

Upgrading Your Compilers Makes Business Sense



Overview

IBM® has a wide range of compiler products that support your software development needs on z/OS®, z/VM®, AIX®, Linux®, IBM i, and Blue Gene® operating systems. These compilers are highly-tuned to deliver maximum performance on the System z® and Power Systems™ that run these operating systems. The compilers support diverse programming languages including COBOL, C, C++, Fortran, and PL/I giving you flexibility in choosing the languages that best suit your business or high-performance-computing needs. You may already have one or more of these compilers in your development environment but you may not realize that not keeping your compilers up to date may be costing you money. When IBM releases new compilers, there are generally four primary reasons for doing so. We will examine each of them below.

New IBM Hardware and Operating Systems

The IBM compiler teams work very closely with the IBM hardware development teams to deeply understand new hardware designs. This close collaboration enables the compiler team to produce compilers that fully unlock the capabilities of new chip designs. The result is compilers that are able to transform the applications that your business relies on into highly-tuned machine code that optimally performs on the new hardware. If you don't upgrade your compiler when acquiring the newest IBM hardware systems, your applications will not be capable of exploiting cutting-edge IBM hardware enhancements and will likely perform sub-optimally. Considering the advanced technology that new IBM hardware brings into your business, it makes business-sense to match that hardware with compilers to fully exploit your IT investment.

New Optimization Technology

Optimization is the process whereby compilers transform an application into a significantly more efficient version of itself. The compiler can recognize inefficient programming practices and transform them into more efficient ones. The program continues to behave as before but now runs smarter - it can run faster, use less system resources, and exploit parallel programming to run multiple sections of the code simultaneously. These techniques are independent of the hardware exploitation discussed above and generally apply on all platforms.

IBM continually invents new optimizations and refines existing ones putting advancements in this area into the hands of your programmers with each new compiler release. Even if you don't acquire new IBM hardware, rebuilding your applications with upgraded compilers allows you to apply these new capabilities to better tune your applications to run on your existing IBM hardware. IBM compilers have historically shown release-to-release performance improvements on the same hardware measured with industry-standard benchmarks. Upgrading your compilers allows your business to more efficiently use your existing capital investment in hardware and frees precious machine resources allowing you to do more on the same systems.

New Industry Standards

There are standards bodies guiding the evolution of the programming languages. As standards evolve, more advanced programming techniques are added to the languages increasing the efficiency of programmers. New areas of problem solving are addressed such as how to exploit the explosion of increased parallelism within single machines as well as large clusters of machines. IBM has

representatives working on all of the language standard bodies and is helping to shape the evolution of the languages as well as bring expert knowledge of new standards back to the compiler team. Upgrading to compilers with enhanced adherence to industry standards ensures your programmers will have the very latest in programming techniques in their toolkit as well as ensuring application portability between systems. Your application developers can use the capabilities in the languages to more efficiently produce code, more easily tackle tough problems, and more easily exploit powerful system parallelism. This gives your business the ability to more quickly deploy applications and solve difficult problems giving you a business advantage.

IBM Listens to You

IBM compilers are used in an enormous variety of businesses powering applications that run on all IBM systems. We receive a broad spectrum of requests to enhance the capabilities our compiler products adding features that our users feel would give them an advantage. Odds are that the advantage that possibly one of your competitors has requested could also benefit your business. When we add features like these to our compilers, IBM makes them available to everyone. You can only benefit from the wisdom of our large developer community by upgrading to IBM compilers that contain these features. Don't leave your developers without the breakthrough capabilities that your competitors may be using to innovate.

In summary, upgrading your IBM compilers makes good business sense whether or not you buy new IBM hardware. Upgrading delivers new capabilities into the hands of your programmers making them and your business more efficient. New compilers are a must for fully exploiting new hardware but you can also squeeze more out of your current systems as well. New IBM compilers are a cost-effective way to unlock the latest advancements in IBM technology giving your business an advantage on all of your IBM systems.

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