

Apama Architecture

Apama is the market-leading platform for the design, development and deployment of sophisticated Complex Event Processing (CEP) applications that can monitor event streams, detect and analyze event patterns, and take actions immediately. The Apama platform focuses on a real-time event pattern detection model that operates on inbound event stream data as the events occur. Its event-based architecture ensures real-time operational responsiveness to big data in motion or high-velocity event data of any kind.

Key Benefits

Whether it's market data in capital markets, call detail records in telecommunications systems or sensor data in transportation and logistics, the productivity, performance and integration of the Apama platform easily enable the development of scalable, high-performance, low-latency event-based applications. Apama's CEP architecture eliminates the latency of traditional systems that store and index event data prior to analysis. With its patented event-processing model, the Apama platform can detect time-based, attribute and location-based relationships with unparalleled responsiveness. And with Apama, you can support hundreds of thousands of individual event-processing scenarios operating simultaneously, providing scalability that is unmatched in the industry.

Apama's toolset is specifically designed for technical and business users and covers the full life cycle of event processing application development. From graphical design tools, developer-centric editors and debuggers to production profilers, research and back-testing utilities, the Apama platform provides a complete suite of mature, market-leading technology that is accessible to a wide range of users. Analysts, developers and administrators can leverage tooling tailored to their specific needs to build and manage the full life cycle of CEP applications. The Apama platform provides a set of capabilities uniquely suited to building scalable, event-driven applications and is focused on four overarching themes: productivity, performance, integration and management.

Features

Productivity

The Apama platform provides a complete suite of highly integrated tools for the developer and business analyst to build CEP applications. The integrated nature of the tooling allows both business users and IT to collaboratively develop and evolve CEP applications. Developers can build, debug, profile and maintain best-practice behaviors or specific analytics that can be provided to business users for them to re-use in a plug-and-play environment. This provides the business users with the ability to quickly and more autonomously achieve their goals.

Performance

Once created, Apama event-processing applications execute within one or more Apama correlators that monitor inbound event streams for patterns that match conditions defined within the Apama CEP application. These correlators support a unique, multi-dimensional filtering mechanism that quickly sifts through multiple event data streams, detects the sought after patterns and identifies appropriate responses as specified by the application—within milliseconds or less.

Apama supports flexible configurations with multiple correlator instances across multiple hosts, if required, to distribute inbound events for horizontal scaling of deployments. Equally important is a flexible means to process events in parallel on a multi-CPU/multicore. Each correlator incorporates a high-performance scheduler that squeezes the most out of system threads and multi-CPU/multi-core processors and delivers massive vertical scalability through a clean language semantic that minimizes multi-threading programming problems.

Integration

The Apama platform includes a robust integration framework with adapters for different event streams and APIs for customization and integration within different application environments. The Apama Integration Adapter Framework (IAF) facilitates bi-directional exchange with event sources and includes:

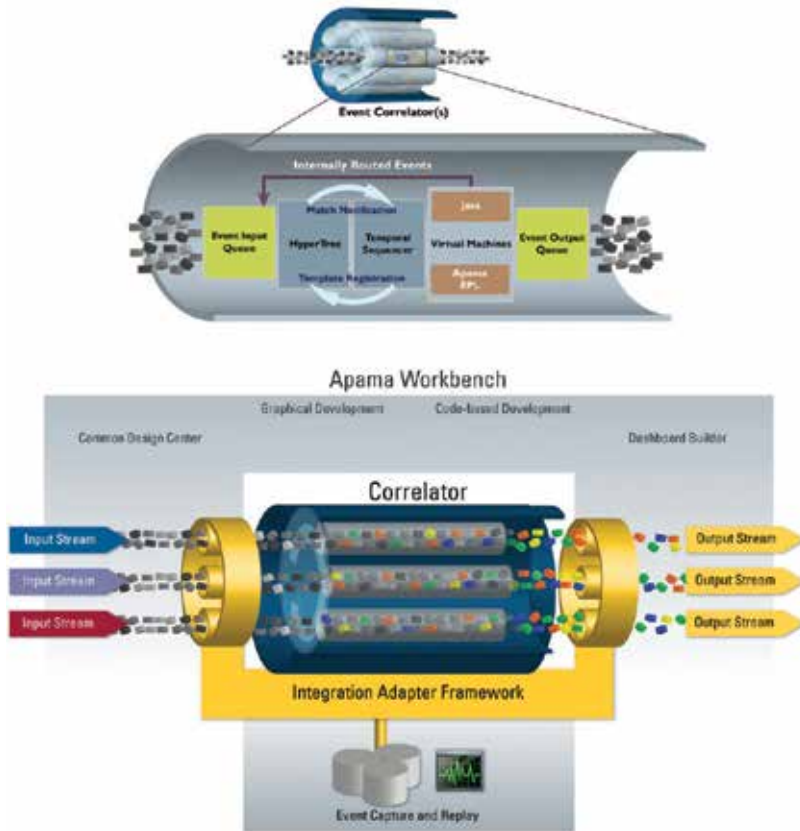
- Packaged adapters for a wide range of capital-markets-specific data sources as well as infrastructure connectivity to database and messaging sources

- A toolkit to develop adapters for integration with new data sources
- APIs at the dashboard, client and correlator levels, providing integration with a variety of environments (e.g., Java®, Java® Beans, C, C++ and Microsoft® .NET.)
- Pre-packaged adapters that integrate with event streams carried by the most popular middleware (SonicMQ®) and databases (any open database connectivity or JDBC® capable database)

For testing and analysis, Apama incorporates event-storage capabilities that persist events for later event replay and analysis. Event streams can be captured and written to any standard data store so that new event-processing scenarios can be tested prior to deployment in live production environments. Also featured is the data player that offers a highly interactive replay capability that allows the designer to select a particular date, time and duration (and the specific event streams) against which to test processing scenarios. Additionally, Apama executes an audit trail of event processing operations, allowing organizations to analyze application behavior in production.

Management

The Apama platform offers a central graphical console for system administration across multiple components and multiple machines. Via this console, individual event processing modules are configured, initiated and terminated. The environment fully supports a wide range of fault-tolerant platform operations, including recovery in the event of failure.



An overview of the Apama product architecture



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SAG_Apama_Architecture_FS_Feb14