

iReplicate Compression Service

The Antidote for Long Runtimes and Excessive Cloud Costs

The global life insurance industry has seen widespread adoption of regulatory and financial reporting standards requiring stochastic models. This trend has put significant strain on legacy actuarial calculation engines resulting in overly long runtimes. Many insurers have been forced to leverage cloud parallel processing to meet reporting deadlines. However, the pay-as-you-go, variable cost of cloud execution has become increasingly expensive for enterprises, with some insurers quoting cloud-based execution costs of \$5 to \$10 million (or local equivalent) annually.

Stoch Analytics can eliminate these challenges for insurers. In addition to our ATLAS actuarial software which offers unrivalled seriatim CPU compute power, we have developed the iReplicate Compression Service – a game changer which typically **reduces runtimes (and associated cloud costs) by 99% or more** while maintaining high fidelity across the projection period, regardless of the products or valuation methodology.

Achieve Unrivalled Compression and Replication

Trained on a small sample of your seriatim model results, the iReplicate service can **compress seriatim inforce 100 to 500 times (or more!)** in minutes and make your organization's actuarial models run commensurately faster. The service finds a **real subset of your seriatim records** which when scaled replicate chosen seriatim metrics very accurately (usually the **compressed vs seriatim error is**

measured in basis points). The service combines the science of an extremely robust compression optimization algorithm with the art of our teams extensive experience of compressing across different products and applications.

Maximize Operational Efficiency

One automated workflow encompasses all data import and compression tasks and integrates with your organization's existing valuation system **without any significant changes to your existing processes**.

Case Study

Client Objective: Reduce runtime and associated computing charges for an Indexed Universal Life block while not incurring a material distortion in the liability metrics (including sensitivities).

Result: **410 to 1 compression, 99.75% runtime reduction.**

Replication accuracy of the compressed profile.

Run	Relative Difference between Seriatim Liability and Compression Liability Portfolios
Base 300 scenarios	-4 bps
Base 100 scenarios	-2 bps
Rates -100 bps	-8 bps
Mortality Shock	3 bps

Furthermore the **client achieved \$6-8 million of annual cloud cost savings** when they used iReplicate across more lines of business in addition to IUL.

Many additional case studies are available, contact us to learn more!

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