

## Next Generation Algorithmic Stability Testing without disclosing your Algo IP

Both Trading & Execution algorithms can misbehave. When they do so they can seriously affect the proper functioning of an electronic market – a matter of increasing concern to financial regulators. No matter how carefully an investment firm has tested an algorithm, there is always a threat that it will go off the rails once committed to live trading, particularly if it meets extreme market conditions not experienced previously in simulated trading. How it will behave in the company of other algorithms is also a key concern given the effect this could have on the market.

AlgoGuard is an independent algorithm test service based on TraderServe's unique orderbook emulation and stress test technology. The aim is to give an investment firm confidence that its algorithms will behave stably in live trading and that it can satisfy the regulators that it has gone to sufficient lengths to ensure that the algorithms should not contribute to a disorderly market and that it has striven to meet the stringent new algorithm testing requirements by including independent testing - yet without having to disclose their algorithm IP.

TraderServe's AlgoGuard includes customisable test scheduling allowing your algorithm's orders to interact in the same order book with other algorithms and with a realistic emulation of the market. It can examine how stable your algorithm's behaviour is in normal and extreme conditions, and can also explore the algorithm's disposition to contribute to the sort of emergent market disorder that can be caused by the interaction of diverse algorithms in a live orderbook. No amount of testing with market replays can address these concerns, but AlgoGuard can offer independent protection to help prevent your going live with a vulnerable algorithm. Investment firms receive an orderbook feed from the AlgoGuard server and send their orders and cancellations exactly as in live trading. AlgoGuard's customisable scheduling tests in both normal and stressed market conditions of multiple types, and with and without different classes of antagonist algorithms designed to probe for propensity to contribute to market disorder. Its reports then provide independent, audit-trailed evidence of algorithm stability including pass/fail testing with drill-down analytics for essential Algorithm Stability Testing.

AlgoGuard accepts limit and market orders and allows matching within its orderbook on a FIFO or Pro-Rata regime. Where published, other order types and matching rules can be added on a bespoke basis.

### Key Features

- **Seamless & Transparent:** Client's access to AlgoGuard can be customised to be similar to the intended trading venues
- **Representative & Isolated:** Statistically samples historical orderbook data and maintains a representative market in the test matching engine whilst being completely isolated from any risk of live trading.
- **Responsive & Dynamic:** The emulated market closely resembles the real market in all important respects including spreads, volatility, volume, fill to cancel ratio. In consequence it responds realistically and dynamically to the algorithms under test.
- **Private:** Clients' algorithms never leave their own servers, only orders are sent to AlgoGuard in response to data and fills sent to the client's algorithms. These orders combine in a dedicated test matching engine only with AlgoGuard algorithms and are isolated from other clients' orders.

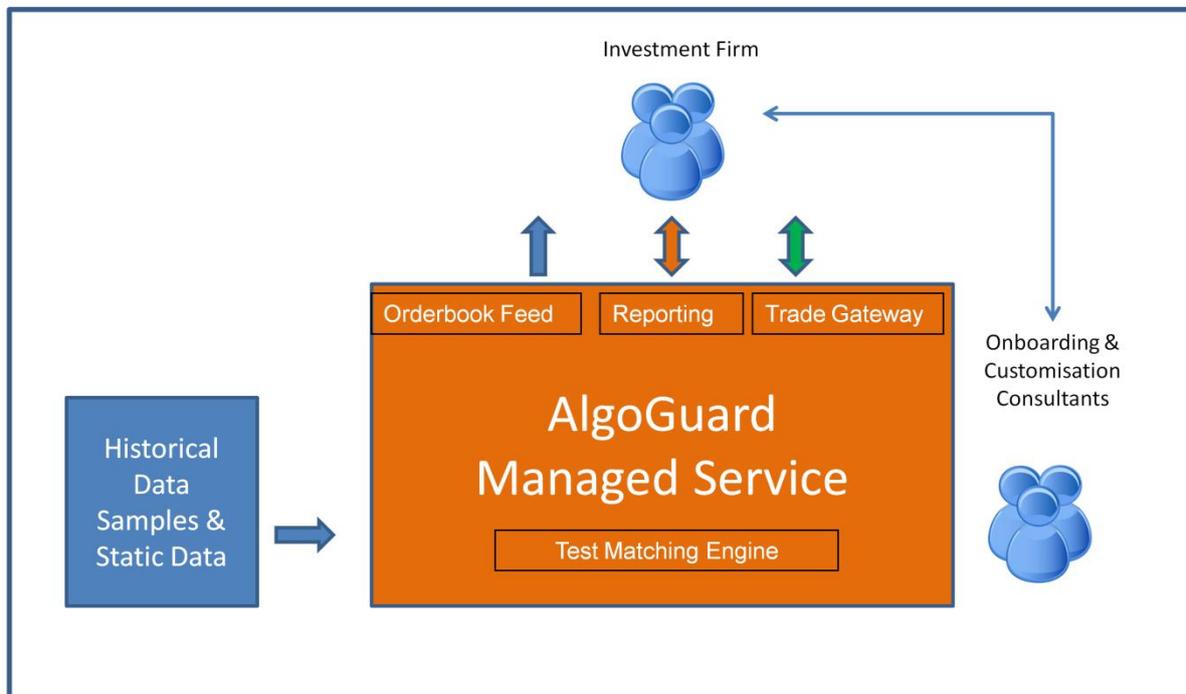
- **Stress Tests:** Customisable test schedules under the control of the client can stress test the market in a variety of ways so that the potentially disruptive behaviour of connected client algorithms and execution systems can be assessed.
- **Compliance & Logging:** Helps clients to meet the increasingly stringent testing requirements for algorithms and execution systems being imposed in many jurisdictions. Stores test results for as long as required by regulation.
- **Pass/Fail Reporting & Traceability:** Dashboard provides control and reporting to client's staff. Provides Pass/fail reporting for member algorithm's provocation of market disorder with drill-down analytics.
- **Multi-market:** for stability testing of multi-market client algorithms there is the option of including customisable test matching engines to emulate multiple trading venues published rules.

TraderServe's AlgoGuard is fully multi-asset class and is already proven in production at a major exchange. AlgoGuard is based on the core TraderServe platform used for high volume and low latency trading on exchanges worldwide.

Contact [marketing@traderserve.com](mailto:marketing@traderserve.com) for more information



**for Investment Firms**



## Algorithm Stability Testing

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