BAYNCORE

What are the Intel Toolkits?

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www.bayncore.com

Programming Challenges

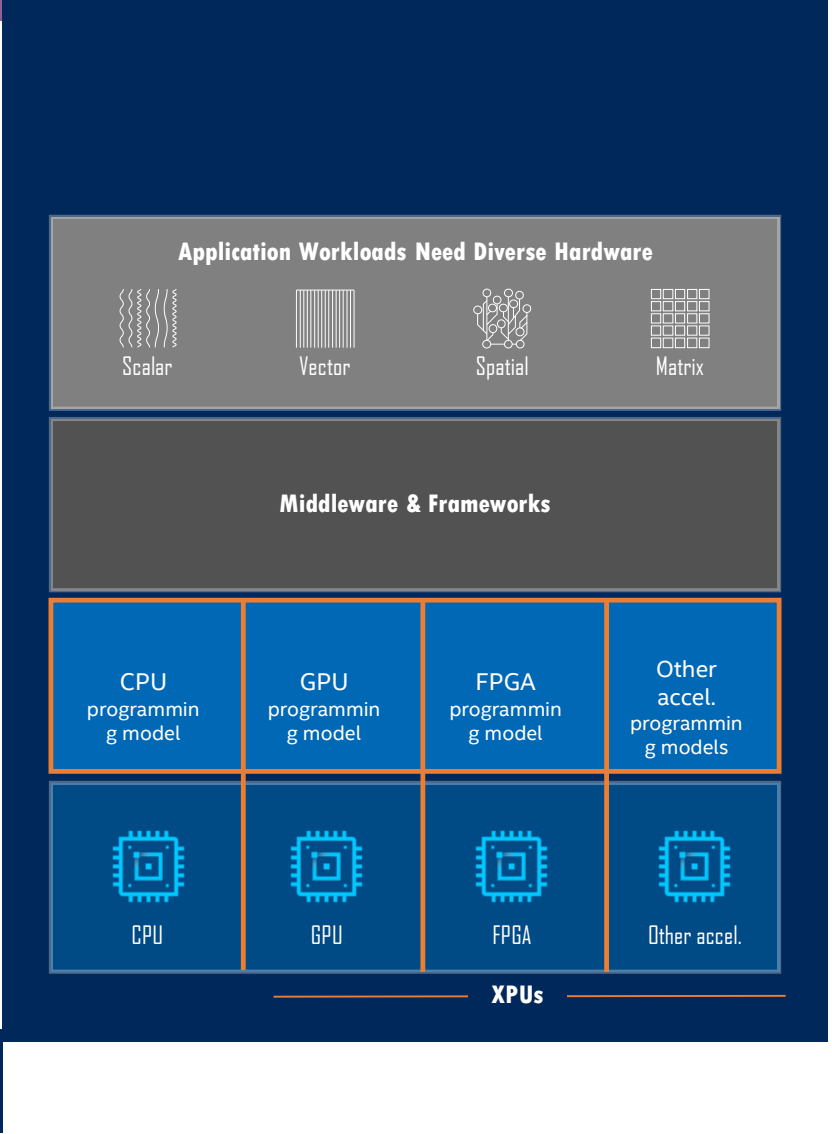
for Multiple Architectures

Growth in specialized workloads

Variety of data-centric hardware required

Separate programming models and toolchains for each architecture are required today

Software development complexity limits freedom of architectural choice



oneAPI

One Programming Model for Multiple Architectures and Vendors

Freedom to Make Your Best Choice

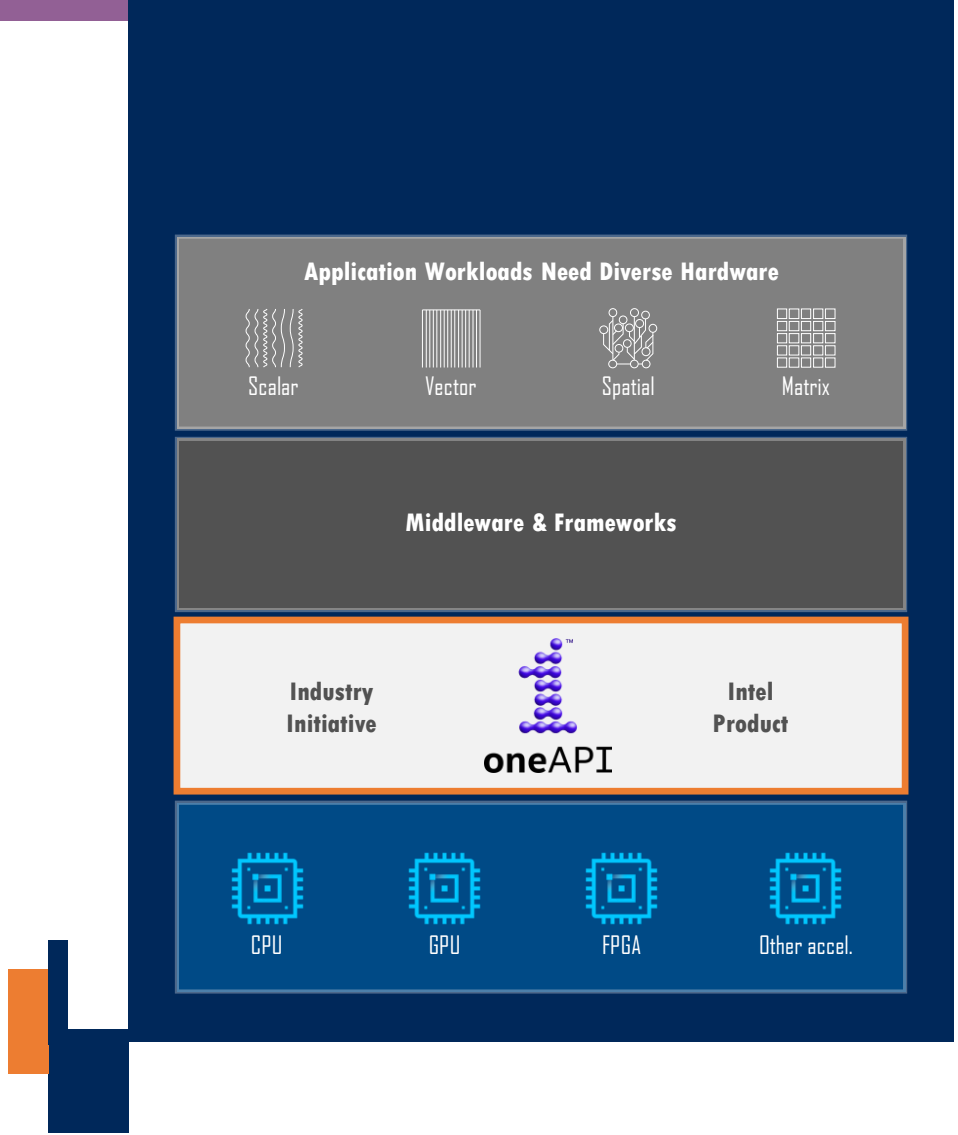
- Choose the best accelerated technology the software doesn't decide for you

Realize all the Hardware Value

- Performance across CPU, GPUs, FPGAs, and other accelerators

Develop & Deploy Software with Peace of Mind

- Open industry standards provide a safe, clear path to the future
- Compatible with existing languages and programming models including C++, Python, SYCL, OpenMP, Fortran, and MPI

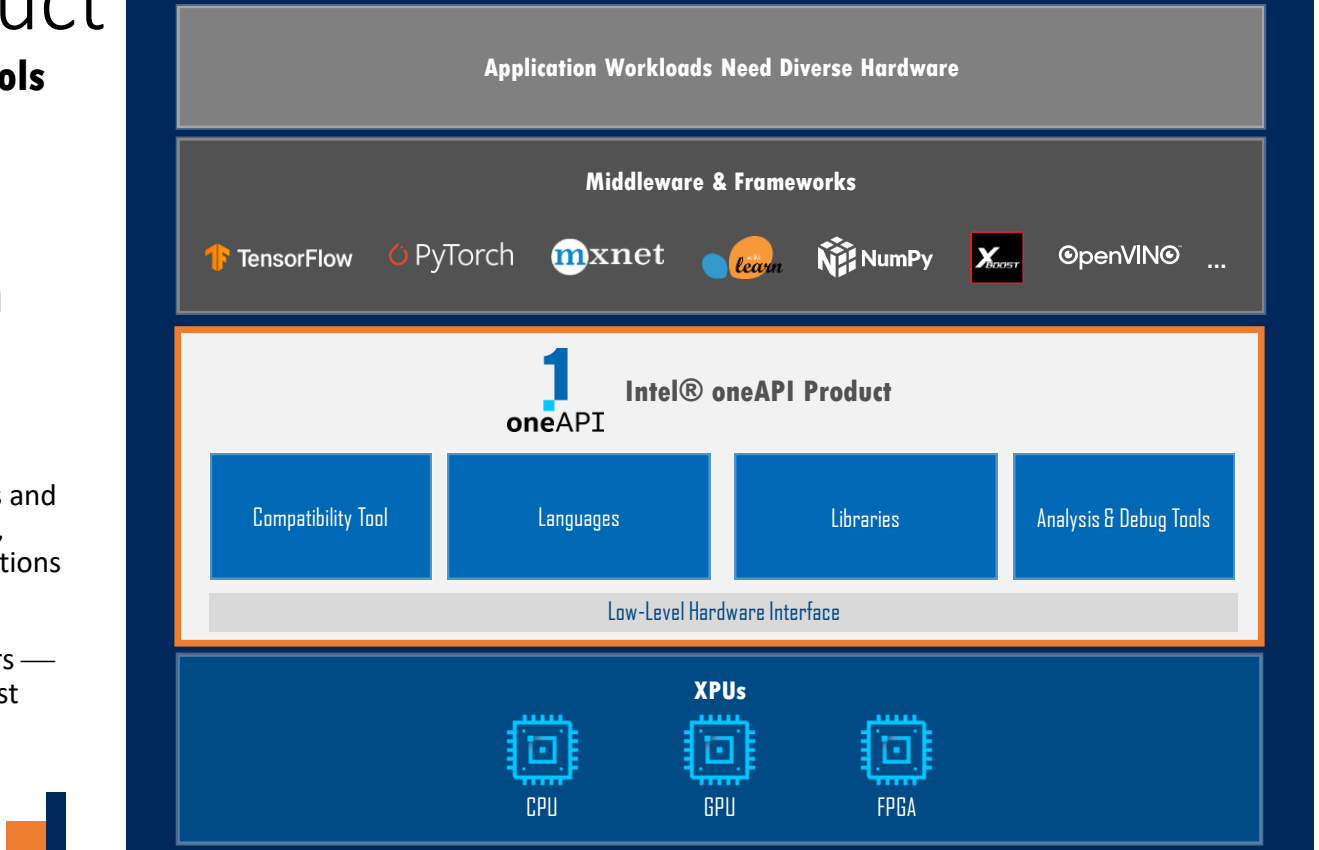


Intel® oneAPI Product

Built on Intel's Rich Heritage of CPU Tools Expanded to XPUs

A complete set of advanced compilers, libraries, and porting, analysis and debugger tools

- Accelerates compute by exploiting cutting-edge hardware features
- Interoperable with existing programming models and code bases (C++, Fortran, Python, OpenMP, etc.), developers can be confident that existing applications work seamlessly with oneAPI
- Eases transitions to new systems and accelerators — using a single code base frees developers to invest more time on innovation



Available Now

Visit software.intel.com/oneapi for more details
Some capabilities may differ per architecture and custom-tuning will still be required. Other accelerators to be supported in the future.

The Tool Kits Contain

- Compilers
- Libraries
- Frameworks
- Analysis Tools

Intel® oneAPI Toolkits

oneAPI

Intel® oneAPI **Base** Toolkit

For Most Developers

Develop performant, data-centric applications across Intel® CPUs, GPUs, and FPGAs

Intel® oneAPI **HPC** Toolkit

For HPC Developers

Build, analyze, and scale applications across shared- and distributed-memory computing systems

Domain-specific Toolkits

Specialized Workloads

Intel® oneAPI AI Analytics Toolkit

Accelerate end-to-end data science and machine learning pipelines using Python* tools and frameworks.

For Data Scientists & AI Developers

Intel® oneAPI Tools for IoT

Build efficient, reliable solutions that run at network's edge

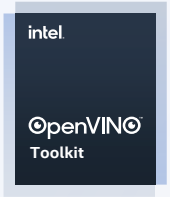
For edge device and IoT developers

Intel® oneAPI Rendering Toolkit

Create high-fidelity, photorealistic experiences that push the boundaries of visualization.

For visual creators, scientists, and engineers

Toolkits **powered by oneAPI**



Intel® Distribution of OpenVINO™ Toolkit

Deploy high performance inference & applications from edge to cloud

For deep learning inference developers

Intel® System Bring-up Toolkit

Strengthen system reliability with hardware and software insight, and optimize power and performance.

For System Engineers

Intel® oneAPI Toolkits

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For edge

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Libraries

Math Kernel Library

Threading Building Blocks

Video Processing Library

Integrated Performance Primitives

Data analytics, Deep Neural Networks

Compiler/Language Support

DPC++/C++ Compiler

Python

Profiling/Tools

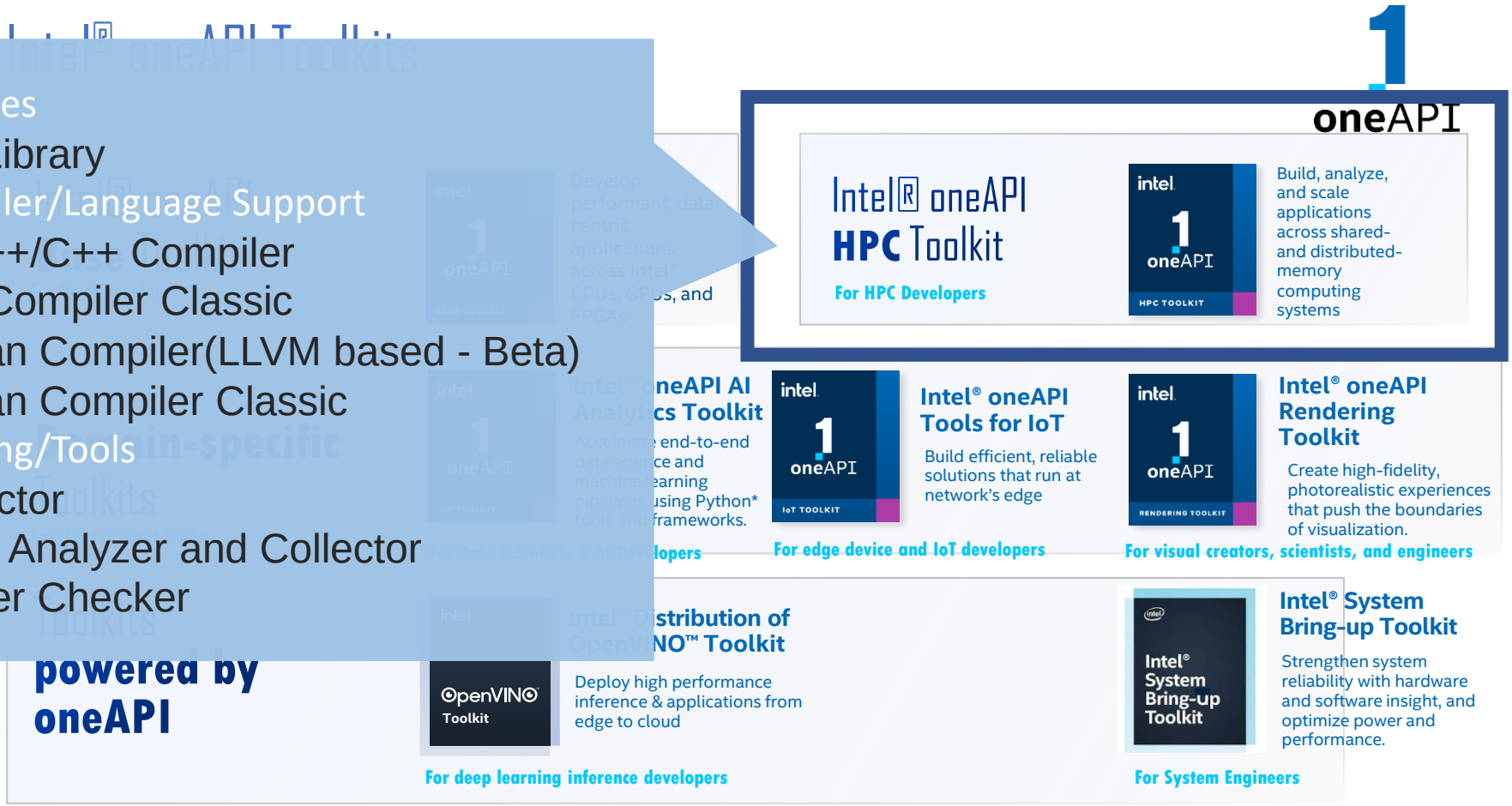
Advisor

GDB

VTune

Application Performance Snapshot (APS)

Libraries
MPI Library
Compiler/Language Support
DPC++/C++ Compiler
C++ Compiler Classic
Fortran Compiler(LLVM based - Beta)
Fortran Compiler Classic
Profiling/Tools
Inspector
Trace Analyzer and Collector
Cluster Checker



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Libraries
Model Zoo
Compiler/Language Support
Python
PyTorch
Tensorflow
Modin
Profiling/Tools
Low Precision Optimization Tool

Toolkits **powered by oneAPI**

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Libraries

Embree ray-tracing kernels

Open Volume Kernel Library

Profiling/Tools

Intel OSPRay Studio

Open Image Denoise

OpenSWR rasterizer

Rendering Toolkit Utilities

Build, analyze, and scale applications across shared- and distributed-memory computing systems

Intel® oneAPI Rendering Toolkit

Create high-fidelity, photorealistic experiences that push the boundaries of visualization.

For visual creators, scientists, and engineers

OpenVINO Toolkit

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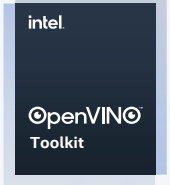

Intel® Distribution of OpenVINO™ Toolkit

Deploy high performance inference & applications from edge to cloud

For deep learning inference developers

Libraries

- OpenCV
- Model Zoo
- Media SDK

Profiling/Tools

- Deep Learning Workbench
- Model Optimizer
- Inference Engine
- Post Training Optimization Tool
- Deep Learning Streamer

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Profiling /Tools

SoC watch

System Debugger

VTune Profiler

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Strengthen system reliability with hardware and software insight, and optimize power and performance.

For System Engineers (CNDA required)

Two ways to get oneAPI

Intel DevCloud

https://devcloud.intel.com/oneapi/get_started/

Install it yourself

- Online and local installers
- Docker Containers
- Package Managers

https://software.intel.com/content/www/us/en/develop/tools/oneapi/all-toolkits.html