

Overview

Intel® OneAPI

HPE Performance Software Portfolio

Intel oneAPI is an open, unified programming model built on standards to simplify development and deployment of data-centric workloads across CPUs, GPUs, FPGAs and other accelerators.

Extract the most application performance on multiple types of Intel® architecture by using advanced, cross-architecture software development tools from Intel.

The Intel® oneAPI product family includes:

- Industry-leading compilers
- Performance libraries
- Analyzer and debugger tools
- Domain-specific toolkits, including libraries and accelerated workload tools

The Intel® oneAPI Base Toolkit is a core set of tools and libraries for building and deploying high-performance, data-centric applications across diverse architectures. It features the Data Parallel C++ (DPC++) language, an evolution of C++ that:

- Allows code reuse across hardware targets — CPUs, GPUs, and FPGAs
- Permits custom tuning for individual accelerators

Domain-specific libraries and the Intel® Distribution for Python provide drop-in acceleration across relevant architectures. Enhanced profiling, design assistance, and debug tools complete the kit.

High-performance computing (HPC) is at the core of artificial intelligence, machine learning, and deep learning applications. The Intel® oneAPI HPC Toolkit delivers what developers need to build, analyze, optimize, and scale HPC applications with the latest techniques in vectorization, multithreading, multi-node parallelization, and memory optimization.

The HPC toolkit is an add-on to the Intel® oneAPI Base Toolkit, which is required for full functionality.

Standard Features

Intel oneAPI Toolkit Contents		
Components	Base Toolkit	HPC Toolkit
Intel oneAPI DPC++/C++ Compiler	✓	
Intel oneAPI DPC++ Library	✓	
Intel oneAPI Data Analytics Library	✓	
Intel oneAPI Depp Neural Network Library	✓	
Intel oneAPI Collective Communications Library	✓	
Intel oneAPI Math Kernel Library	✓	
Intel oneAPI Threading Building Blocks	✓	
Intel oneAPI Video Processing Library	✓	
Intel Advisor	✓	
Intel Distribution for GDB	✓	
Intel Distribution for Python	✓	
Intel DPC++ Compatibility Tool	✓	
Intel Integrated Performance Primitives	✓	
Intel Vtune Profiler	✓	
Intel C++ Compiler Classic		✓
Intel Cluster Checker		✓
Intel Fortran Compiler		✓
Intel Inspector		✓
Intel MPI Library		✓
Intel Trace Analyzer and Collector		✓

Priority Support is paid product support that covers all of the components included in the toolkit. It provides the following benefits for one year:

- Direct and private interaction with Intel's support engineers, including the ability to submit confidential support requests
- Accelerated response time for technical questions and other product needs
- Priority assistance for escalated defects and feature requests
- Free download access to all new product updates and continued access to older versions of the product
- Access to a vast library of self-help documentation built from decades of experience with creating high-performance code
- Access to Intel public community forums supported by community technical experts and monitored by Intel engineers



Service and Support

Support

Support for Intel oneAPI is direct-to-vendor. Information about support processes will be provided at the point of providing a license key to Intel.

Parts and Materials

Hewlett Packard Enterprise will provide HPE-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements.

Parts and components that have reached their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual, product quick-specs, or the technical product data sheet will not be provided, repaired, or replaced as part of these services.

The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by Hewlett Packard Enterprise due to malfunction.



Configuration Information

Commercial Products

Intel oneAPI Base and HPC Toolkit Multi Node for Intel Hardware 2 Users 1-year LTU	R7N65A
Notes: Ordered with hardware that includes Intel components	
Intel oneAPI Base and HPC Toolkit Multi Node for AMD Hardware 2 Users 1-year LTU	R7N66A
Notes:	
– Ordered separately or with hardware that does not include Intel components	
– Includes one commercial license for two (2) users.	
– Includes one (1) year of Intel Priority Support.	
– Order PN R7N73A if renewing this license before expiration.	
– Order PN R7N74A if renewing this license more than 30 days after the expiration date.	
Intel oneAPI Base and HPC Toolkit Multi Node for Intel Hardware 2 Users 3-year LTU	R7N67A
Notes: Ordered with hardware that includes Intel components	
Intel oneAPI Base and HPC Toolkit Multi Node for AMD Hardware 2 Users 3-year LTU	R7N68A
Notes:	
– Ordered separately or with hardware that does not include Intel components	
– Includes one commercial license for two (2) users.	
– Includes one (3) years of Intel Priority Support.	
– Order PN R7N73A if renewing this license before expiration.	
– Order PN R7N74A if renewing this license more than 30 days after the expiration date.	
Intel oneAPI Base and HPC Toolkit Multi Node for Intel Hardware 5 Users 1-year LTU	R7N69A
Notes: Ordered with hardware that includes Intel components	
Intel oneAPI Base and HPC Toolkit Multi Node for AMD Hardware 5 Users 1-year LTU	R7N70A
Notes:	
– Ordered separately or with hardware that does not include Intel components	
– Includes one commercial license for five (5) users.	
– Includes one (1) year of Intel Priority Support.	
– Order PN R7N75A if renewing this license before expiration.	
– Order PN R7N76A if renewing this license more than 30 days after the expiration date.	
Intel oneAPI Base and HPC Toolkit Multi Node for Intel Hardware 5 Users 3-year LTU	R7N71A
Notes: Ordered with hardware that includes Intel components	
Intel oneAPI Base and HPC Toolkit Multi Node for AMD Hardware 5 Users 3-year LTU	R7N72A
Notes:	
– Ordered separately or with hardware that does not include Intel components	
– Includes one commercial license for five (5) users.	
– Includes three(3) years of Intel Priority Support.	
– Order PN R7N75A if renewing this license before expiration.	
– Order PN R7N76A if renewing this license more than 30 days after the expiration date.	
Extended Support	
Intel oneAPI Base and HPC Toolkit Multi Node 2 Users Pre-expiry 1-year LTU	R7N73A
Intel oneAPI Base and HPC Toolkit Multi Node 2 Users Post-expiry 1-year LTU	R7N74A
Intel oneAPI Base and HPC Toolkit Multi Node 5 Users Pre-expiry 1-year LTU	R7N75A
Intel oneAPI Base and HPC Toolkit Multi Node 5 Users Post-expiry 1-year LTU	R7N76A



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Distribution Media and Software Documentation

Intel oneAPI is available for download. Upon order delivery, customers will receive an entitlement certificate, which includes a URL to the Intel Registration Site and additional license information. Customers will need to visit the Intel Registration Site to register their purchase and retrieve their license key.

After retrieving their license key, customers will need to visit the specified website to download the software and complete their support setup.

Customers may also download user guides and other documentation at the [Intel Developer Zone](#).

Intel oneAPI Components	
Component	Details
Intel DPC++ Compiler	<ul style="list-style-type: none"> Standards-based C/ C++ application performance with OpenMP support. Drop-in compatible with popular compilers, development environments, and operating systems. Super vectorization and parallelization capabilities using SIMD Data Layout Templates.
Intel Fortran Compiler	<ul style="list-style-type: none"> Boost standards-based, co-array Fortran performance. Extensive support for Fortran standards, OpenMP and more. Compatible with leading development environments and compilers.
Intel Distribution for Python	<ul style="list-style-type: none"> Delivers faster Python application performance in an easy, integrated distribution for Windows, OS X, and Linux. Accelerates NumPy/ SciPy/ scikit-learn packages with native Intel Performance Libraries such as Intel Math Kernel Libraries for multi-threaded performance benefits.
Intel Math Kernel Library	<ul style="list-style-type: none"> Fastest and most-used math library for Intel and compatible processors. Highly tuned for best performance on older, newer, and future processors before they are released. De facto standard APIs for simple code integration.
Intel Data Analytics Acceleration Library	<ul style="list-style-type: none"> Helps applications make better predictions faster, and analyzes larger data sets with the same compute resources. Reduces application development time via a wide selection of pre-optimized advanced analytics algorithms. Includes connectors to popular data sources and can be used with any data platform.
Intel Integrated Performance Primitives	<ul style="list-style-type: none"> Highly optimized using Intel Streaming SIMD Extensions (Intel SSE) and Intel Advanced Vector Extensions (Intel AVX, Intel AVX2) instruction sets so your application will perform faster on existing and future Intel processors. Reduces costs and time associated with software development and maintenance.
Intel Threading Building Blocks	<ul style="list-style-type: none"> Widely used C++ template library for task parallelism. Maps your logical tasks onto threads with full support for nested parallelism. Uses proven, efficient parallel patterns and work-stealing to support the load balance of unknown task execution time. Compatible with multiple compilers and Intel compatible processors. Flow graph feature allows developers to easily express dependency and data flow graphs.
OpenMP	<ul style="list-style-type: none"> Performance-oriented implementation of OpenMP 4.0 and initial support for 4.5. Support for Intel SSE and the latest AVX instruction sets



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Intel VTune Amplifier XE	<ul style="list-style-type: none"> ● Accurate profile C, C++, Fortran, Python, Go, Java or a mix of coding languages. ● Diverse data for CPU, GPU, threading, memory, cache and storage. ● Fast answers: rich analysis turns into insight.
Intel Advisor	<ul style="list-style-type: none"> ● Vectorize and thread your code or performance dies on modern processors. ● Get trip counts, data dependencies, memory access patterns, and more. ● Follow an easy optimization workflow with tips for faster code.
Intel Inspector	<ul style="list-style-type: none"> ● Find root-cause memory and threading errors early, before you release. ● Quickly debug intermittent races and deadlocks.
Intel MPI Library	<ul style="list-style-type: none"> ● A performance-optimized MPI library supporting the MPI 3.1 standard. ● Makes applications perform better on Intel architecture-based clusters with multiple fabric flexibility. ● Sustained scalability: low latencies, higher bandwidth and increased processes. ● Full hybrid support for multi-core and many-core systems.
Intel Trace Analyzer and Collector	<ul style="list-style-type: none"> ● Profile MPI application to quickly find bottlenecks and achieve high-performance for parallel cluster applications. ● Scalable, with low overhead and effective visualization. ● Flexible-to-fit workflow: compile, link or run.
Intel Cluster Checker	<ul style="list-style-type: none"> ● Simplified diagnosis of issues to improve cluster functionality and performance. ● API to integrate with other software. ● Comprehensive cluster environment checking, extensible with custom sets



Summary of Changes

Date	Version History	Action	Description of Change
22-Feb-2021	Version 2	Changed	Corrected SKU Descriptions.
01-Feb-2021	Version 1	New	New QuickSpecs



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