



Simplify system programming and improve developer productivity using IBM Enterprise Metal C for z/OS

Highlights

IBM® Enterprise Metal C for z/OS®, V3.1 is the newest stand-alone offering for the IBM family of development tools. It provides the following features:

- Delivers a high-level language alternative to writing programs in High Level Assembler (HLASM).
- Creates low-level and freestanding applications that are Language Environment® independent.
- Exploits IBM z14™ (z14) through new vector built-in functions and options for improved application performance.
- Leverages the IBM optimization technology to generate high performance optimized code.

The IBM Enterprise Metal C for z/OS compiler helps you create and maintain critical business applications written in C, maximize application performance, and improve developer productivity. Enterprise Metal C for z/OS can transform C source code to HLASM source code. After you assemble the HLASM source code and bind the object files, the resulting programs can fully exploit your existing IBM Z® system and optimize workloads through smarter computing capabilities with the new IBM z14 hardware.

IBM works constantly to improve compiler components, including front-ends, high-level optimizers, and low-level optimizers. IBM compilers offer a cost-effective way to get more out of existing technology and stay ahead of competitors on the technology curve.

Enterprise Metal C for z/OS reinforces the continuing IBM commitment to the C programming language on the z/OS platform.

Delivers a high-level language alternative to writing programs in HLASM

Enterprise Metal C for z/OS delivers a high-level language alternative to writing programs in High Level Assembler (HLASM). HLASM is a specialized skill in z/OS and developers with expertise in assembler skills are difficult to find. Developers are able to use C syntax instead to develop systems programs, eliminating the need to manage the use of registers and to manually tune assembler instruction sequences.

Creates low-level, freestanding, and Language Environment independent applications

Enterprise Metal C for z/OS allows developers to create low-level and freestanding applications. The generated optimized HLASM source code is Language Environment independent and follows the MVS™ linkage conventions for passing parameters, returning values, and setting up function save areas. The C runtime is not required for execution. The resulting programs seamlessly integrate with the HLASM code base and has direct access to z/OS system services.

Exploits IBM z14 through built-in functions and options

Enterprise Metal C for z/OS provides the ARCH(12) option to produce code that uses instructions available on z14. The compiler can use the instructions that are supported by the vector enhancement facility 1 and the vector packed decimal facility when the ARCH(12) and VECTOR options are in effect. You can use the TUNE(12) option to generate code that is optimized for z14 processors.

Generates high performance optimized code by leveraging IBM optimization technology

Enterprise Metal C for z/OS leverages the advanced IBM optimization technology that is available in all IBM compilers to generate high performance optimized code. You can develop your applications with Enterprise Metal C for z/OS once, and then recompile to take advantage of optimizations in the latest IBM Z systems.

Summary of features and benefits

The following table summarizes the features and benefits for Enterprise Metal C for z/OS.

Table 1. Summary of features and benefits

Feature	Benefit
System programming capabilities	<ul style="list-style-type: none">• Supports using C syntax instead of HLASM to develop systems programs. You can insert HLASM instructions into C source, specify custom function prologs and epilogs, and generate HLASM source, making it easier to integrate new code with existing HLASM programs.• Reduces development costs by lowering dependencies on scarce HLASM skills.
Language Environment independent	<ul style="list-style-type: none">• Enables the use of C as the language for system programming where the Language Environment is either unavailable or undesirable.• The resulting programs could have direct access to z/OS system services.
Designed for IBM platform and z/OS system	<ul style="list-style-type: none">• Exploits IBM Z systems and z/OS system services.
Improved industry language standards compliance	<ul style="list-style-type: none">• Provides compiler diagnostics to help you achieve the level of conformance to a particular programming language standard.• Supports commonly used IBM and non-IBM language extensions.
Improved industry-leading optimizations	Supports multiple optimization levels to tailor the optimization aggressiveness for your applications. You can use the following advanced optimization techniques to gain significant performance improvements: <ul style="list-style-type: none">• High-order transformation (HOT) loop optimization• Interprocedural analysis (IPA) optimization
Additional built-in functions	<ul style="list-style-type: none">• Provides access to the newest and most efficient hardware operations at the source level.• Simplifies the development effort for creating and maintaining high-performance applications.
IBM service and support	<ul style="list-style-type: none">• Provides responsive platform and cross-platform support that meets or exceeds customer expectations.• Teams with subject matter experts in compiler development for dedicated support excellence.

System requirements

The following table presents the system requirements for Enterprise Metal C for z/OS, V3.1.

Table 2. System requirements

Operating system	Hardware
z/OS V2R3	<p>Enterprise Metal C for z/OS, V3.1 runs on the following IBM Z servers:</p> <ul style="list-style-type: none">• IBM z14 (z14)• IBM z13[®] (z13)• IBM z13s[®] (z13s)• IBM zEnterprise[®] EC12 (zEC12)• IBM zEnterprise BC12 (zBC12) <p>Note: For a complete description of z/OS software prerequisites, see <i>z/OS Planning for Installation</i> (GA32-0890-30).</p>

For more information

To learn more about Enterprise Metal C for z/OS, contact your IBM representative or IBM Business Partner, or visit the Enterprise Metal C for z/OS website:

<https://www.ibm.com/us-en/marketplace/metal-c-compiler-zos>

Notices

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