



it's about time

Kx, kdb+ and q – An Introduction

Seoul AI Meetup - 17 March 2018

Kate Jory

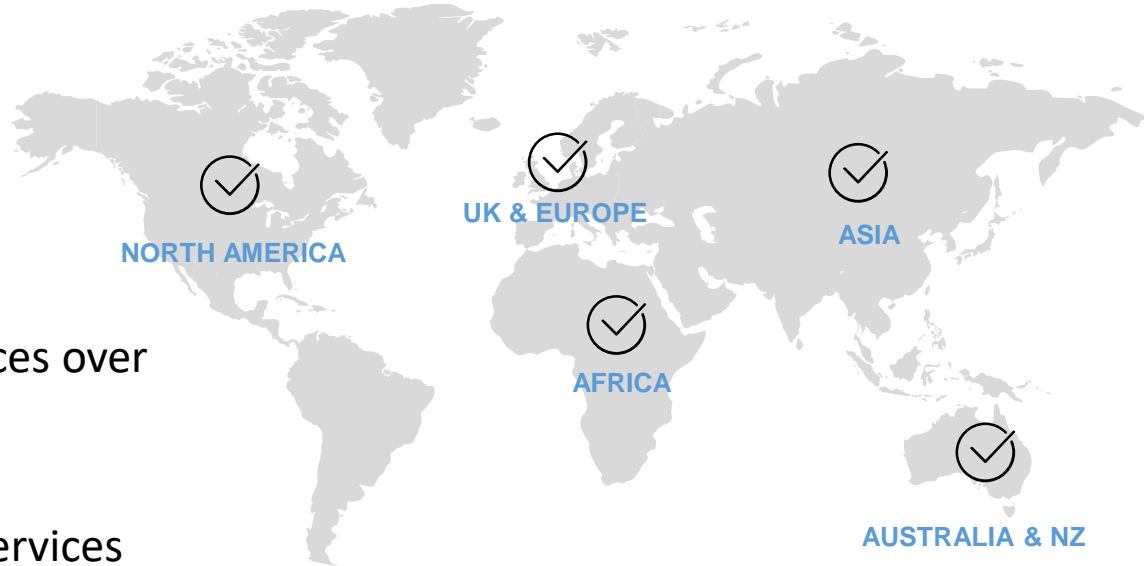
International Business Director – South Korea



About us



- Subsidiary of First Derivatives plc - Listed on LSE & AIM
- 15 Global Offices Inc. NYC, Singapore, London, Tokyo & Hong Kong
- 2100 Employees and growing...
- Large user community



- Widely adopted in financial services over two decades
- Software & industry solutions, consulting and implementation services

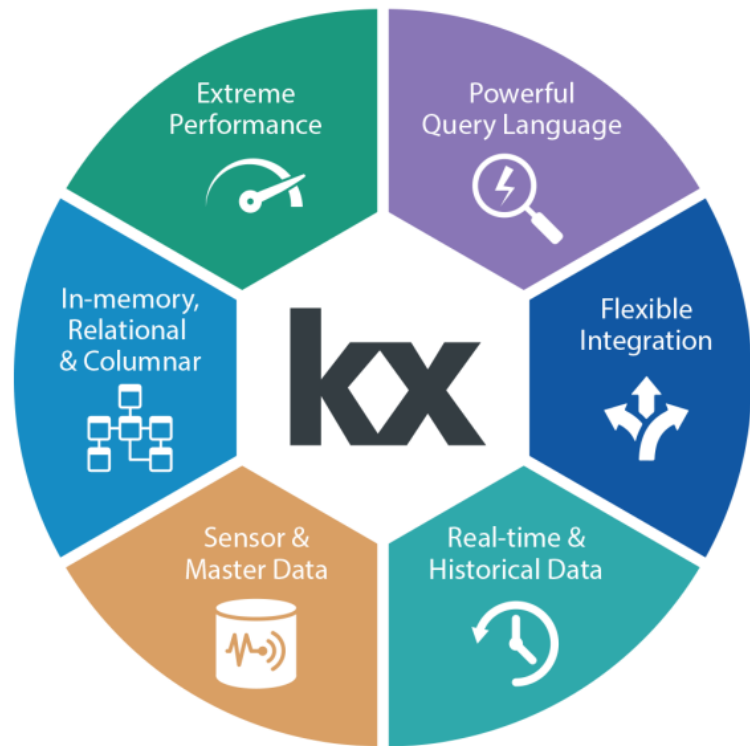
Who Uses Kx Technology – Sample Clients



About kdb+

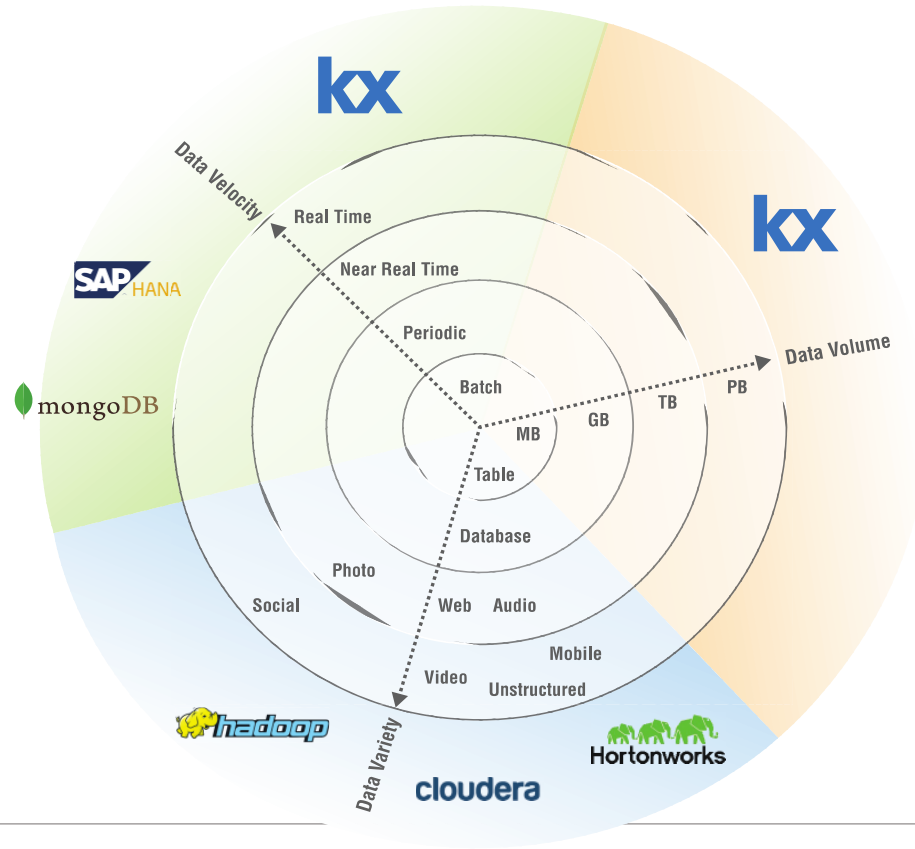


- High-performance database
- Streaming, real-time & historical data
- In-memory & CEP engine
- Parallelism; Map-Reduce
- Interfaces
- Native time series functions
- Small footprint (500Kb)
- Flexible deployment - Cloud, on-prem, hybrid
- Commodity hardware
- Storage agnostic
- Edge



Where do we fit in the big data landscape?

kdb+ column based time-series database with in-built programming language q



Performance

- *Utilises unified programming/query language across the entire system, q*
- Columnar structure database simplifies indexing and speeds search performance
- CEP as well as parallelism and in-database analytics

Scalability

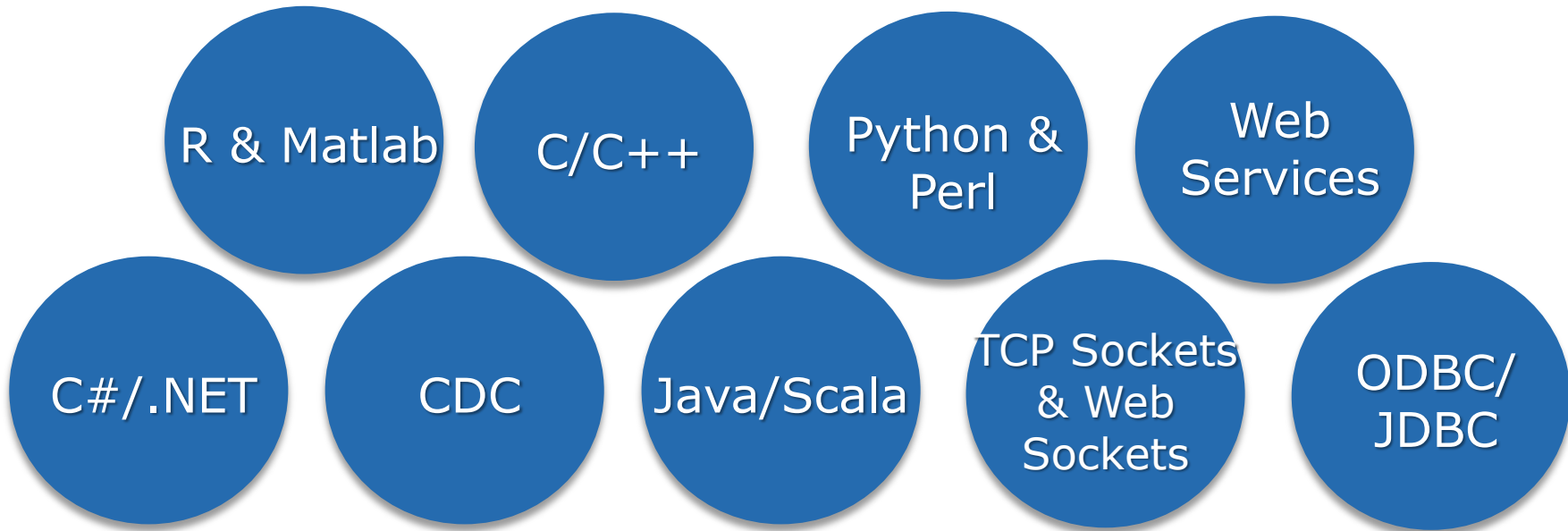
- *Performance is not affected by size increases – scales linearly*
- Compression of historical data on the column level - up to 10x
- Interoperability and the ability to fit into any level of the technology stack

Lower TCO

- *Full solution, requires less developers and maintenance*
- Tiny Footprint, 10-50x less computing infrastructure require
- Highly adaptable and interoperable with existing architectures

Streaming	Process and store 4.5 million data points/second/core
Scan	Search in-memory tables at 4 billion records/second/core
Batch	Ingest data at 10+ million records/second/core
Store	Accumulate 10 trillion data points (3 PB) for NYSE data
Usage	Trusted by 17 of the 20 world's top investment banks
Volume	Daily volumes of 1.6 TB of streaming data per day
Scale	From Raspberry Pi, edge devices, to 20,000 cores on AWS Cloud
Performance	Top performing time-series database according to STAC Research
Footprint	Tiny 500 KB memory profile (L1/2 Cache)
Latency	Sub-millisecond latency for streaming event processing

- PyQ allows developers to integrate Python and q code seamlessly in one application
- EmbedPy library opens Python to q programmers by allowing q to call Python functions.



Kx TECHNOLOGY FUND



Kx Tech
Access



£10 Mil
Funding



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Access



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Marketing
Support



Logistical
Support



Learn more at www.kx.com/kx-technology-fund/

Seeking Financial Engineers, Data Scientists and Software Engineers

- Opportunities to travel and live internationally
- Intensive workshops in highly sought after kdb+ programming skills
- Competitive salary, accommodation and expenses package
- Health and travel insurance programme

Interested in joining us or know someone who might be?

Talk to me at the end or visit

www.firstderivatives.com/careers

Contact Information



Kate Jory
Business Development Director, South Korea
+82-10-7271-2093
kjory@kx.com

www.kx.com

Additional Resources & URLs



Company web-site: www.kx.com

STAC benchmarks: <https://stacresearch.com/kx>; includes independently verified benchmarks of the technology using common capital markets use cases.

Intel solution brief: <http://www.intel.com/content/www/us/en/processors/xeon/real-time-financial-analysis-with-kx-systems-brief.html>

Gartner paper on Kx technology: <https://kx.com/gartner-download.php>

IESO case study: <https://kx.com/media/2017/03/IESO-Case-Study.pdf>

NYC Taxi use case: <http://insidehpc.com/2016/12/kx-streaming-analytics-demo-easily-crunches-1-2-billion-nyc-taxi-data-points-using-standard-intel-xeon-phi-platform/>

Kx Wiki: <http://code.kx.com/q>