

Intel FPGAs Go Mainstream

Written by Marco Attard
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The adoption of Field Programmable Gate Arrays (FPGAs) in servers is going mainstream, Intel claims-- both Dell EMC and Fujitsu are putting Arria 10 GX Programmable Acceleration Cards in off-the-shelf datacentre servers.



As Intel puts it, "FPGAs are the foundation for a new type of datacentre with the versatility and speed to handle a variety of workloads." Customers can customise FPGAs post-manufacturing to act as accelerators, particularly for tasks making heavy use of parallel processing such as machine learning, specialised financial applications, video transcoding and genomics. Currently such workloads are handled by GPUs, but FPGAs allow developers to close unused gates to optimise the amount of power a specific task requires.

Chipzilla got the technology through the [June 2015 acquisition of Altera](#) , a custom-design semiconductor manufacturer. As well as the Arria 10 product line, Altera has the Stratix FPGA line, built using the Intel 14nm tri-gate process (as opposed to the TSMC 20nm planar process used in the Arria 10).

However customising FPGAs poses something of a steep learning curve-- it requires knowledge of Hardware Description Languages (HDLs). Enter software stacks complementing the chips, such as the Intel FPGA SDK for OpenCL, the Quartus Prime Pro Edition software and the Acceleration Stack for Intel Xeon CPU with FPGAs offered with the Arria 10 GX cards. For customers without in-house development teams Intel also works on software solutions with 3rd party developer partners, such as Levyx and Swarm 64.

The Dell EMC and Fujitus servers with Arria 10 GX cards are validate for Red Hat Linux 7.4 and CentOS 7.4, and are available now.

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