Adaptable Accelerator Cards for Data Center Workloads

OVERVIEW
Xilinx® Alveo™ U280 Data Center accelerator cards are designed to meet the constantly changing needs of the modern Data Center. Built on the Xilinx 16nm UltraScale™ architecture, Alveo U280 offers 8GB of HBM2 up to 460 GB/s bandwidth to provide high-performance, adaptable acceleration for memory-bound, compute intensive applications including database, analytics, and machine learning inference.

The U280 acceleration card includes PCI Express 4.0 with CCIX support to leverage the latest server interconnect infrastructure for high-bandwidth, low latency, cache coherent shared memory access with CCIX host processors.

Alveo accelerator cards are adaptable to changing acceleration requirements and algorithms, capable of accelerating any workload without changing hardware, and reduce overall cost of ownership.

Enabling Alveo accelerator cards is an ecosystem of Xilinx and partner applications for common Data Center workloads. For custom solutions, Xilinx’s Application Developer Tool Suite (SDAccel™ tool) and Machine Learning Suite provide the frameworks for developers to bring differentiated applications to market.

HIGHLIGHTS
Fast – Highest Performance

- Up to 3000X higher throughput than CPUs² on key workloads such as Key-Value-Store
- Over 8X faster response time for database SQL TPC-H Query 5³

Adaptable – Accelerate Any Workload

- Database search to natural language processing to any workload using the same accelerator card.
- As workload algorithms evolve, use reconfigurable hardware to adapt faster than fixed-function accelerator card product cycles

Accessible – Cloud ↔ On-Premises Mobility

- Deploy solutions on the cloud or on-premise interchangeably, scalable to application requirements
- Applications available for common workloads, or build your own with the Application Developer Tool

1: On U280 production cards, U280 ES cards support up to 410 GB/s
2: Algo-Logic Key Value Store throughput on U280 vs Xeon class server
3: Measured on U280 ES1
**Product Brief**

**Xilinx Alveo U280**

**PERFORMANCE**

*Supercharge Your AI and Database Applications with Xilinx’s HBM-Enabled UltraScale+ Devices Featuring Samsung HBM2*

**FEATURES**

<table>
<thead>
<tr>
<th>FEATURES</th>
<th>ALVEO U280</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peak INT8 TOPs</td>
<td>24.5</td>
</tr>
<tr>
<td>HBM2 Memory Bandwidth</td>
<td>460GB/s</td>
</tr>
<tr>
<td>DDR Memory Bandwidth</td>
<td>38GB/s</td>
</tr>
<tr>
<td>Internal SRAM Bandwidth</td>
<td>30TB/s</td>
</tr>
<tr>
<td>Look-Up Tables</td>
<td>1,079K</td>
</tr>
<tr>
<td>PCI Express</td>
<td>Gen4 x8 with CCIX</td>
</tr>
<tr>
<td>Thermal Options</td>
<td>Passive or Active</td>
</tr>
</tbody>
</table>

*Algo-Logic Key Value Store throughput on U280 vs Xeon Class Server*

**TAKE THE NEXT STEP**

Visit [www.xilinx.com/u280](http://www.xilinx.com/u280) for more information.

*Measured on U280 ES1 with SQL TPC-H Query 5*