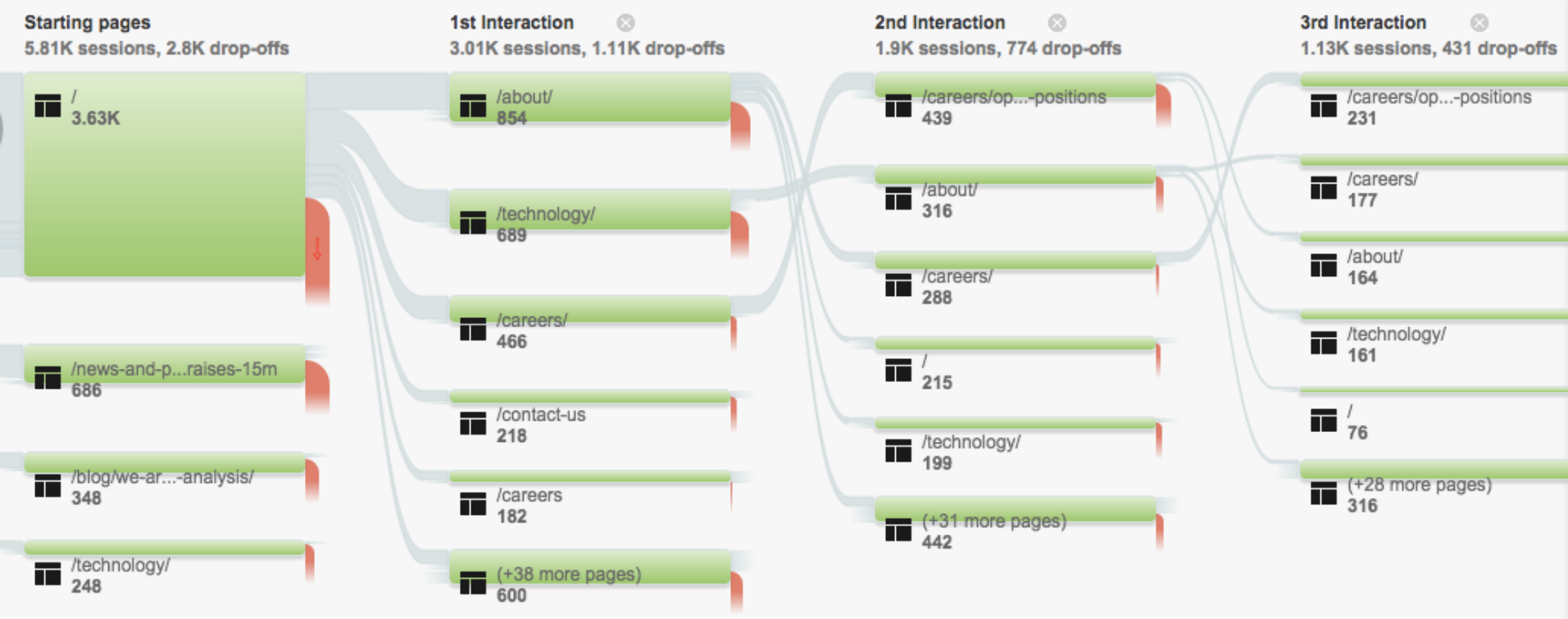
[Link to this view](#)

News

Relevance | Date

- A** [US STOCKS-Dow, S&P 500 in record territory after release of Fed minutes](#)
Reuters UK - 1 hour ago
- B** [10 S&P 500 Companies to Have the Biggest Profit Growth in 2015](#)
TheStreet.com - 7 hours ago
- C** [What Is the S&P 500 Index?](#)
Motley Fool - 4 hours ago
- D** [S&P 500 Trades Flat as Crude Oil Closes Below \\$58](#)
TheStreet.com - May 19, 2015
- E** [How the Dow Jones Industrial Average Fared on Tuesday](#)
ABC News - 23 hours ago
- F** [George Soros Increases His S&P 500 Put Position](#)
Seeking Alpha - 11 hours ago
- G** [S&P 500 Movers: LUV, CVC](#)
Forbes - 5 hours ago

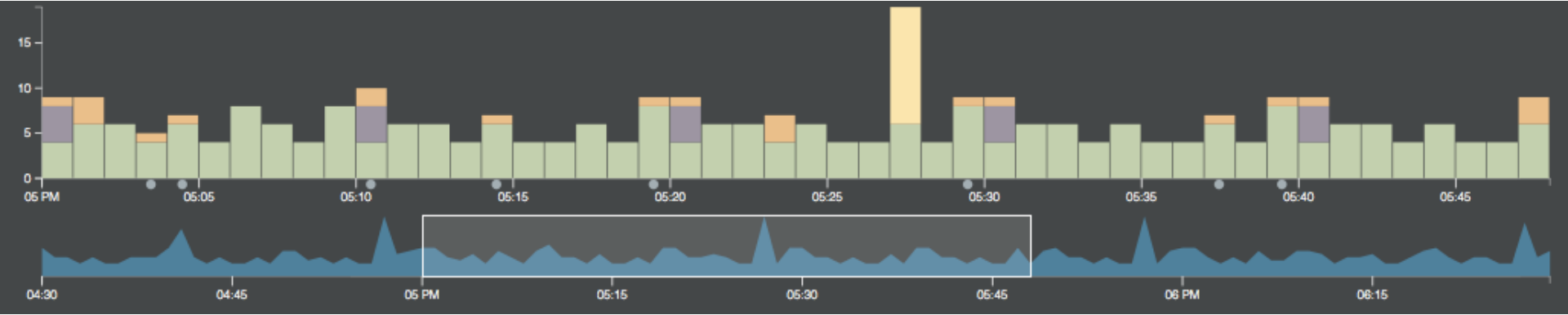
Dynamic flow charts



Swim lane bar charts

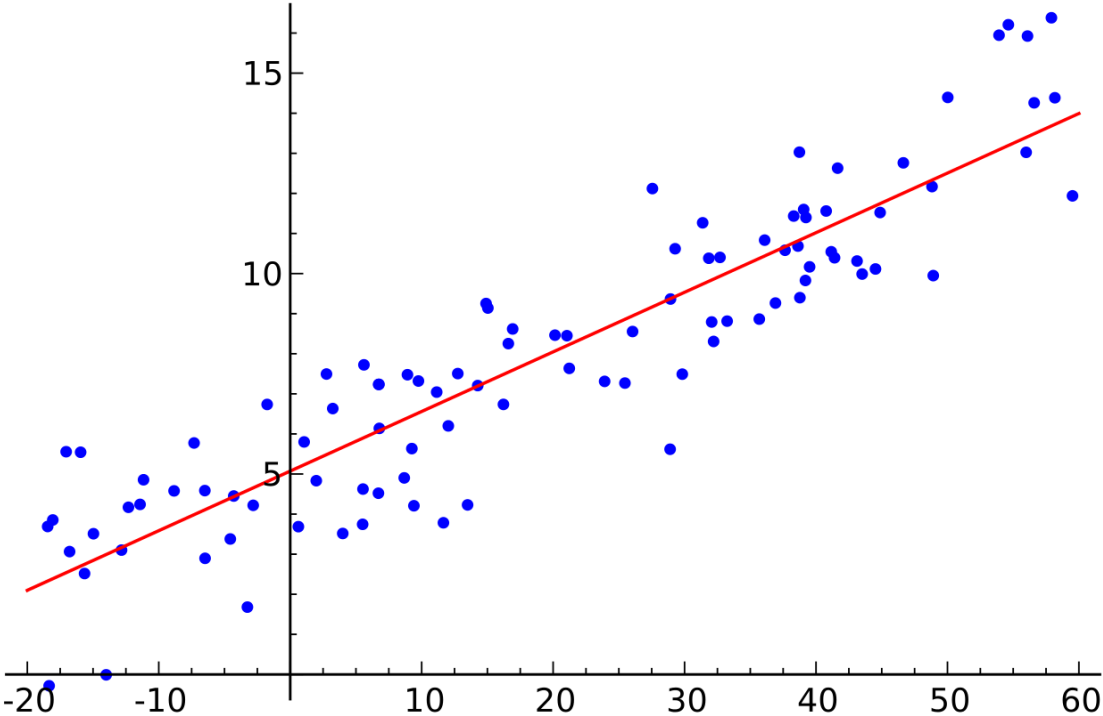


Stacked bar charts with annotations

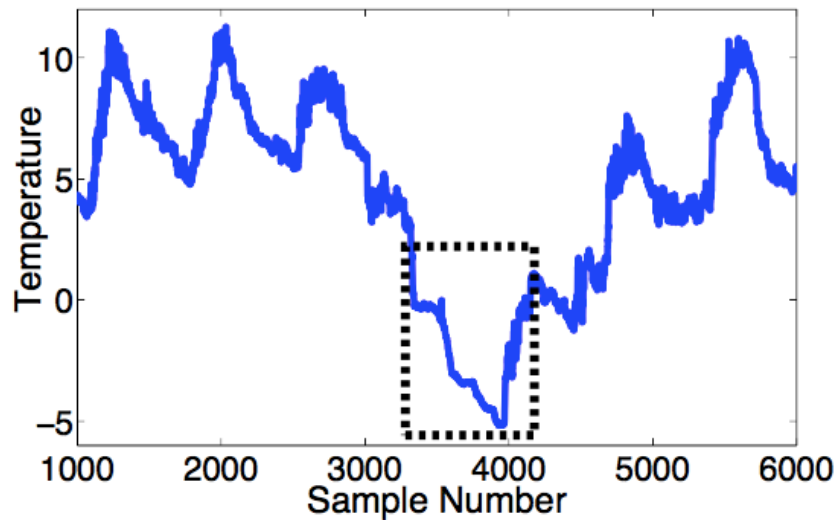


Machine Learning Techniques

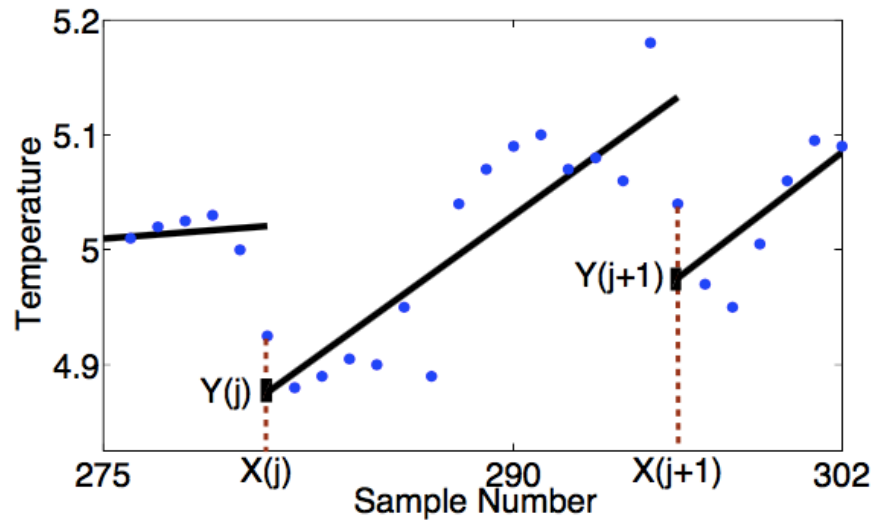
Linear Regression



Piecewise Linear Regression



(a) Long duration anomaly



(b) Piecewise linear model for time series data

Results

From the Field

- Detect spikes in network service activity (possible abuse or attack)
- Visually highlight [anti-]correlated behaving systems
- Identify clusters (and changes) of systems that communicate
- Automatically component database (critical in elastic infrastructure)
- Correlate system behavior and changes (user X on system Y)

Learn More...

- <http://www.rocana.com/blog>
- <http://bit.ly/smedata-talk>
- @otrajman and @rocanainc

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