



The JUNIPER Project

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Unlocking the Potential of Big Data

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CS35L Software Construction

Big Data

- Complex and large data sets that traditional databases and software applications are not entirely adept to handle
- TYPES:
 - Unstructured Data 
 - Multi-Structured Data 
- 4 V's (IBM)
 - Volume, Velocity, Veracity, Variety

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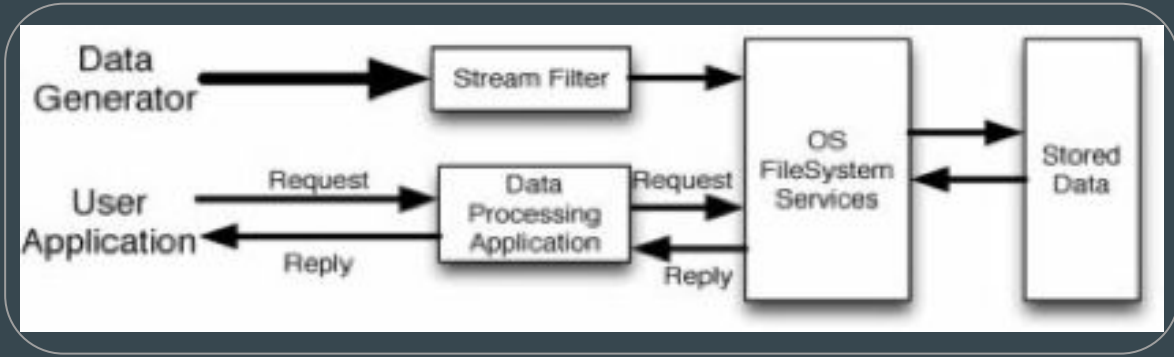
CHALLENGE:

- Data traffic volumes expected to grow 12x by 2018
- Mobile networks seen 5,000% in data traffic

JUNIPER PREMISE:

- Development/Testing of prototype technologies
- Goal: Smarter and more efficient means

Big Data Processing



- Data Generator
 - Streams of Data
 - Filter & Storage
- Client Requests by Application
 - Produce a reply back to the end user

The JUNIPER Approach & Results



Approach

- Java Platform
 - Exploit streaming I/O, parallelism, and optimization.
 - Insufficient resources set aside, sufficient resources focused
- “Application processes such that real-time constraints can be met”

Results

- Series of software developments published on Github ‘Juniper-Project’
- Platform, MongoDB, JamaicaVM

Big Data in Today's World

- Amazon tracking customer history to recommend products



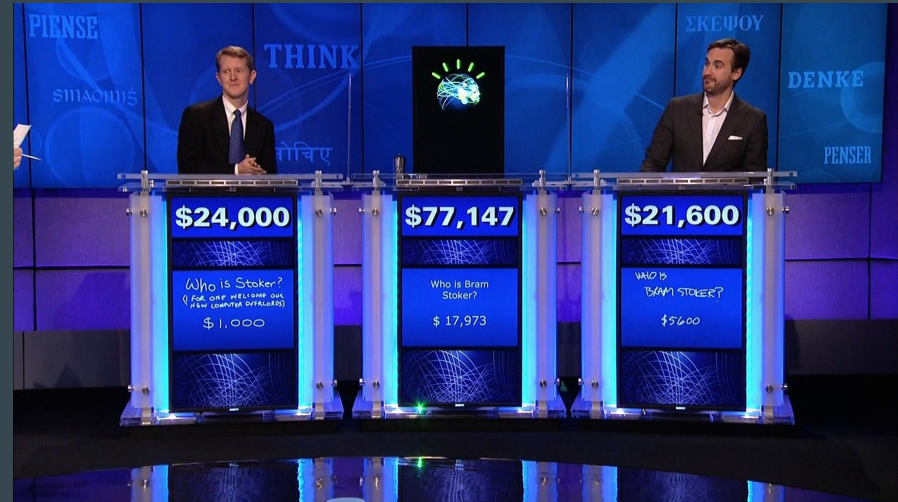
- Chevron saves 1 billion per year from uncovering real-time product optimization

Big Data's Potential on the Horizon



“The data is not yet there to support a fully autonomous vehicle.” – Elon Musk

Watson Jeopardy!



References

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- [7] "Elon Musk Says Tesla Vehicles Will Drive Themselves in Two Years." Fortune Elon Musk Says Tesla Vehicles Will Drive Themselves in Two Years Comments. N.p., 21 Dec. 2015. Web. 17 Feb.