

## The Analytics

### BoundaryRider

The BoundaryRider risk engine is a flexible, multi-faceted system that is easily configured to meet your requirements. It provides a flexible interface for product pricing libraries or can use its own, has user-definable curves and rates, has an interface to enable the addition of new or customised stochastic processes and is fully accessible as a stand-alone engine or as a core part of the BoundaryRider system.

There are four basic exposure calculation methods but there is also an interface to allow users to add in their own exposure methods at a trade or portfolio level. There is also a flexible regulatory exposure calculation mechanism which can be customised to meet Basel II no matter which methodology you plan to use.

### Monte Carlo

Our Monte Carlo is a standard simulation method which calculates scenario paths to enable full simulation of trades and portfolios through time. Naturally path dependent trades are catered for within the simulation framework and have their own special flexible history-keeping functionality to cope with the most unusual of such trades.

The calculations for exotic options have a mechanism in place to check the condition(s) associated with the trade even at arbitrary dates that are not already defined within the portfolio.

This set of dates then triggers a new rate scenario generation and subsequently allows the checking of the conditions around the trade. In an extreme case, this could mean that forward rate scenarios might need to be generated for each path on each day going forward to the maturity of the trades.

Our Monte Carlo doesn't take short-cuts over the maturity profile. It calculates exposure at all important time points rather than "guessing" at the exposure in between a limited set of nodes. This ensures that spiky exposure profiles are well described and there are no nasty surprises!

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### RiderNet

The RiderNet method is a proprietary method used in the BoundaryRider system for rapid portfolio credit exposure calculations up to 100 times faster than Monte Carlo. Unlike Monte Carlo, RiderNet is not a path dependent process. Consequently, the condition checking for path dependent trades is based purely on rate conditions prevailing at the time of the scenario of the calculation and so portfolios with many such trades should be calculated with one of the other methods. RiderNet comes into its own for large portfolios where there are many vanilla trades where performance gains are very large.

### RiderSim

RiderSim is a portfolio calculation method providing the best of both worlds. It utilises the performance enhancements of RiderNet with the path dependent features of Monte Carlo to allow high quality portfolio exposures to be calculated even for portfolios containing path dependent trades. Where there is a mix of vanilla and exotic trades the performance benefits of the RiderNet elements will be substantial.

### HistSim

HistSim is a historic simulation method primarily used for calculating market risk exposures. This utilises historic data to generate possible future scenarios for portfolio valuation. The advantage of historic simulation is the absence of any need for assumptions around stochastic processes and rate distributions.

## BoundaryRider's key advantages

BoundaryRider's key advantages are its speed and flexibility. It opens the door to more accurate exposure measurement in real-time for both market and credit risk combined with the ability to utilise a customer's existing pricing and curve management infra-structure if desired.