



**IBM and Simudyne:
Speeding up petroleum discovery and
production through simulation**





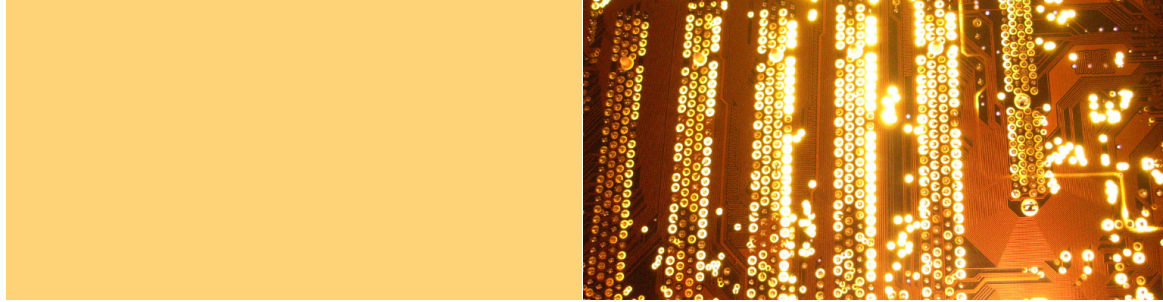
Simudyne's highly advanced simulation platform and petroleum market expertise have been married with IBM Cell Broadband Engine™ (Cell/ B.E.) multi-core technology—an innovative and powerful microprocessor architecture—to help speed up petroleum discovery and production.

The challenge

New levels of performance are required to address the current and future challenges of petroleum exploration. Increasingly, current technologies are too slow to meet the demanding needs of today's oil and gas companies. A solution is vitally needed to help them make more accurate decisions, in less time, that produce greater financial results.

About Simudyne

Many of the biggest challenges facing us in the 21st century require the deep insights that Simudyne's simulation platform, coupled with IBM's high-performance computing (HPC) environments, provide. Simudyne is blazing the trail for global organizations to follow so they can improve their ability to thrive in these tumultuous times and work effectively within their communities.



Simudyne and Cell/B.E. technology

With its extraordinary double-precision floating-point processing power, the IBM BladeCenter® QS22 can yield simulation results faster and more accurately. Part of the IBM BladeCenter family of products, the new QS22 is a high-performance blade server that extends and deepens the IBM high performance computing solution portfolio. The QS22 server is based on the innovative multi-core IBM PowerXCell™ 8i processor, a new generation processor built on the Cell/B.E. architecture. The PowerXCell 8i multi-core processor architecture helps the QS22 accelerate key algorithms such as 3D rendering, compression and encryption. With a 32 GB memory footprint, the QS22 provides a new level of parallelism and performance for Simudyne's simulation platform, offering users:

- Sixteen times more memory (maximum) than the previous generation blade
- More computing power than traditional processors for targeted workloads
- Five times faster double-precision processing than previous generation blades

By incorporating advanced multiprocessing technologies, the PowerXCell 8i processor is especially suitable for Simudyne's high-performance workloads. The

ultra-high-speed communications capabilities of two 3.2 GHz PowerXCell 8i processors on the QS22 mean that Simudyne can create and run vastly improved visual, immersive, real-time simulations. These simulations offer significant potential benefits to companies in petroleum exploration and many other industries.

Simudyne's simulation platform is specifically designed to assist in hydrocarbon exploration by growing algorithms that help speed up seismic surveys, optimize complex logistics networks and create software that improves according to the same principles that drive adaptation in natural systems.

Benefits of the IBM and Simudyne solution

To help companies harness the power of multi-core architectures for simulation, IBM and Simudyne have taken a combined approach built around the Cell/B.E. architecture computing platforms. This approach integrates hardware, software and services from both companies to deliver one of the most flexible high-performance simulation platforms on the market today. Our partnership is a unique combination of assets, expertise and innovation, designed specifically to improve the speed and accuracy of enterprise simulations.

How to get started

Find out how IBM and Simudyne can help you climb the simulation learning curve. Consider the five-point plan:

1. Initiate an education and training session from both IBM and Simudyne.
2. Identify the simulations that can be accelerated with the IBM QS22 platform.
3. Create a proof-of-concept with IBM and Simudyne to quantify costs versus benefits, including performance, flexibility, hardware consolidation, lines of code and overall effort.
4. Integrate simulations across the organization to improve decision making across the value chain.
5. Engage with Simudyne and IBM to accelerate your solution development.

For more information

For more information about the IBM BladeCenter QS22 server, speak to an IBM Specialist at 1-877-IBM-ACCESS (1-877-426-2223) or visit:

ibm.com/technology/cell

To find out more about how Simudyne can help you transform your organization's decision-making capabilities through the adoption of advanced simulation technologies, visit: <http://www.simudyne.com/>



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