



IBM® Computing on Demand: Actuarial Modeling, Risk Management and Compliance in the Insurance Industry



Highlights

- Scale beyond in-house data center limits
- Highly secure, dynamic access to high performance systems
- Global centers located in New York, London, Tokyo - more to come
- Major infrastructure: 13,000 processors and 56 TB storage
- Hourly, weekly or annual availability
- Satisfy peak or long-term demand

Overview

Insurance companies today face significant cost and regulatory pressures. To meet evolving market needs and maintain a competitive edge they must comply with mounting financial reporting demands ... bring innovative products to market faster ... reach new, improved levels of capital management ... reduce portfolio risk and ideally reduce reserves. Increasingly sophisticated business models and algorithms are being used to tackle these challenges.

Achieving the benefits of enhanced modeling techniques, including multi-dimensional stochastic modeling, requires different thinking. The static compute environment used by most actuarial departments must be transformed into a dynamic infrastructure; one that can provide the data and processing power necessary to run simulations over extended periods, with thousands of scenarios and tens of thousands of model points.

As insurers strive to “model reality”, it is imperative to anticipate and respond to business demands while helping derive maximum value from IT investments.

With the right formulas and access to enough computing power Insurance companies may be able to:

- Reduce time to results for sophisticated modeling
- Increase flexibility and precision
- Run more complex models faster and enable
 - better insight into risks and reserves
 - shorter product development cycles
 - predictability for meeting regulatory compliance
- Improve resource utilization
- Minimize implementation risks

In a traditional owned-capacity model, companies purchase and deploy enough computing capacity to manage day-to-day processing. In this model, when project timelines overlap, business may be stuck waiting for the in-house processors to work through the assigned tasks. Thanks to IBM it's not too late to reduce the probability of that undesirable future.

IBM® Computing on Demand (CoD) is an IBM

offering that provides companies with flexible access to vast computing power capable of handling large workloads. CoD members have access to security-rich supercomputing environments that can be used like on-site hardware, but without the capital commitment, management, and maintenance costs. When computing demands exceed in-house capacity clients can shift the excess workload to an IBM CoD center and purchase additional processing capacity necessary to help meet demand. The hardware is hosted, maintained, and supported by IBM to deliver cost-effective capacity that helps free companies to focus on business operations.

The desire to run multiple risk scenarios simultaneously is contributing to an order of magnitude increase in demand for processing power and speed, stretching scarce IT resources. It can be challenging for firms to make the capital expenditures required to address these computing requirements and build sufficient computing capacity to satisfy peak workloads - especially given the market pressure to keep costs low. Risk and compliance managers are seeking real-time, accurate results without sacrificing cost, liquidity, or competitiveness.

With access to on-tap supercomputing capability an Insurance company might be able to maintain business critical tasks in-house while, for example, delegating an urgent risk compliance verification program to reserved CoD capacity. Instead of a large capital investment to buffer capacity from spikes in demand, CoD members can treat additional capacity as a value-driven operational expense. If customers only have to pay for capacity when they need it, the undedicated capital may be re-committed to strategic business objectives. Ultimately, IBM Computing on Demand can help companies achieve the speed and agility to lead the market, gain greater flexibility, and reduce costs.

IBM's Computing on Demand can be used to help accomplish these complex calculations and extend the Insurance institution's in-house computing infrastructure. It provides a scalable, highly resilient, security-rich, on demand operating environment and can allow firms to use their existing custom-built and best-of-breed commercial analytics applications and tools. CoD capability is designed to help Insurance institutions more efficiently integrate their risk management processes while improving analytical performance and regulatory compliance.

Examining computing requirements for the Insurance Industry

Providing computing resources on demand requires an infrastructure of high-speed processors and storage that can provide capacity in a flexible, scalable and highly secure manner. Users want seamless access to these resources, regardless of where the physical systems may reside. A computing infrastructure for Insurance Companies should help meet the following objectives:

Scalability: Applications and databases often exceed the capacity of even the largest single systems, so systems need to be enabled to grow with demand.

Security: Insurance analysts and decision makers need a data, information, and knowledge sharing environment that is highly secure.

Flexibility: While they focus on controlling costs, Insurance Services companies need increased flexibility in a rapidly changing environment.

Significant processing capacity: As processing requirements continue to grow, more and more companies are finding that they can benefit from using clustered servers and Grid computing. Clusters link separate nodes to create a single,

powerful, scalable system, while Grid computing increases overall compute resource sharing and utilization.

Flexible financial and delivery models

Insurance companies may be able to benefit from balancing their fixed and variable IT infrastructure and operations costs and from choosing between onsite owned/operated versus offsite hosted IT solutions.

Clustering and Grid computing, combined with a wide range of server and storage technologies, are designed to provide:

- *High availability with failover protection*
- *Scalability with minimal downtime*
- *Large-capacity data volumes*
- *Capability to handle peaks in workload, permitting flexible responses to changing scientific and business requirements*

Computing capacity on demand

Fundamentally, providing capacity on demand is a simple concept. Instead of purchasing computers to meet peak demands, companies can procure sufficient hardware for average demand and then contract remote processing power to help meet peak loads, or offload a majority of processing to a remote

facility. In practice this process can be more complex. However, IBM can help shield customers from much of this complexity—one of the primary advantages of a hosted on demand environment.

High performance computing can have many different requirements, and purchasing sufficient hardware can become expensive. Some problems are computationally parallel, and a large number of servers working in parallel can solve the problem quickly and efficiently. Other problems require ultra-fast interprocess communication or a single large memory model. A hosted environment can supply access to these resources, and instead of paying for equipment that may be underutilized, customers simply pay for the cycles and compute or storage resources that they reserve for a specified period of time.

IBM provides a scalable, highly secure and extensible environment designed to handle dedicated, variable or dynamic workloads. This solution combines the best of IBM technologies and open standards with on demand computing, providing an infrastructure that enables customers to help meet their goals of increased scalability, flexibility, and processing capacity.

Building a world class infrastructure to support the Insurance Industry

With six IBM Computing on Demand Centers currently in operation, members have access to over 14,000 CPUs and 56 Terabytes of storage. IBM CoD centers feature a variety of technologies including IBM POWER, AMD Opteron, Intel Xeon.

How it works

Customers purchase annual base membership to the IBM Computing on Demand center. Base membership includes a “home” management node in the IBM CoD center and a software VPN connection (hardware upgrade available). With support for Microsoft® Windows®, AIX 5L™ and Linux®, members can store their operating system, software stack, and licenses on the management node. With a customized environment already in place, capacity can be reserved and added quickly and easily.

Customers maintain root control of the compute and storage resources within their assigned environment. A robust, security-rich networking infrastructure, including remote access through VPN, is designed to keep customer data and applications highly available.

Mitigate Data Center constraints

For those with constrained Data Center space, power, and cooling, CoD provides offsite alternatives to traditional server purchases. Offering programs allow you to purchase just the amount of compute capacity you need.

Capacity is available through highly flexible and cost effective contract terms.

- **Dynamic:** hourly commitments
- **Variable:** weekly commitments
- **Dedicated:** yearly commitments.

In all cases customers can, subject to availability, supplement in-house computing capacity with IBM hosted compute clusters and storage, which can help clients to respond to peak or long-term compute capacity requirements and capture business opportunities that might otherwise be out of reach.

Delivering on demand resources

The on demand computing model is economical, enabling customers to enjoy flexible compute capacity, pricing, and terms, which can help lower both operating costs and fixed infrastructure costs. This computing model also can help reduce infrastructure complexity, IT training and staffing and ongoing maintenance and upgrades. Customers can

focus on their core development and business while increasing insulation from rapid information technology shifts and asset turnover.

IBM is extending its leadership in deep computing to the on demand environment. By combining leading IBM technologies, advanced cluster and systems management capabilities, growth and innovation in Grid Computing, Virtualization, and industry expertise, IBM is delivering solutions designed to enable Insurance customers to conduct their business more efficiently and effectively in a highly competitive market.

Test drive a cluster today!

Reading the offering literature is a great introduction to IBM Computing on Demand, but there is no substitute for first-hand experience. When you are ready to experience CoD firsthand, please register for a test drive at ibm.com/deepcomputing/testdrive.

For more information

- IBM Computing on Demand: ibm.com/deepcomputing/cod
- IBM Deep Computing: ibm.com/deepcomputing
- IBM Insurance Solutions: ibm.com/industries/insurance

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