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Many-Task Computing Brings High Performance and Simplicity Into Principle-Based Applications

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Many-Task Computing Brings High Performance and Simplicity Into Principle-Based Applications

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Abstract

Insurance regulations are undergoing a paradigm shift in determining capital and reserves. With Solvency II in Europe and principle-based reserving in the United States, the old formula-based static approach is being replaced or supplemented by a principle-based dynamic method. This change requires enhanced modeling, stochastic simulation and sensitivity analysis, which pose challenges to insurers whose infrastructure has not been built for big computation. This paper introduces a method of building complicated models with small reusable modules and running them on a many-task computing platform to achieve high performance with simplicity. The paper presents an example of a term life insurance model built to take advantage of computer hardware for parallel computing at the task level.

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