

Automated Trading System Development with MATLAB®

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Computational Finance

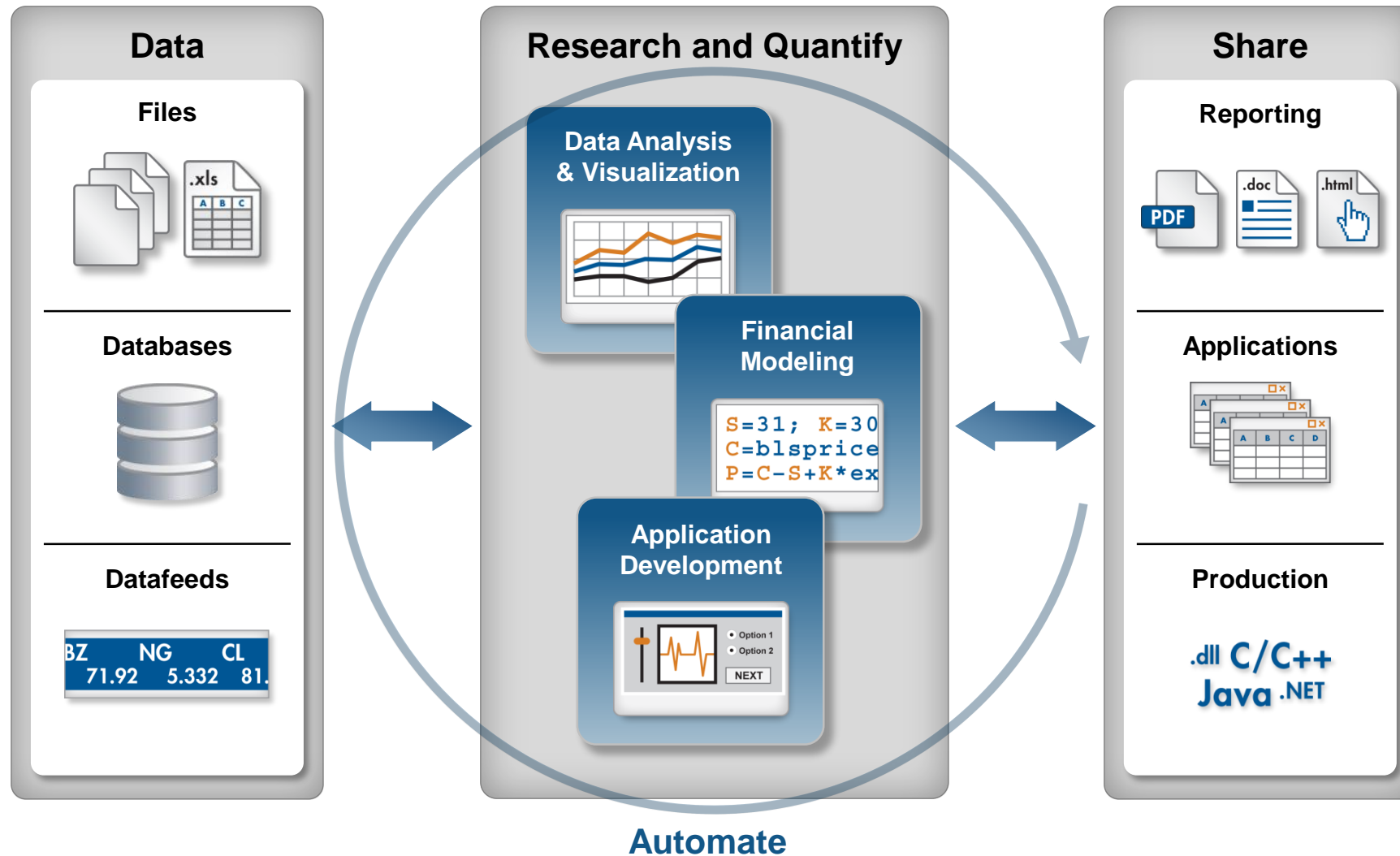
Agenda

- Challenges in creating an automated trading system
- Automated trading workflow
- Designing an event-driven trading system in MATLAB
- Tools for High Frequency Trading
- Additional Resources

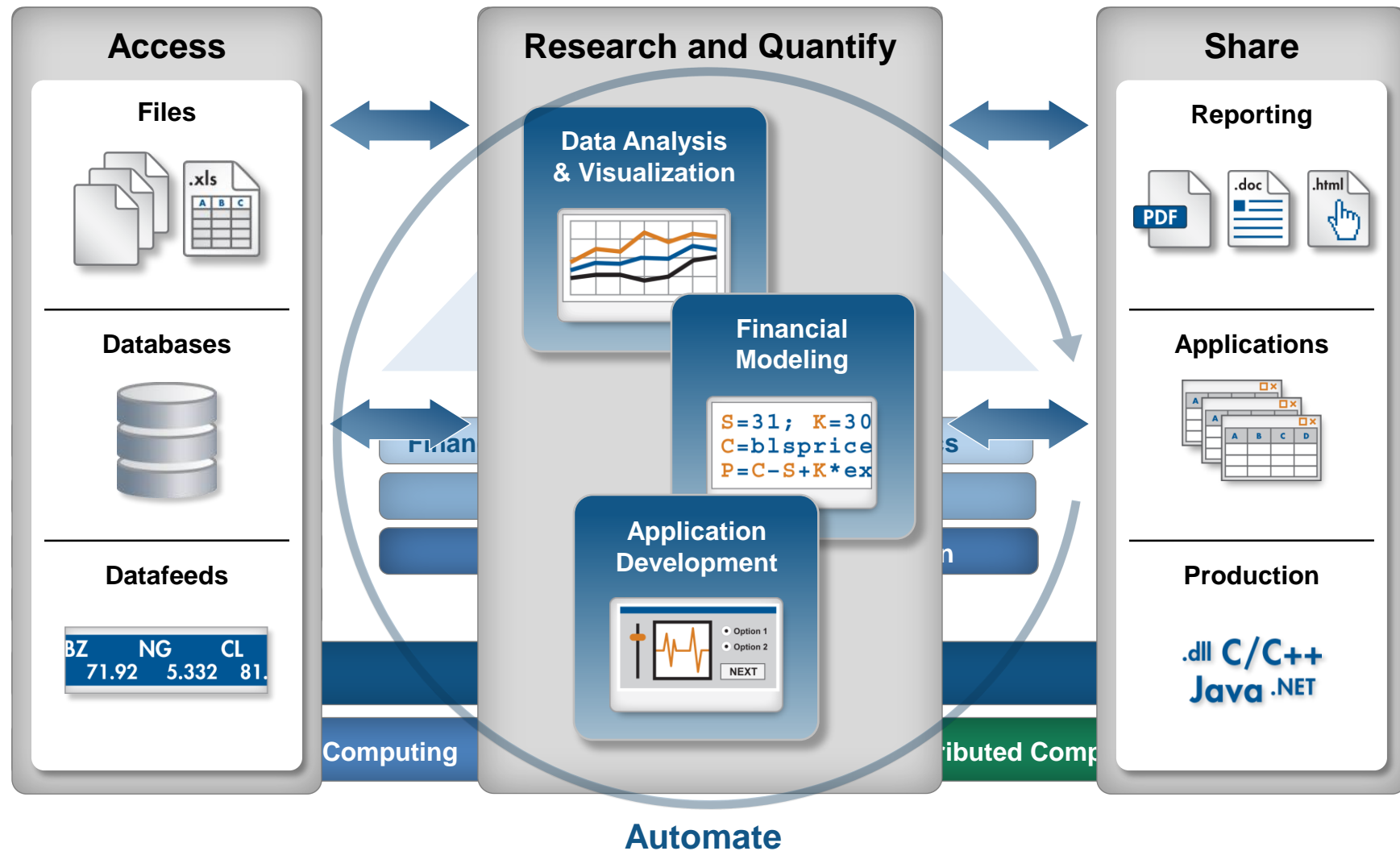
Challenges in Developing Automated Trading Systems

- ❑ Black boxes: Inability to customize models or add new algorithms
- ❑ Long development time
- ❑ Ability to work with multiple data feeds and trading venues
- ❑ Need for complex, numerically-intensive computations
- ❑ Time and cost for developing and deploying applications

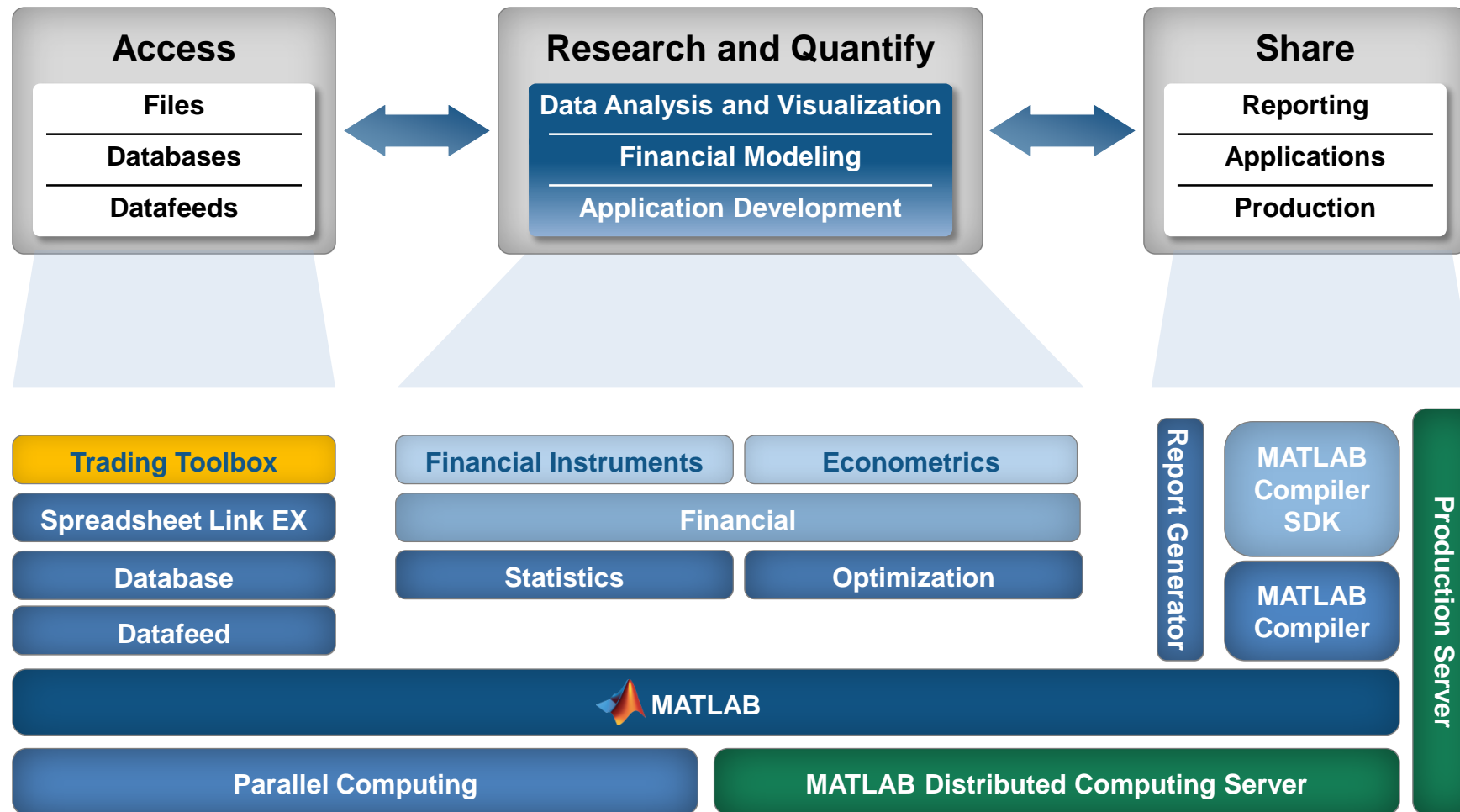
Automated Trading System Development Workflow



MATLAB – Automated Trading System Platform



MATLAB – Automated Trading System Platform



Demonstration: Event-based Automated Trading with MATLAB



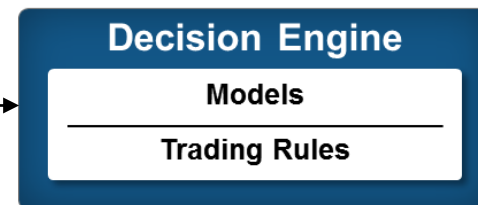
Streaming Data

BZ	NG	CL
71.92	5.332	81.



Historical Data

Trading Strategies

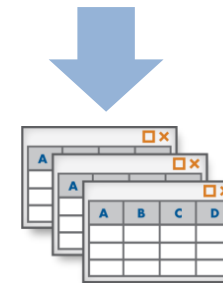


New Strategies

Trading Venue

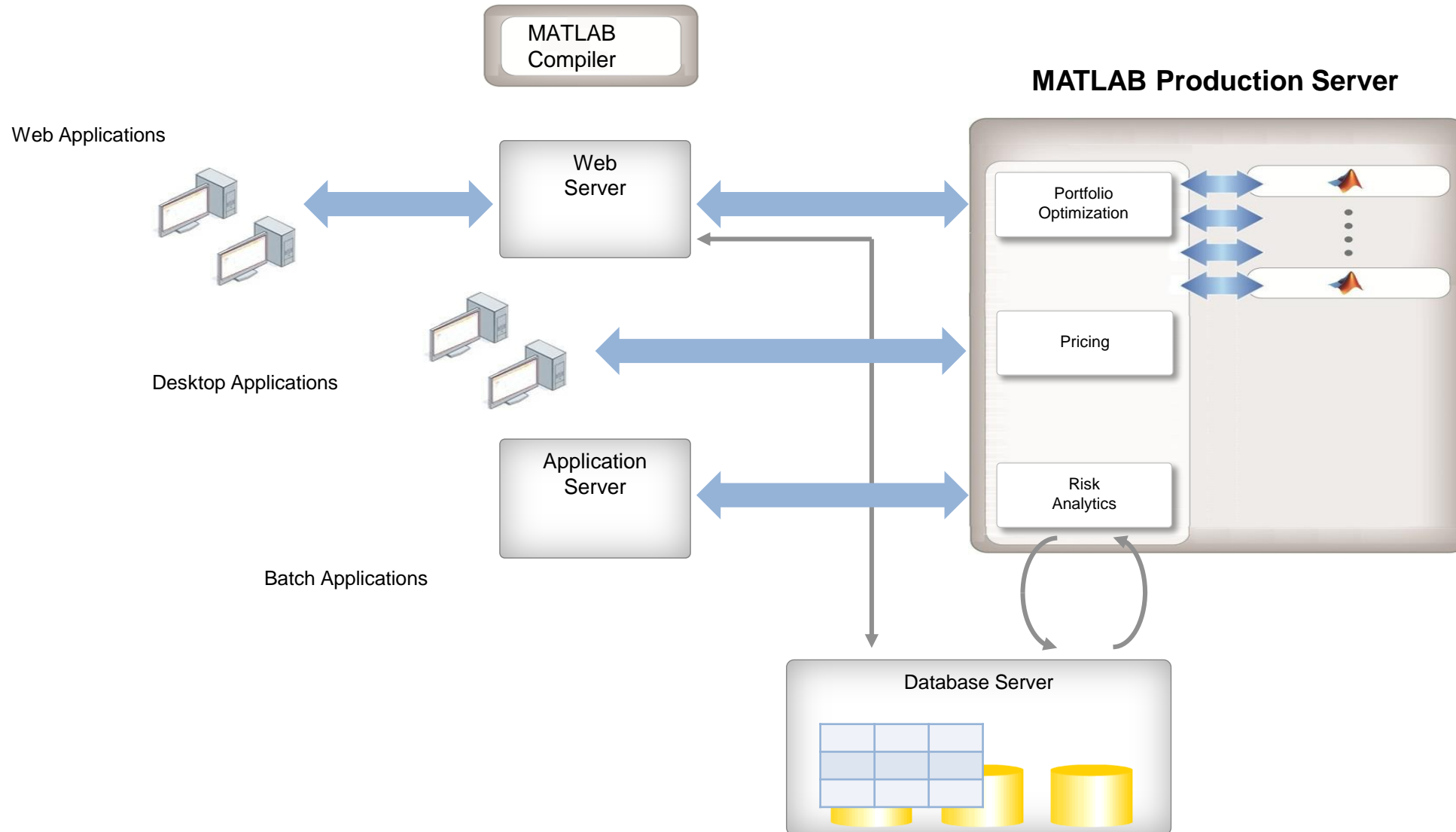
Status	Filled	Remaining	Avg Fill Price	Id	Parent Id	Last Fill Price	Client Id	Why Held
As Pending	0	2	0.0		0	0	0	

Trade	Size	Bid	Ask	AskSize	Total Volume		
AAA	787.3300	1	787	787.8800	1	308	
BBB	20.3100	8	20.3100	1	20.3100	41	717
DDDD	23.3200	1	23.1700	4	23.3500	10	123



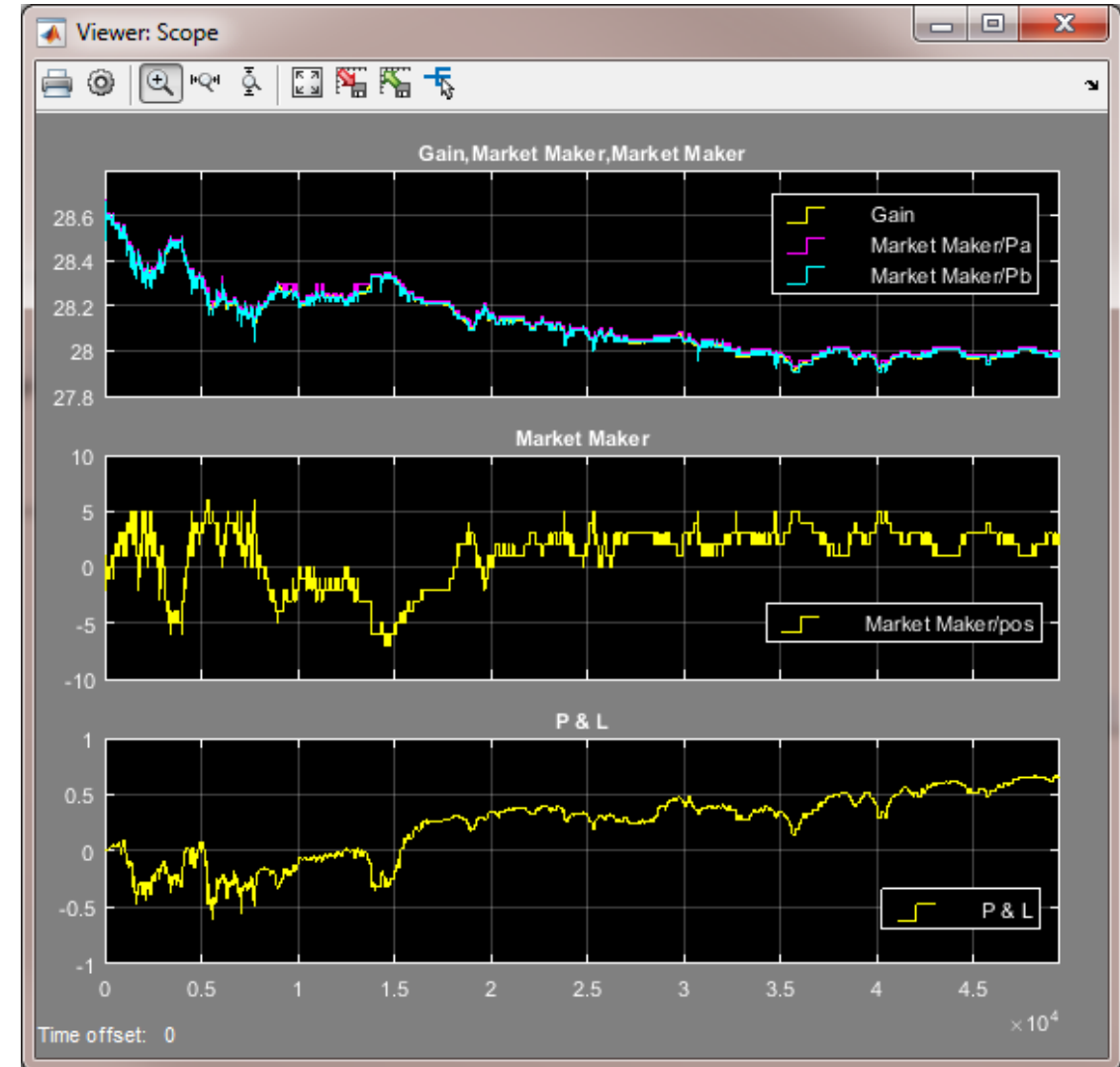
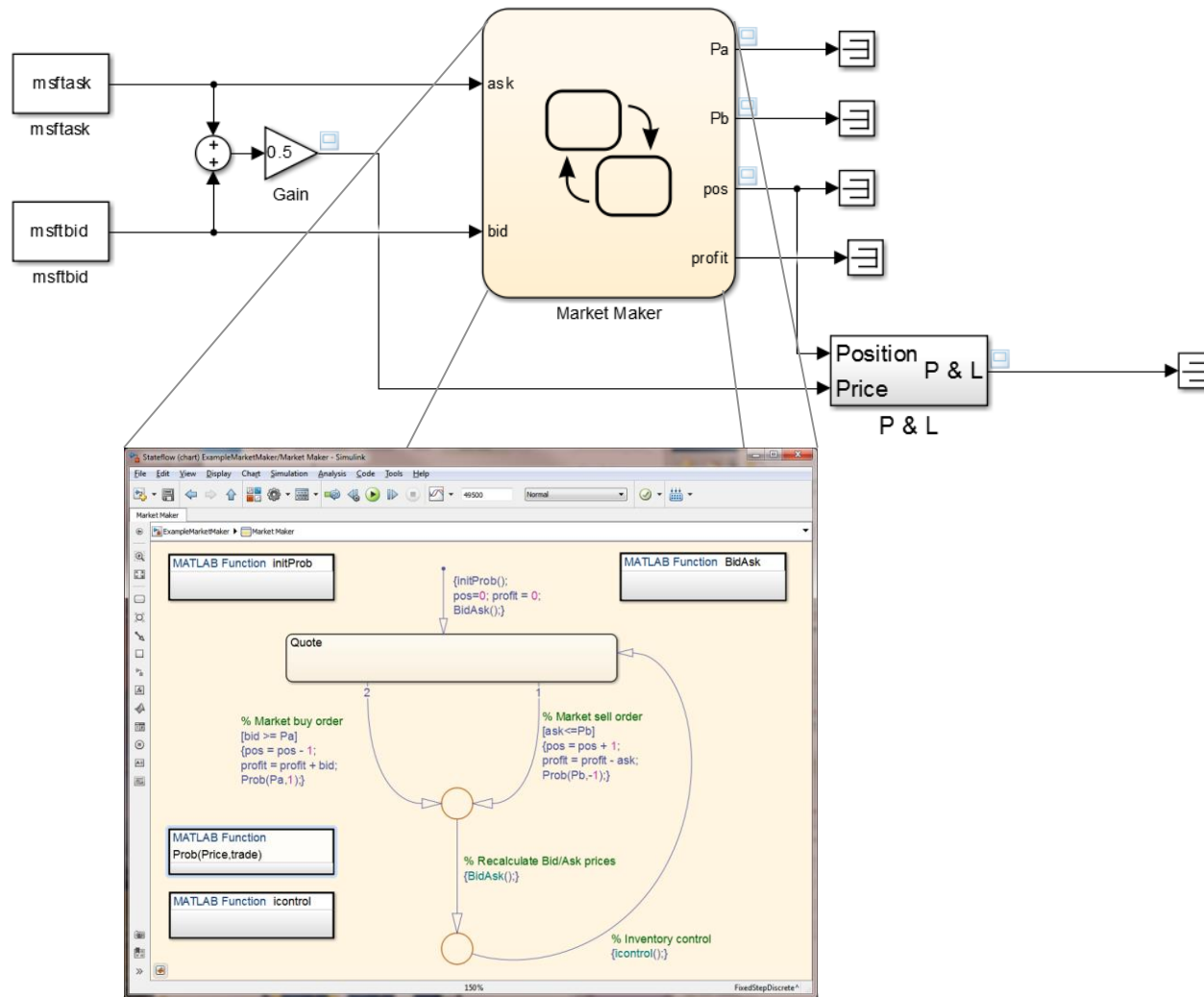
Trading Records

Reuse: Sharing algorithms across the organization



High Frequency Trading Algorithm Development

Bayesian Market Maker in Simulink and Stateflow



Additional Trading Related Webinars

- **Algorithmic Trading with MATLAB for Financial Applications**
- **Commodities Trading with MATLAB**
- **Equity Trading with MATLAB and FactSet**
- **Automated Trading with MATLAB**
- **Cointegration and Pairs Trading with Econometrics Toolbox**
- **Energy Trading & Risk Management with MATLAB**

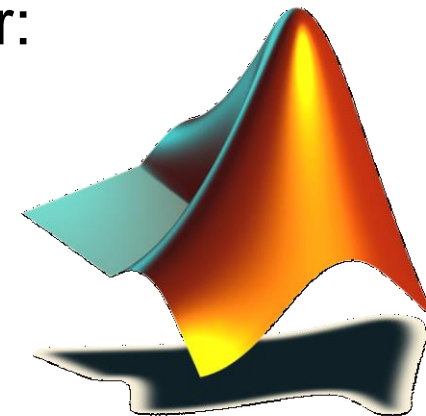
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Thank You!