# Vitis™ Unified Software Platform Overview

The Vitis unified software platform includes:

- Comprehensive core development kit to seamlessly build accelerated applications
- Rich set of hardware-accelerated open-source libraries optimized for Xilinx hardware platforms
- Plug-in domain-specific development environments enabling development directly in familiar, higher-level frameworks
- A Growing ecosystem of hardware-accelerated partner libraries and pre-built applications

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Key Components of the Vitis Unified Software Platform
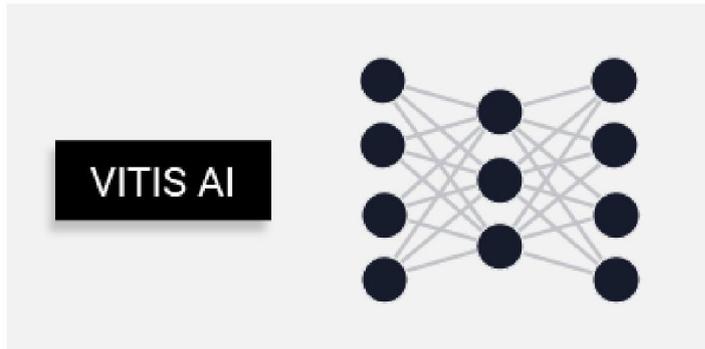
Vitis AI Development Environment

The Vitis AI development environment is a specialized development environment for accelerating AI inference on Xilinx embedded platforms, Alveo accelerator cards, or on the FPGA-instances in the cloud. Vitis AI development environment supports the industry's leading deep learning frameworks like Tensorflow and Caffe, and offers comprehensive APIs to prune, quantize, optimize, and compile your trained networks to achieve the highest AI inference performance for your deployed application.

Learn More >

Vitis Accelerated Libraries

Open-source, performance-optimized libraries that offer out-of-the-box acceleration with minimal to zero-code changes to your existing applications, written in C, C++ or Python. Leverage the domain-specific accelerated libraries as-is, modify to suit your requirements or use as algorithmic building blocks in your custom accelerators.

Learn More >
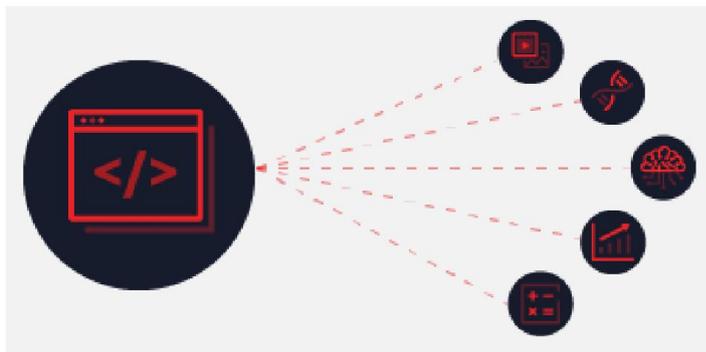
Vitis Core Development Kit

Complete set of graphical and command-line developer tools that include the Vitis compilers, analyzers and debuggers to build, analyze performance bottlenecks and debug accelerated algorithms, developed in C, C++ or OpenCL. Leverage these features within your own IDEs or use the standalone Vitis IDE.

Xilinx Runtime library

Xilinx Runtime library (XRT) facilitates communication between your application code (running on an embedded ARM or x86 Host) and the accelerators deployed on the reconfigurable portion of PCIe based Xilinx accelerator cards, MPSoC based embedded platforms or ACAPs. It includes user-space libraries and APIs, kernel drivers, board utilities, and firmware.

Learn More >
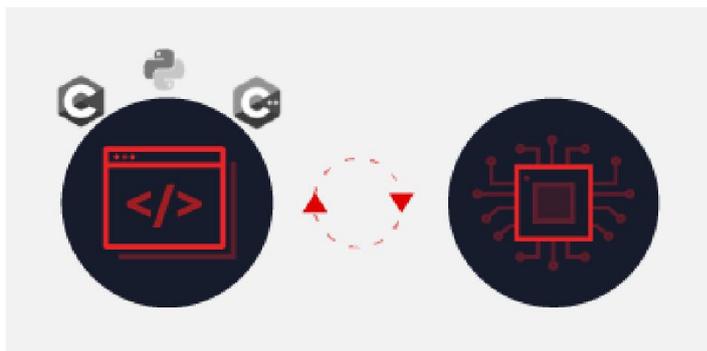
Vitis Target Platforms

The Vitis target platform defines base hardware and software architecture and application context for Xilinx platforms, including external memory interfaces, custom input/output interfaces and software runtime.
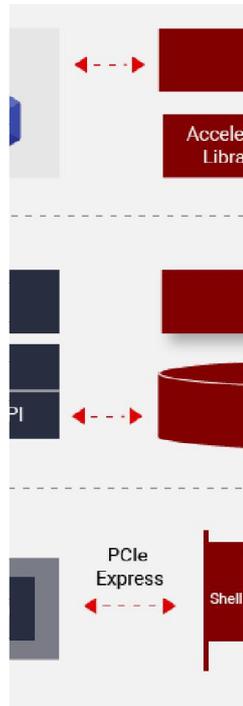
- For Xilinx accelerator cards on-premise or in the cloud, the Vitis target platform automatically configures the PCIe interfaces that connect and manage communication between your FPGA accelerators and x86 Application code – you don't need to implement any connection details!

- For Xilinx embedded devices, the Vitis target platform also includes the operating system for the processor on the platform, boot loader and drivers for platform peripherals, and root file system. You can use predefined Vitis target platforms for Xilinx evaluation boards or define your own in Vivado® Design Suite.

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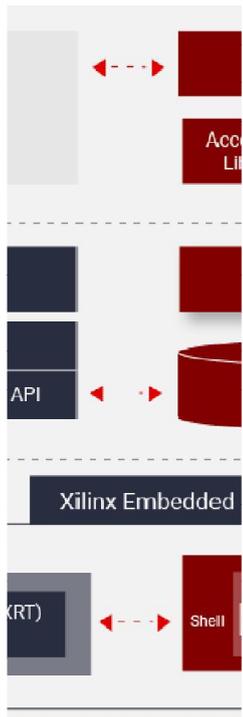
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