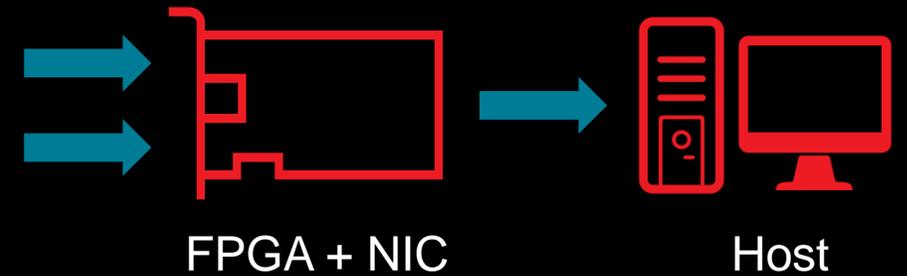




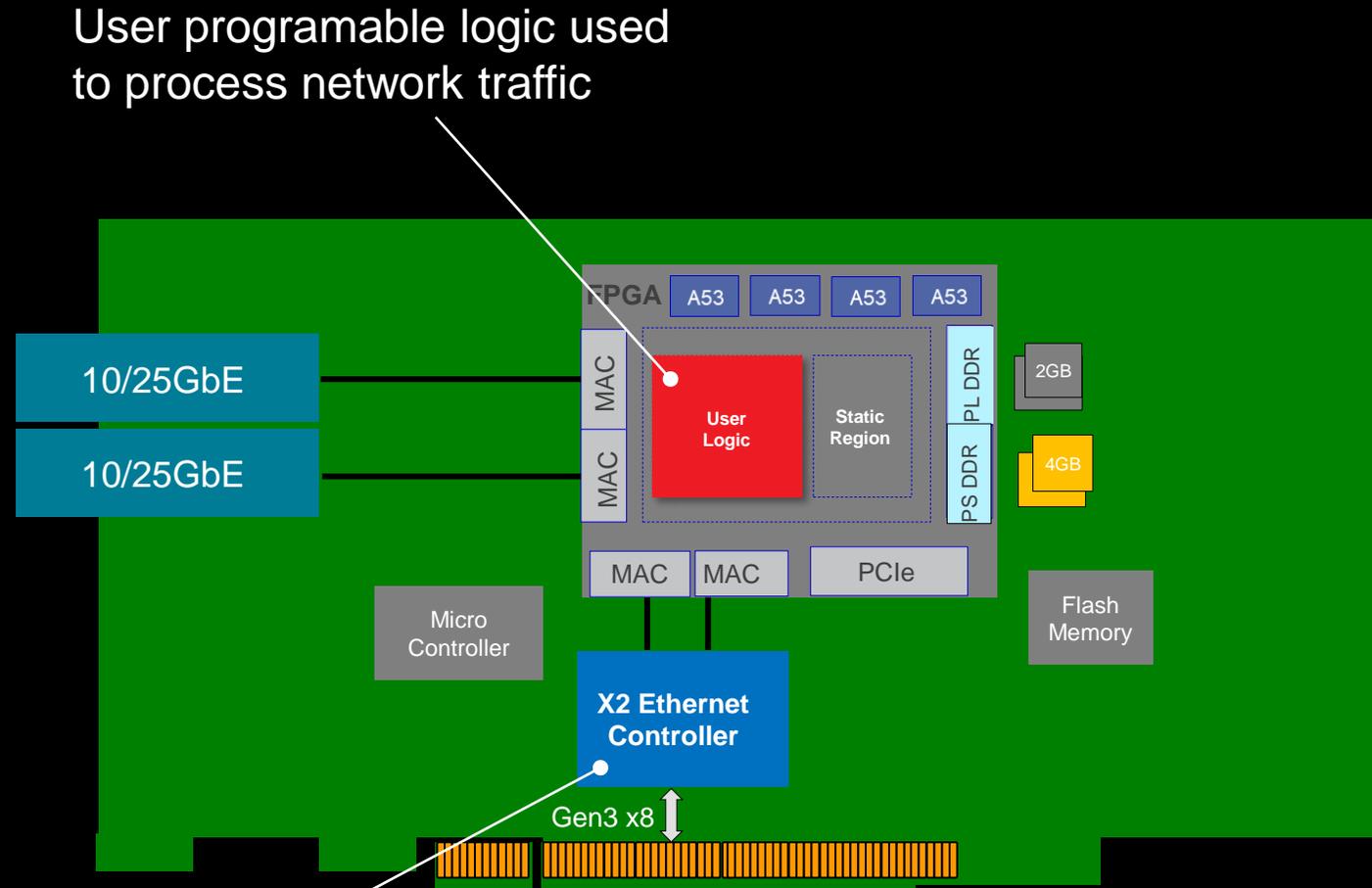
# Inline Processing of Network Traffic with FPGAs

May 2022

**FPGAs deployed as bump in the wire to process network data, reducing CPU traffic by 50%**



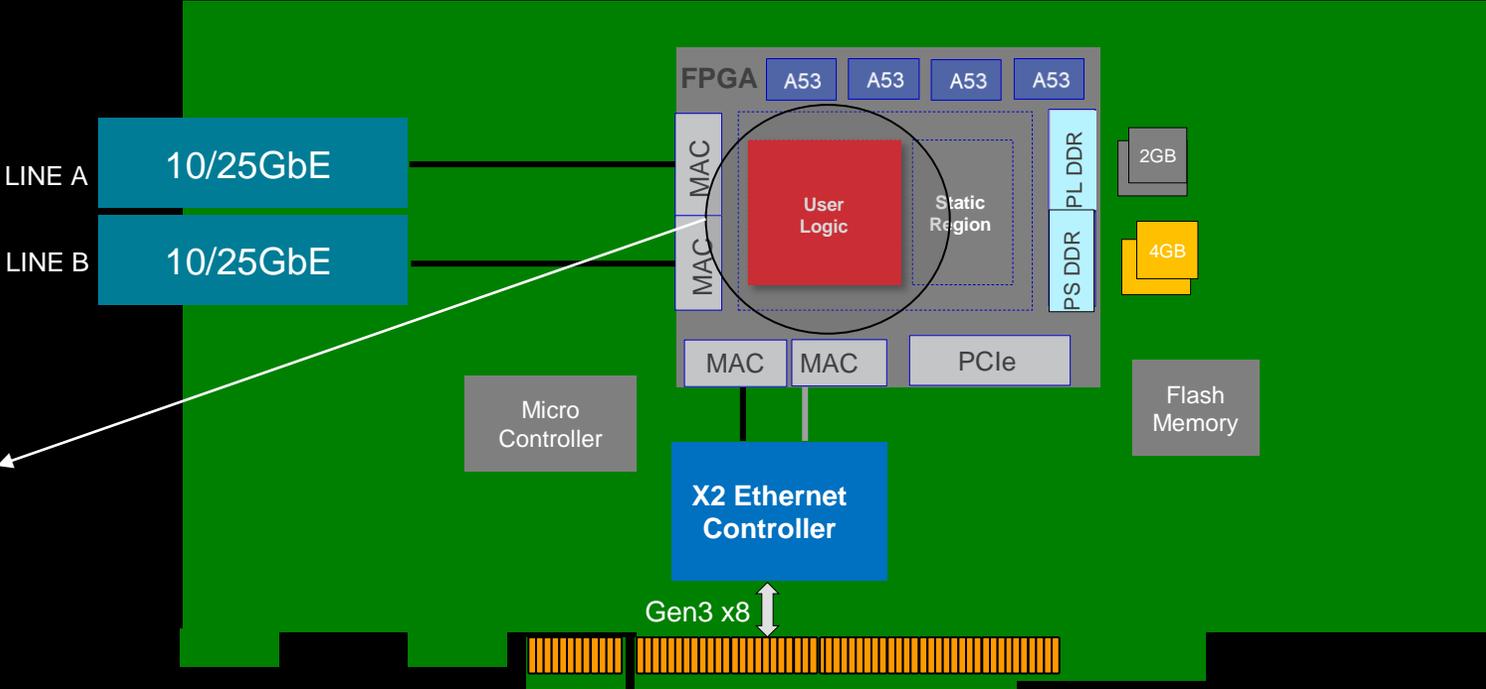
# U25N Block Diagram



User programable logic used to process network traffic

Same functionality as X2522 low latency NIC

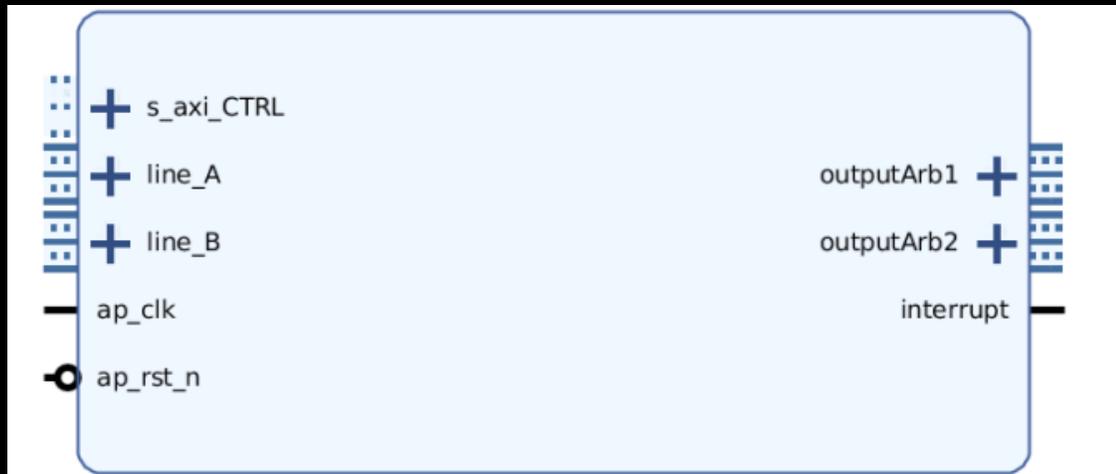
# Inline Processing Example to Reduce Network Traffic: Line Arbitration



|        |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|
| Line A | 1 | 2 |   |   | 3 | 4 |   | 5 |
| Line B | 1 |   | 2 | 3 |   |   | 4 |   |
| Output | 1 | 2 |   | 3 |   | 4 |   | 5 |

Bandwidth halved at the output of the line arbitration module

# Software Development Flow to Create the Inline Plugin

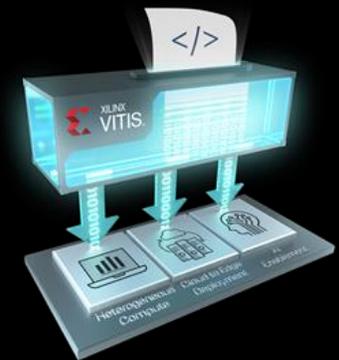


High level programming language (C++ ) used to implement line arbitration using Vitis



**Software Platform**

Fully customizable using standard libraries and C/C++





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