



IBM and Business Partners GGY and Platform Computing team to offer state-of-the-art analysis of variable annuity portfolios

Overview

■ **Challenge**

To provide actuaries with dramatically increased capabilities to address business expectations. Required are unprecedented speed, flexibility and accuracy in the analysis of variable annuity portfolios.

■ **The heart of the matter**

The need to analyze hundreds of thousands of policies over thousands of scenarios in a short time frame is paramount in the insurance industry. Of equal importance is meeting the ever-increasing demands of actuaries and senior management for valuation, modeling, compliance and developing Risk-Based Capital standards.

■ **Solution**

Combine the power of GGY's AXIS Actuarial System 11.2 with the new Stochastic Processing module, managed by Platform Computing's Symphony grid management software, while agile, resilient IBM @server® BladeCenter™ and xSeries® systems provide an "always on" hardware platform.



■ **Key Benefits**

- The ability to model seriatim records (records in a series) accurately and at high speed
- AXIS DataLink module to readily map seriatim data to AXIS cells
- Tracking of multiple funds per policy
- Support for multiple reinsurance treaties
- Built-in scenario generators, or actuaries can import their own
- Fault tolerance and dynamic load balancing system support
- A highly scalable solution well suited for both current and future requirements
- A maximized return on investment (ROI) in IT resources.

"More and more companies are looking for a cost-effective way to move to compute-intensive stochastic processes while minimizing the human intervention needed to keep this work on track. Working with Platform Computing and IBM Global Services, we can offer a breakthrough solution based on grid computing and power on demand. This puts us way out in front of the competition."

Bill Young,
President of GGY

First things first. Why grid?

In an uncertain business climate, the combination of market swings, sub-optimal utilization of infrastructure capacity and the need for high reliability places enormous pressure on businesses of all sizes to find ways of reducing costs. To do this, enterprises must identify, obtain and leverage an infrastructure that maximizes system utilization and provides a responsive, highly available computing environment.

Because businesses must process data faster and faster to remain competitive, enterprises must deploy infrastructures of virtually infinite scalability without fear of depleting that capacity. Enterprises and the software vendors that support them now realize that grid computing can help them achieve this scalability, maximize their return on investment in IT resources, reduce costs and improve the overall quality of services. In addition, by having grid computing available anytime, anywhere, enterprises can effectively manage dynamic changes in their business environments, rapid growth, and unforeseen market shifts.

Grid computing works best in environments that are resilient, flexible and tightly integrated. Today, organizations with such environments are seeing real, substantial benefits from grids, a technology anything but mainstream a few years ago but quickly becoming an important milestone in the evolution of computing.

AXIS 11.2, the latest and best

GGY's *AXIS* is such a system for the insurance industry. *AXIS* is modular, runs on a Windows desktop, workstation or server, and can scale to over 64 processors through distributed processing and grid technology. Training, documentation, full-time customer support and on-going product enhancements are intrinsic elements of *AXIS*.

AXIS 11.2 contains many tools for production environments, including audit trails and system formulas, which provide an extensive Visual Basic for Applications-based batch language to automate repeated tasks. On the business side, *AXIS* 11.2 offers insurers an integrated framework for pricing, valuation and modeling,

including asset / liability management and stochastic processing.

"Stochastic processing is important in order for management to understand the risks involved with some of today's complex insurance and investment products. Emerging capital requirements and reserve standards are based on the processing of thousands of stochastically generated scenarios," says David Gilliland, actuary and co-founder of GGY.

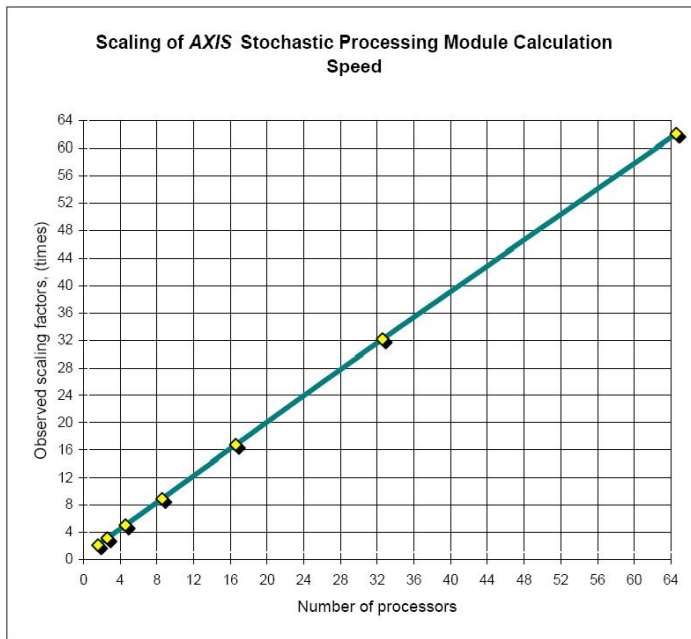
AXIS is a fully object-oriented system with an exceptional range of functionality, including both actuarial and user interfaces. Modules currently comprising *AXIS* 11.2 are:

- Regular Life
- Universal life
- Par Products
- Disability
- Annuity
- Group Annuity
- Asset and Reinvestment
- DataLink
- ScenarioTools
- Stochastic Processing

IBM, GGY and Platform team to create high levels of manageability and scalability

John Hancock, a subsidiary of Manulife Financial, the fourth largest life insurance company in the world, is using the *AXIS* Stochastic Processing module to analyze the variable annuity blocks written by itself and Manulife. While the module can leverage distributed processing, performing a comprehensive analysis of considerable scope within days of the end of each quarter can require as many as 16 processors. GGY has worked closely with Platform Computing to integrate GGY's *AXIS* with Platform's Symphony Grid management software to automate the deployment and management of this process.

IBM has provided hardware and software support around the project, and using actual John Hancock data (with confidentiality of client information fully protected), a successful series of extensive tests were performed in the IBM Innovation Center in San Mateo, California. These tests show that *AXIS* can scale very effectively to 64 processors and beyond in a grid-enabled IBM environment. The collaboration between IBM, GGY and Platform provides an excellent solution to a problem the life insurance industry is facing, that of offering remarkable flexibility, accuracy, speed and ease of use.



Benchmarks tell *AXIS* with grid story

Numerous benchmarks confirm the significant gains in actuarial capability that are possible when using the *AXIS* Stochastic Processing module. For example, this table illustrates the time to process 100,000 John Hancock records through 1000 scenarios using Xeon 3.2 processors under Windows 2003 Server.

Number of processors:	1	4	16	64
Estimated run time:	275hr 58m	70hr 45m	17hr 41m	4hr 32m

GGY's *AXIS*, Platform Computing's Symphony and cost-effective, low-footprint IBM @server BladeCenter systems can provide a complete solution for insurance industry customers considering grid computing. *AXIS* is also interoperable with IBM @server xSeries, IBM TotalStorage systems and IBM workstations, which helps customers simplify software and hardware purchasing decisions.

"IBM BladeCenter provides a fully scalable, robust and compact platform ideally suited for grid computing with our *AXIS* actuarial system," says Phil Gold, VP R&D and co-founder of GGY.

Platform Computing provides the essential management layer that provides ease of use and control to a grid-enabled computing environment. Platform's Symphony product is a grid computing software layer that manages the distribution of work to each of the servers or workstations in the network, as well as the collection of results. The user need not worry about having to start helper processes on remote machines. The user does not have to worry about failures on any one of the remote machines. Jobs are simply started and they are run under the control of the grid.

GGY has worked with Platform Computing to grid enable *AXIS* for ease of management and automated provisioning in large production

environments. *AXIS* and Symphony together provide exceptional scaling, fault tolerance and dynamic load balancing.

"Business expectations are constantly increasing for the accurate forecasting of risk associated with variable annuities. The elements combined within the *AXIS* grid solution represent an advanced model of addressing this business need while providing increased levels of computational capability, cost effectiveness, scalability and manageability," said Doug McKenzie, national principal, IT Optimization and Grid Computing Services for IBM.

"Customers can now also obtain the advanced functionality represented by Platform Symphony, and they can use IBM Global Services consultants to assist with integrating this solution into a business's IT infrastructure portfolio and business processes."

IBM grid resources for independent software vendors

For ISVs considering grid computing, IBM Innovation Centers offer **Think Grid Workshops**, three-day training sessions that cover grid computing core technologies. Provided are an introduction to grid computing, hands-on experience with the grid computing framework, instructions on how to enable applications in a grid environment and a road map for grid enablement of the participant's application.

The IBM Innovation Centers also provide access to the **IBM Solutions Grid**. This grid-computing environment lets ISVs test their software in actual distributed grid processing scenarios. The IBM grid offers:

- Technical consultants skilled in grid technologies
- Access to geographically dispersed IBM @server systems, networks, and storage resources
- Access to key grid software infrastructure components from IBM and Business Partners such as DataSynapse and Platform Computing
- IBM middleware that supports grid computing, including IBM WebSphere® Application Server, IBM DB2® Universal Database™, Lotus® Domino® Server and Tivoli® system management applications.

About Platform Computing

IBM and Platform are working together to help software vendors like GGY build dynamic, virtualized applications that meet business service-level and cost-structure requirements.

Platform Computing offers a range of software solutions to grid enable applications and consolidate IT resources across a shared, virtualized infrastructure.

Platform™

For more information:

Please contact your IBM Sales Representative or IBM Business Partner. Or you can visit us at: ibm.com/grid

For more information on IBM and ISV success stories, visit: ibm.com/isv

For more information about IBM Innovation Centers, visit: ibm.com/partnerworld/iic

For more information about *AXIS*, visit: www.ggy.com

For more information about Platform Symphony, visit: www.platform.com



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