Reconfigurable Accelerator Platform with FPGAs

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**FPGAs are great multi-function accelerators**
- In-line acceleration
- Offload acceleration

**Turnkey FPGA Acceleration**

Data Store Examples:
- Relational DB Storage Engine
- Cassandra Proxy
- Parallel File System with HDFS APIs

**Integrate to Intel® Framework and APIs**
- Run unmodified customer applications
- Orchestration run-time advantage: Intel Xeon® processors or Intel FPGAs
- End-to-end security and virtualization framework

**Data Analytics**

FPGAs offer unique value for analytics or streaming

Integrate to Intel® Framework and APIs
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**Significant Acceleration**
- PCIe lookaside acceleration
- Networking + streaming + data access
- Inline acceleration and protocol acceleration
- Compression, filtering, encryption
- Fast lookups/Hashing

**Machien Learning Inference**

Integrate to Intel® Deep Learning Toolkit
- Run TensorFlow, Caffe, etc. frameworks
- Breakthrough for reduced precision floating point
- Deep learning lower precision floating point
- Emerging machine learning networks

**Genome Sequencing**

FPGA Acceleration in GATK
- Targets PairHMM full integration

**Conclusions**

Run turnkey applications for significant FPGA Acceleration
- 15X+ Real Time Data Analytics
- 2X+ Data Warehousing
- 4X+ Cassandra
- Emerging machine learning networks

Leverage the Intel® Programmable Acceleration Card with Intel Arria® 10 GX FPGA
- Learn more at https://www.altera.com/solutions/acceleration-hub/platforms.html

**Disclosures**

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Source: Microsoft. With retraining, FP8 delivers similar scoring accuracy as FP16.