

MATLAB EXPO 2017

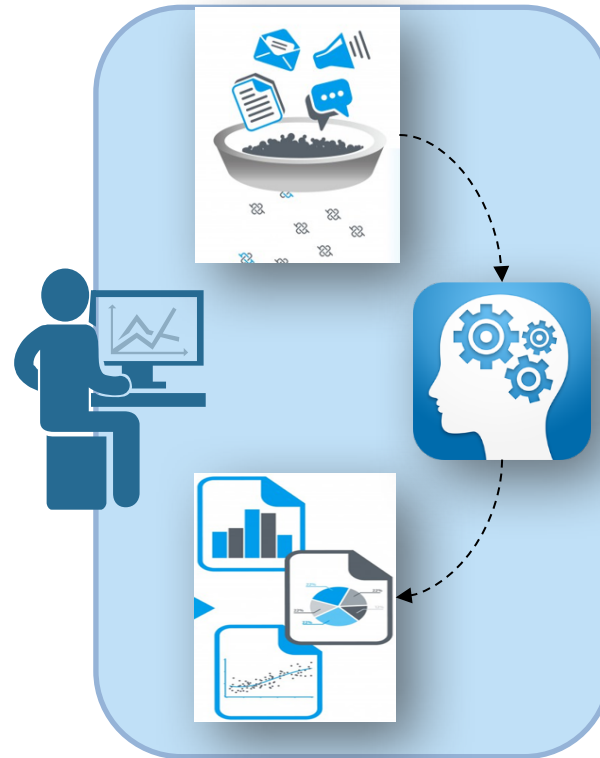
Sharing and Deploying MATLAB Programs

Dr. Harald Brunnhofer

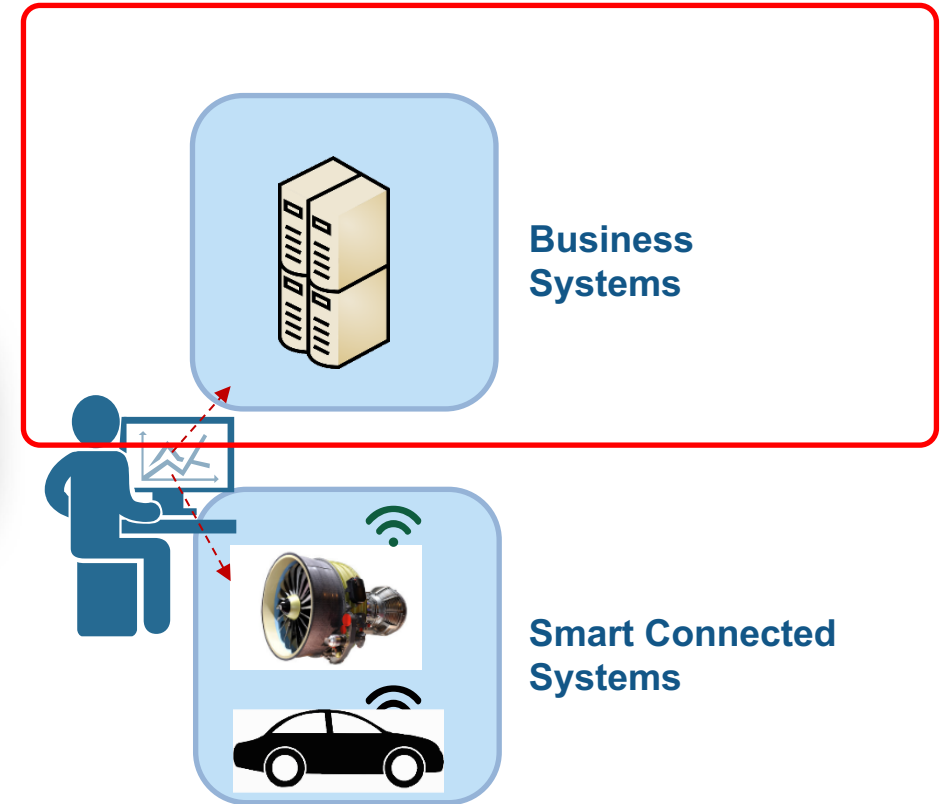
Data Analytics Workflow



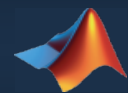
Data Acquisition



Data Analytics



Analytics Integration



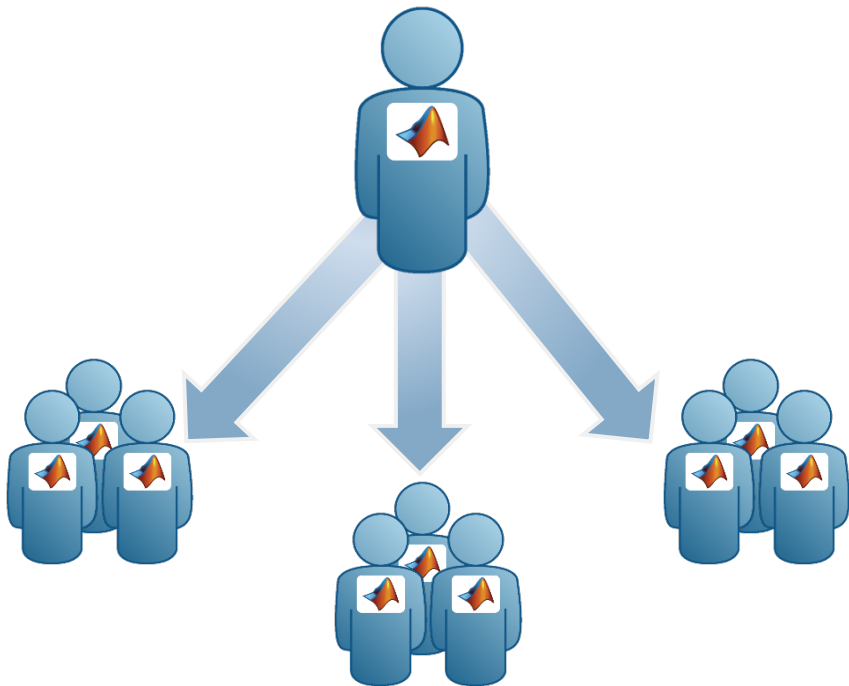
MATLAB: Single Platform

Challenges

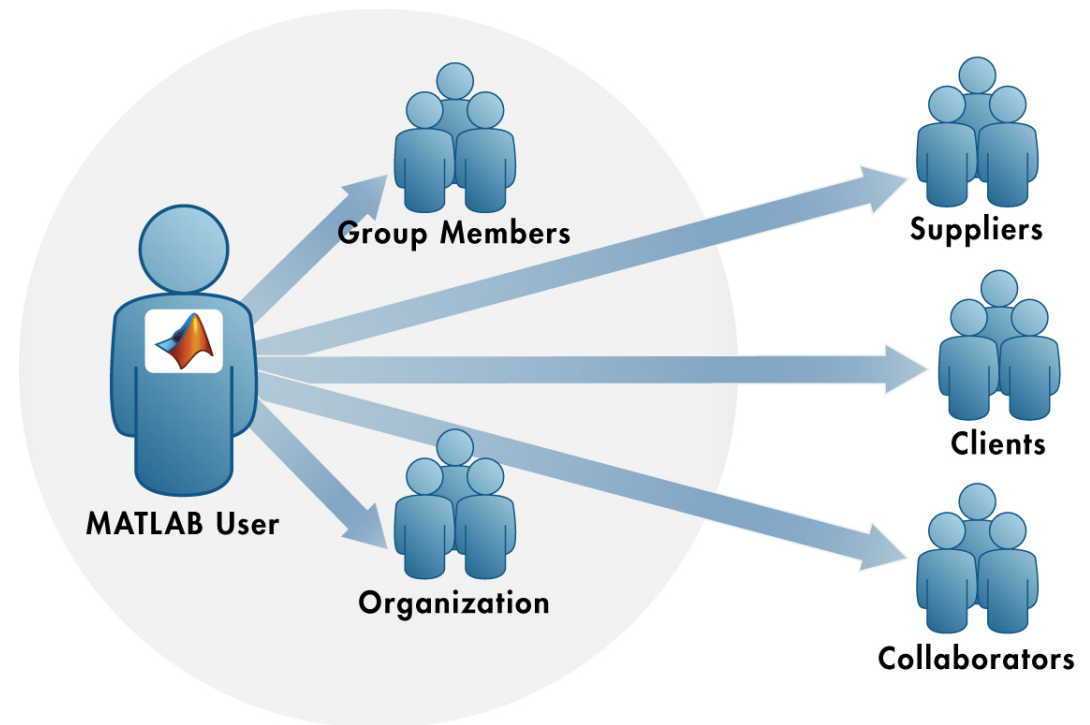
- How to share MATLAB algorithms with multiple internal and external consumers
 - Both MATLAB users and non-MATLAB users
- Challenging and time consuming to re-code MATLAB algorithms for integration into IT frameworks
 - Development resources are scarce and time-to-market is short
- Difficult to migrate solutions to enterprise scale web or cloud frameworks
 - Scale application to serve large numbers of simultaneous requests

MATLAB Programs Can be Shared With Anyone

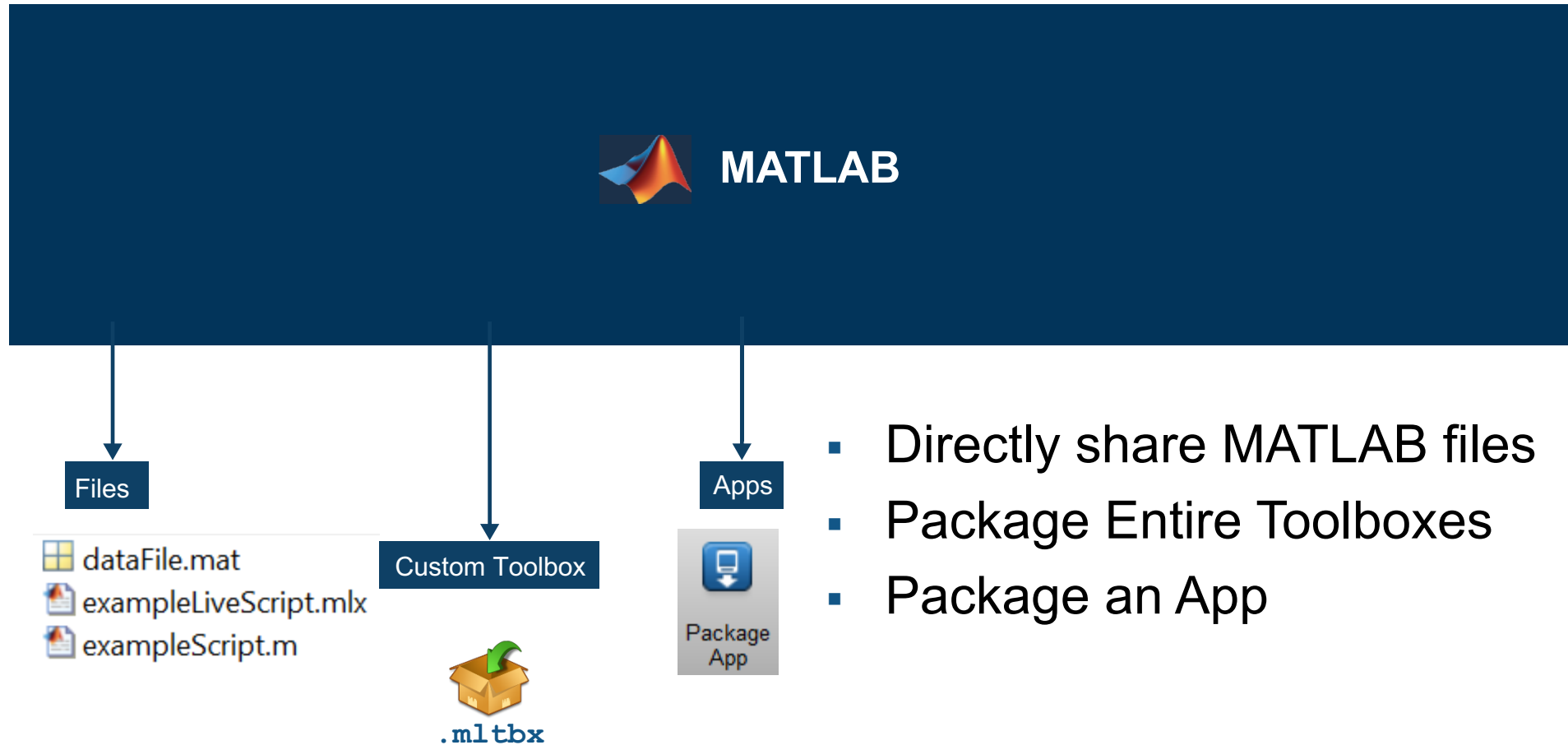
Share With Other MATLAB Users



Share With People Who do Not Have MATLAB

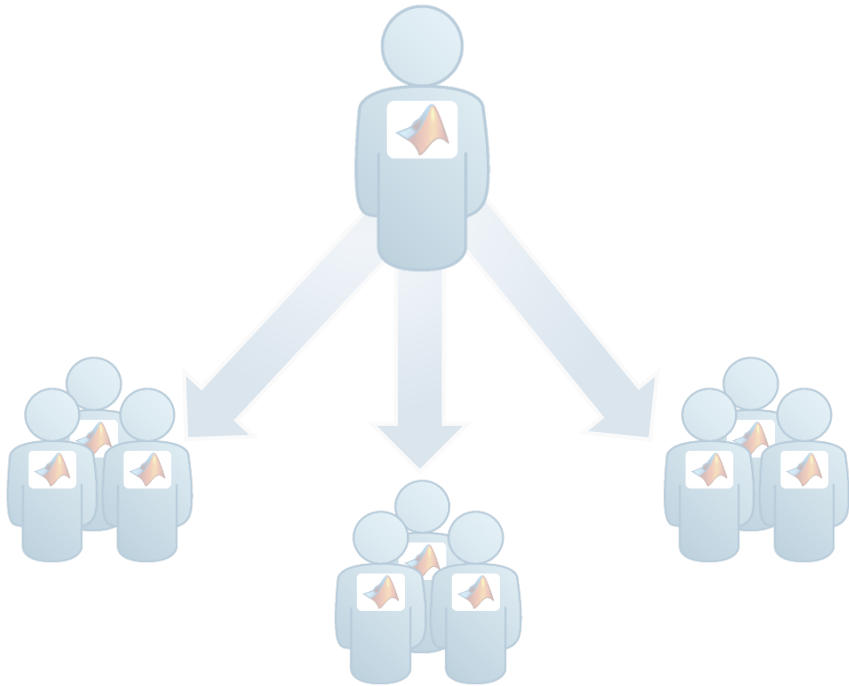


Share with MATLAB Users

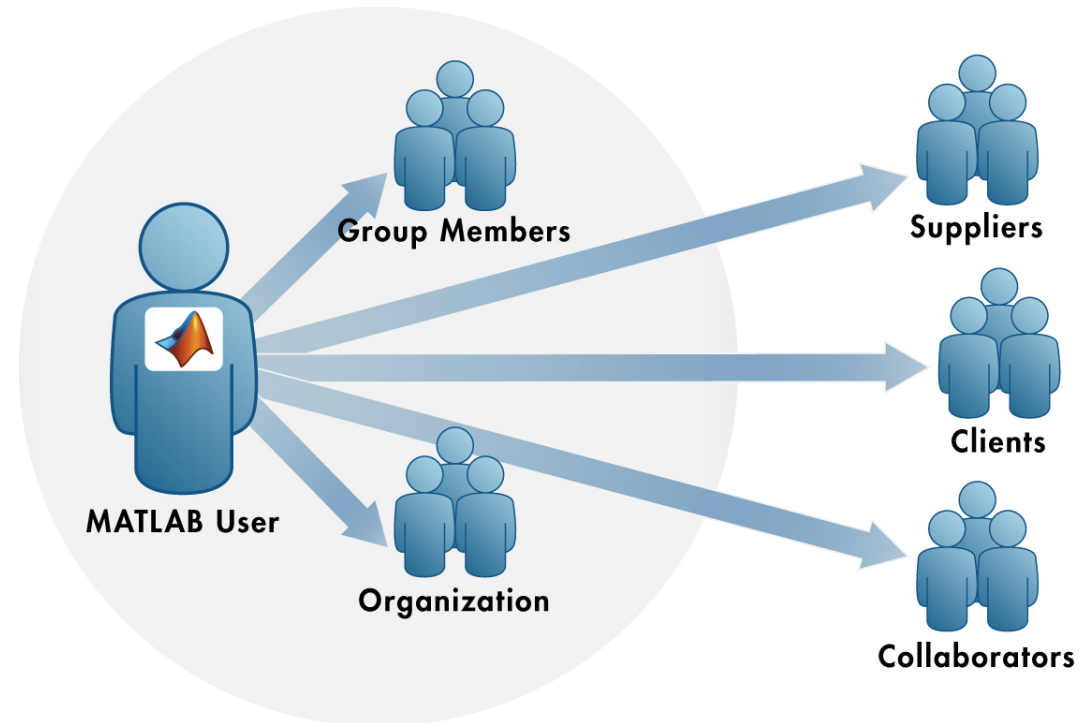


MATLAB Programs Can be Shared With Anyone

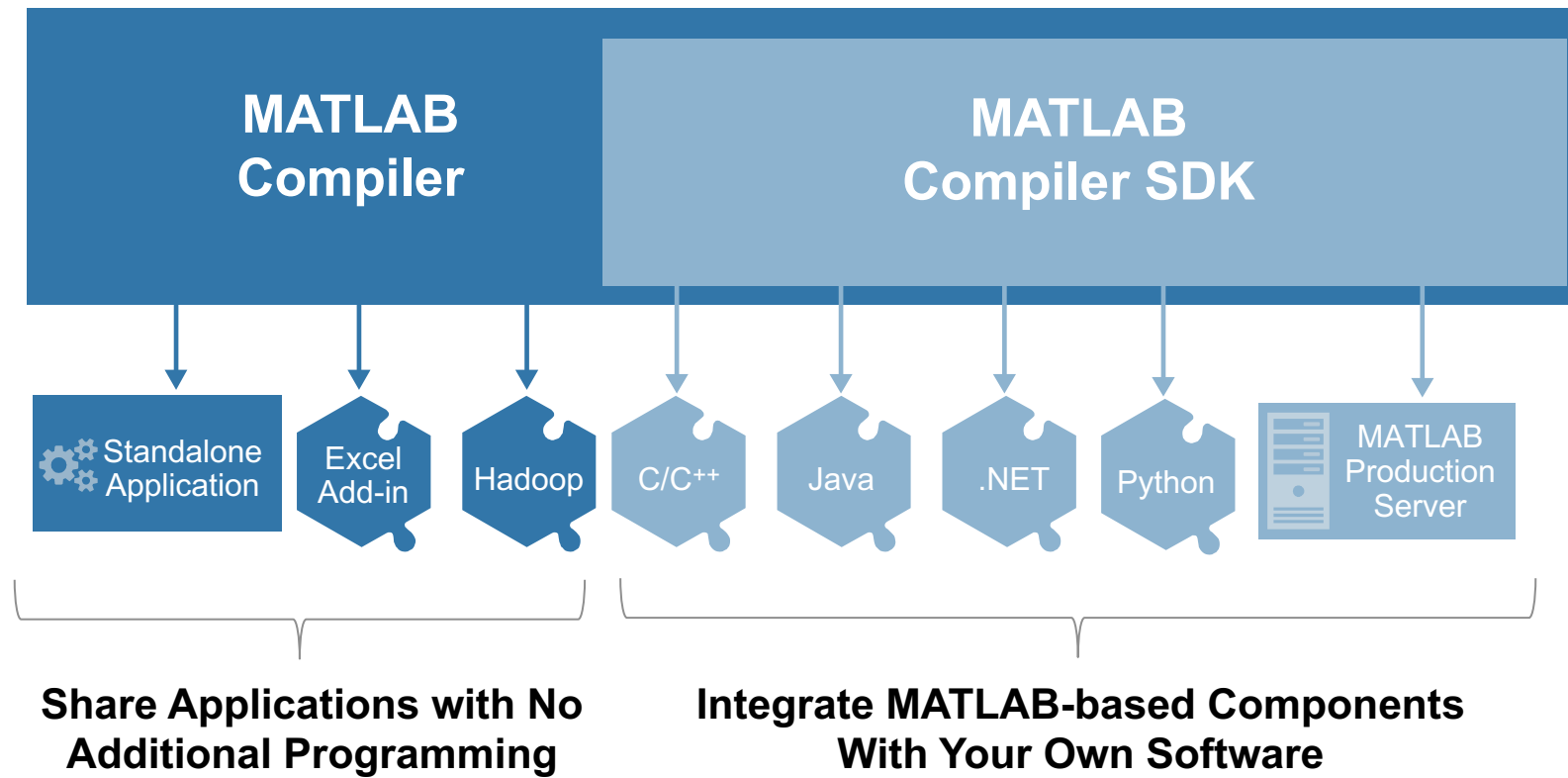
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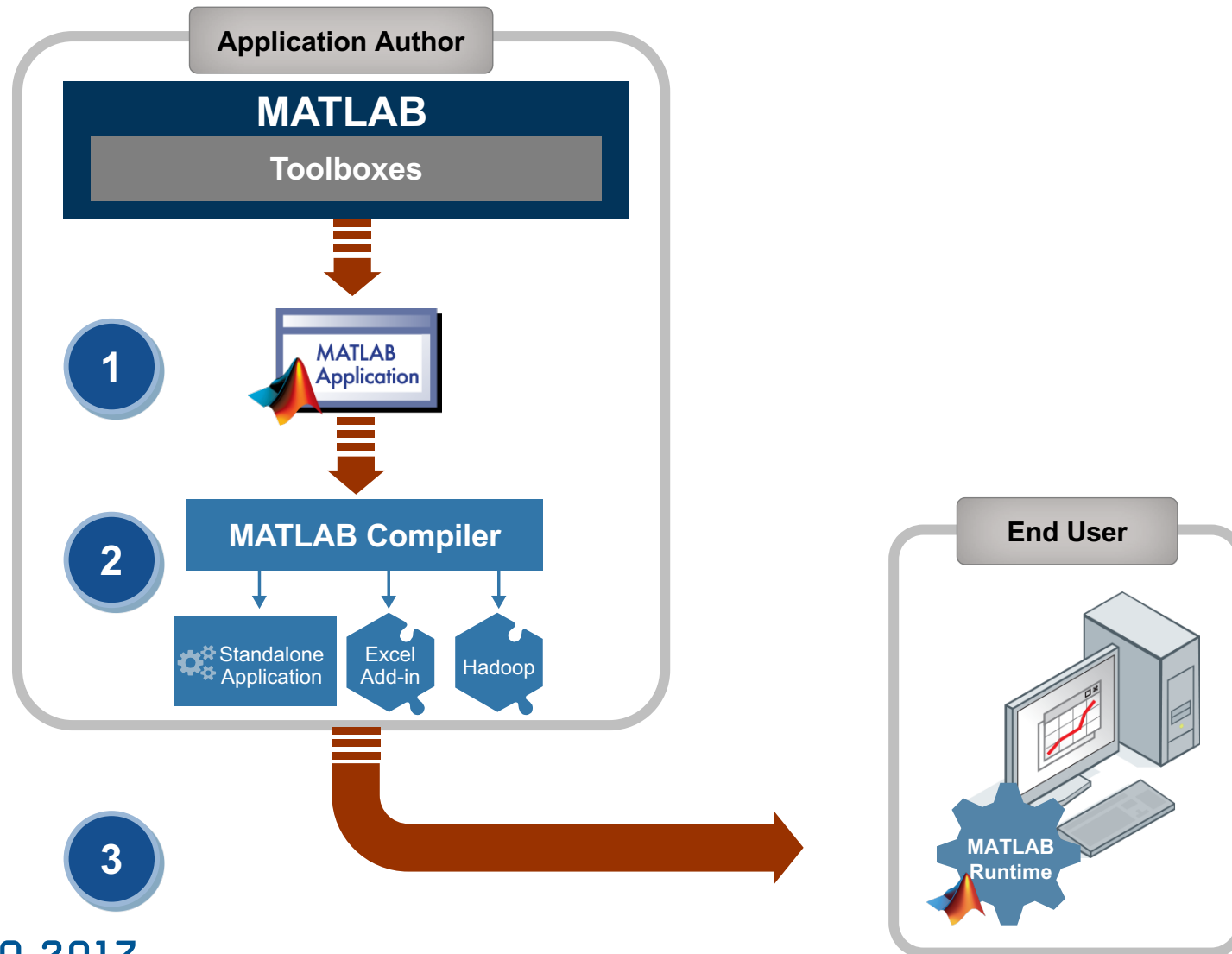


Share with People Who Do Not Have MATLAB

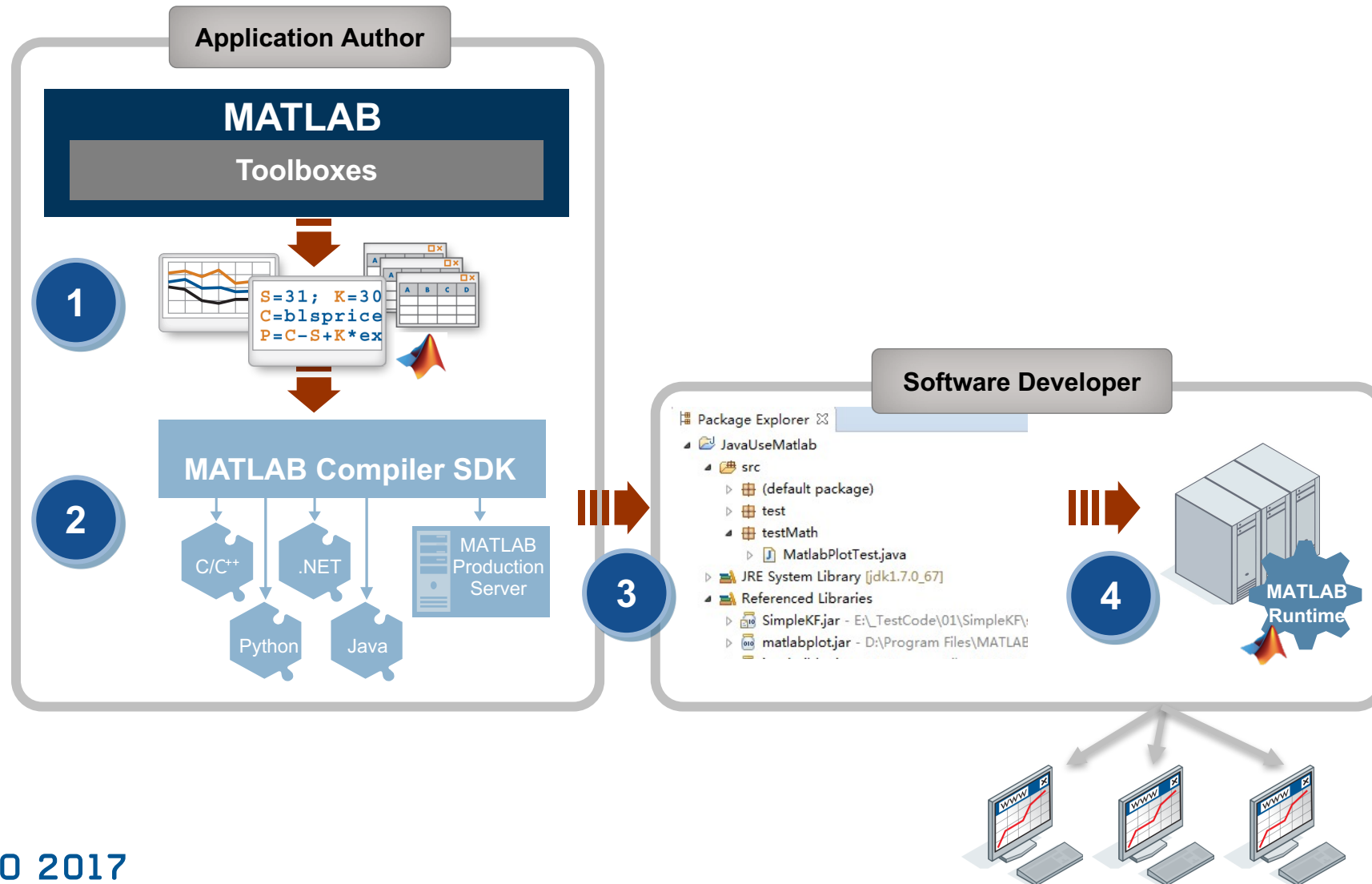


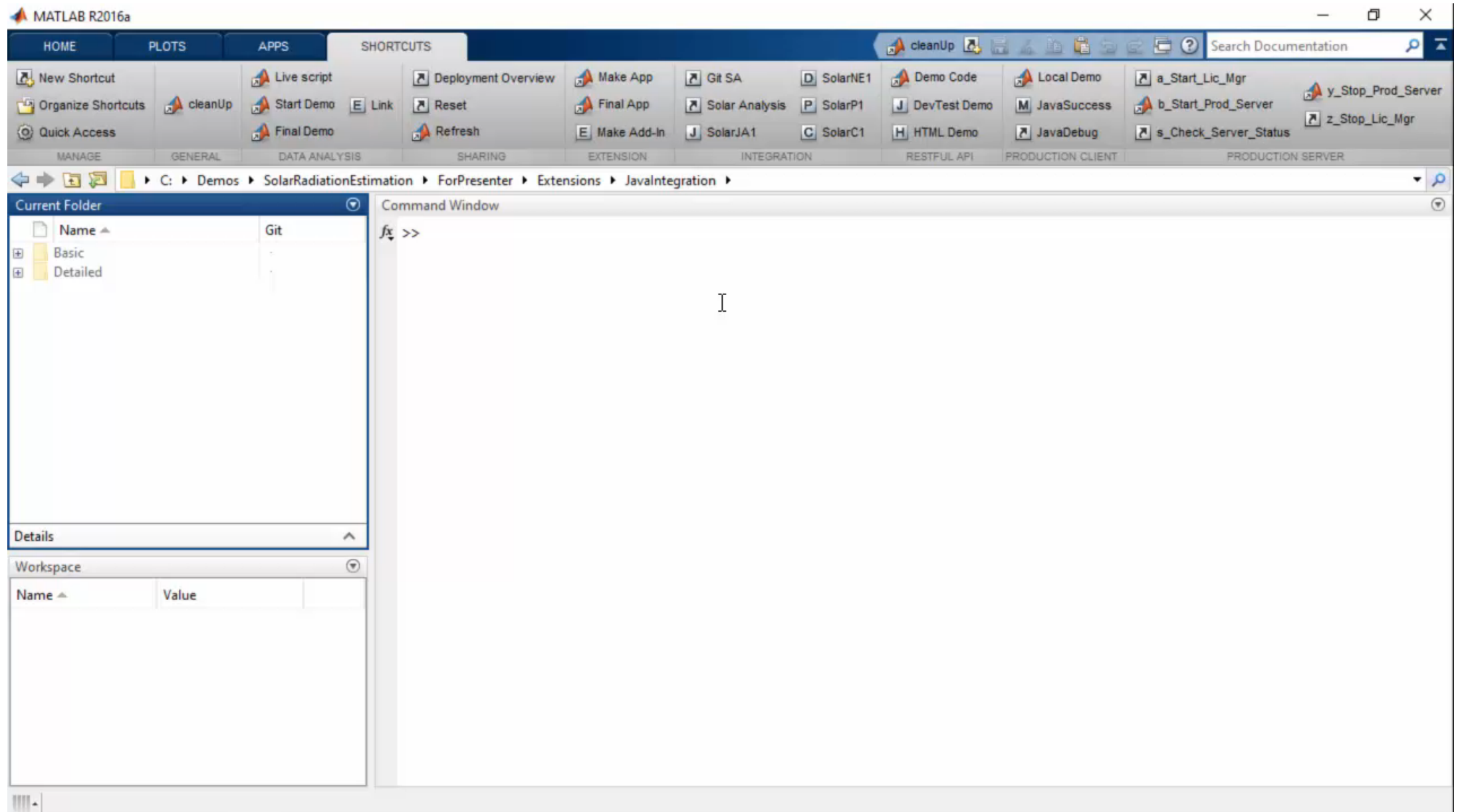
- Royalty-free Sharing
- IP Protection via Encryption

Share Applications Built Completely in MATLAB



Integrate MATLAB-based Components With Your Own Software



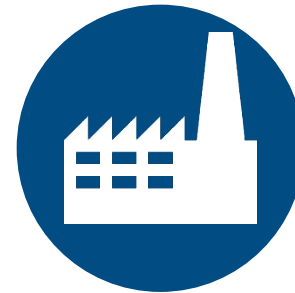


MATLAB *and* MATLAB Production Server

is the **easiest** and most **productive** environment to *take your enterprise analytics or IoT solution* from **idea** to **production**



Idea



Production

Why MATLAB Production Server Matters to You



Domain Expert

- ✓ MATLAB Production Server allow you to continue to work in the environment that you love
- ✓ No need to learn another programming language
- ✓ MATLAB Production Server integrates with enterprise IT infrastructure

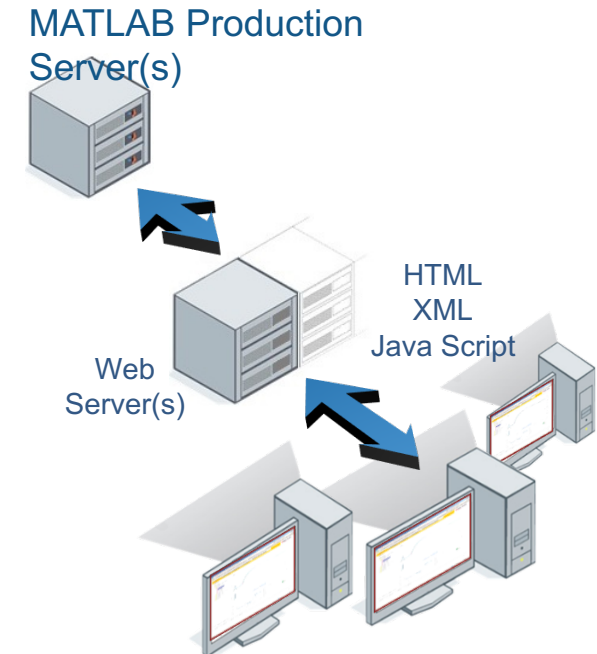


Solution Architect

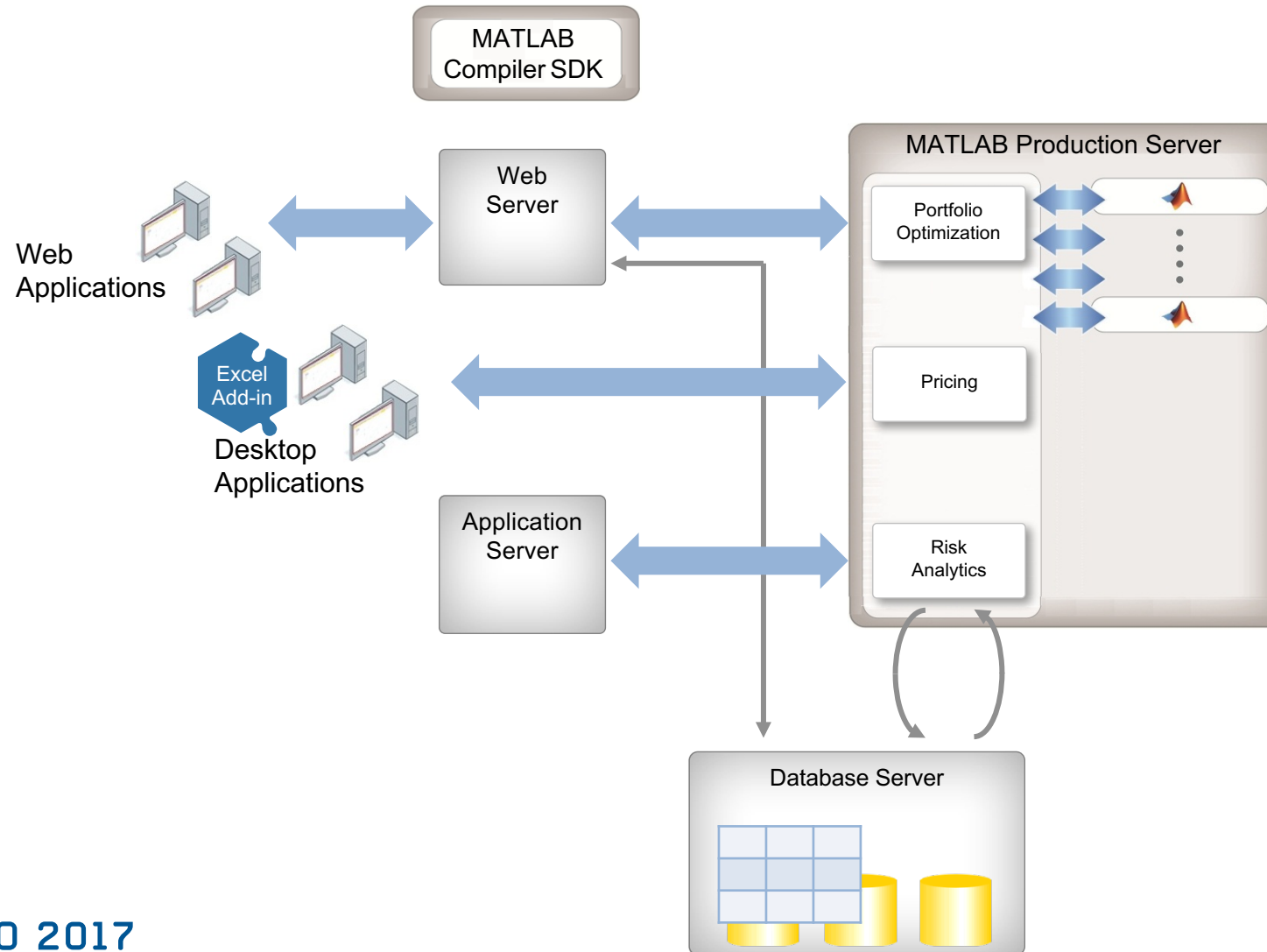
- ✓ MATLAB Production Server integrates MATLAB code into the enterprise IT fabric that you are comfortable with
- ✓ No need to re-code into another programming language
- ✓ Web and cloud friendly architecture

Scale Up with MATLAB Production Server™

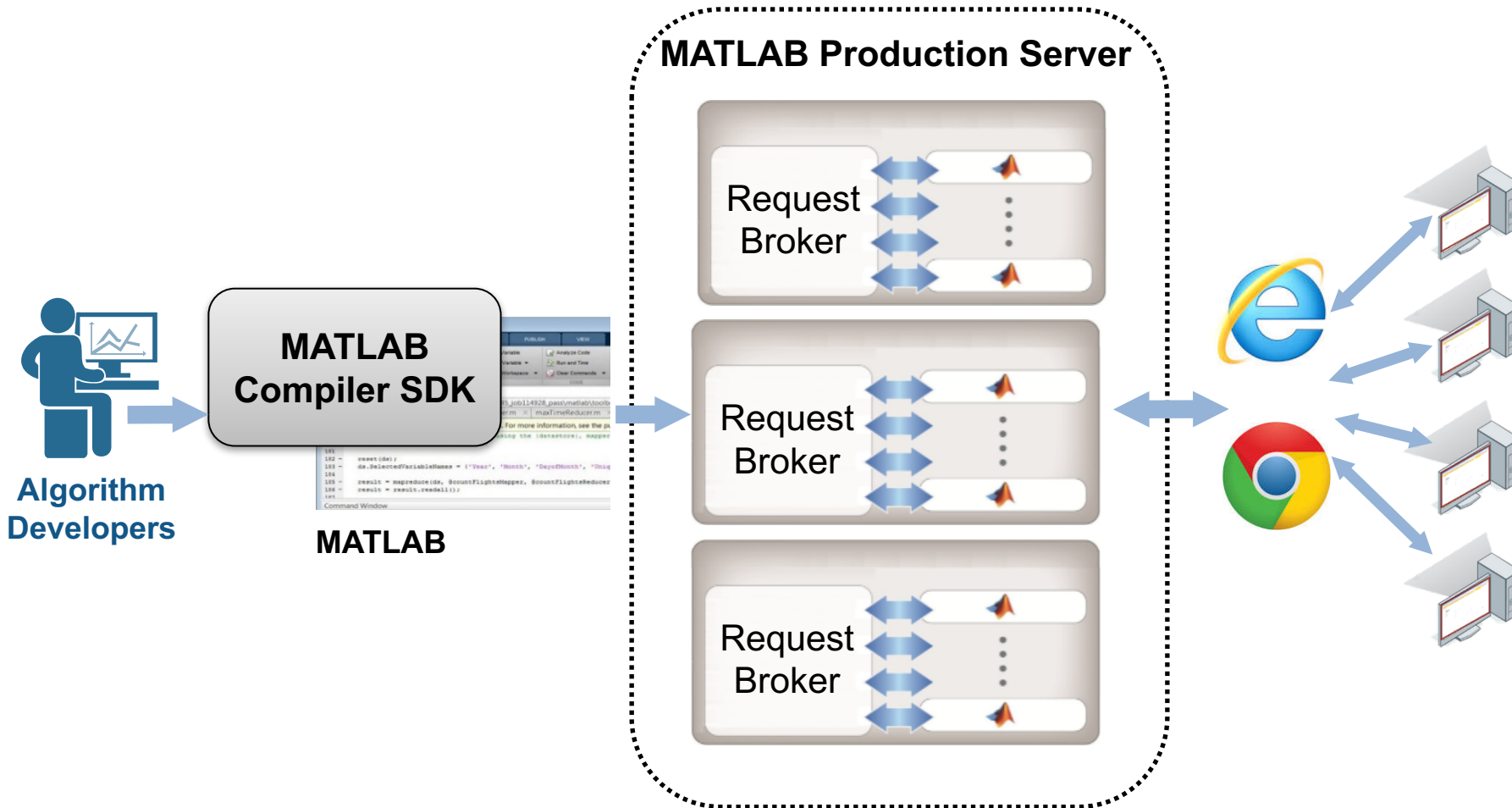
- Directly deploy MATLAB programs into production
 - Centrally manage multiple MATLAB programs and runtime versions
 - Automatically deploy updates without server restarts
 - Most efficient path for creating enterprise applications
- Scalable and reliable
 - Service large numbers of concurrent requests
 - Add capacity or redundancy with additional servers
- Use with web, database and application servers
 - Lightweight client library isolates MATLAB processing
 - Access MATLAB programs using native data types



Example - Integrating with IT systems



Customer examples: Financial customer advisory service



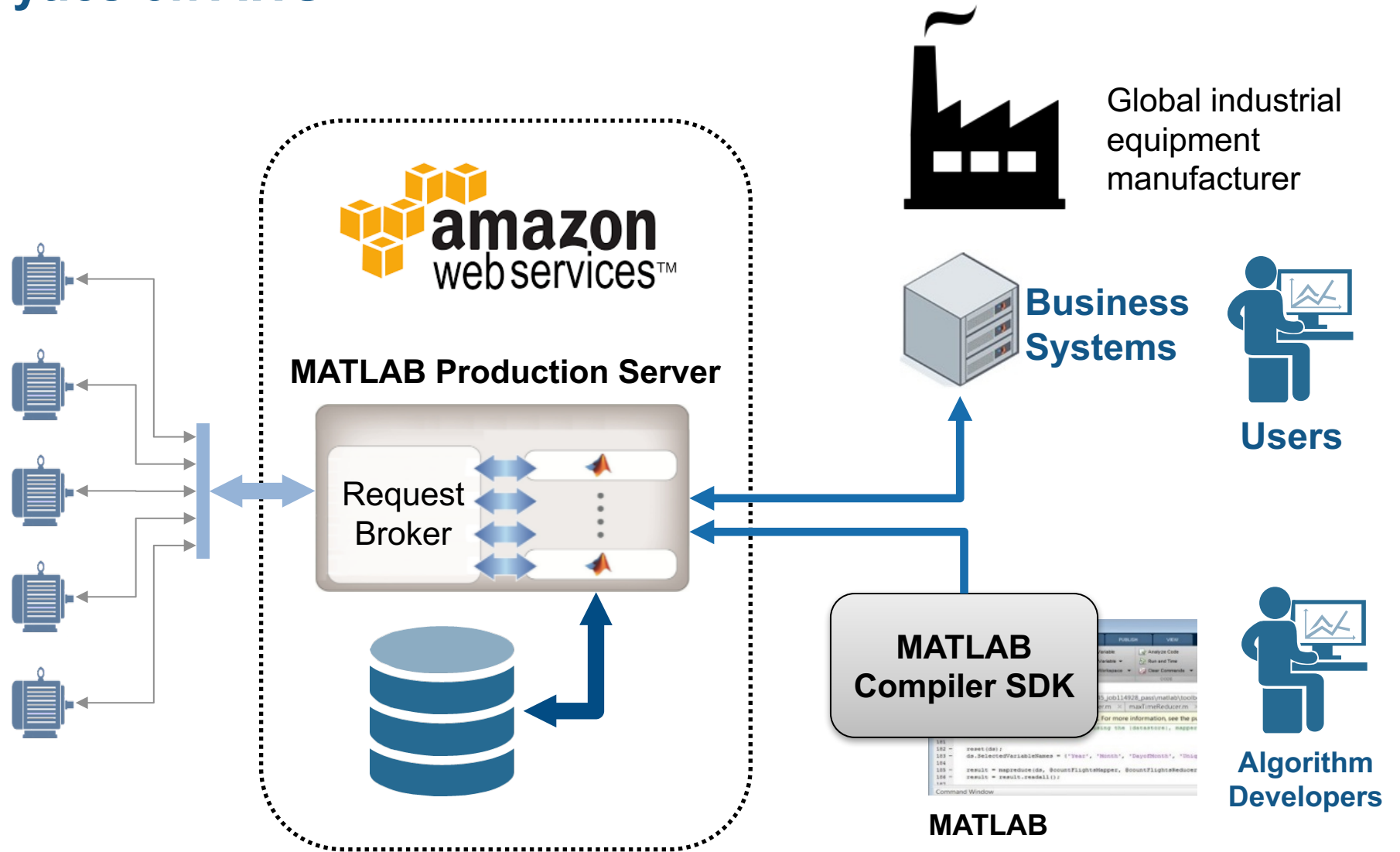
Global financial institution with European HQ

- Saved **€ 2 million annually** for an external system
- Quicker implementation of adjustments in source code by the quantitative analysts
- Knowledge + MATLAB = Build your own systems

Industrial IoT Analytics on AWS

Industrial Equipment

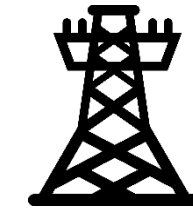
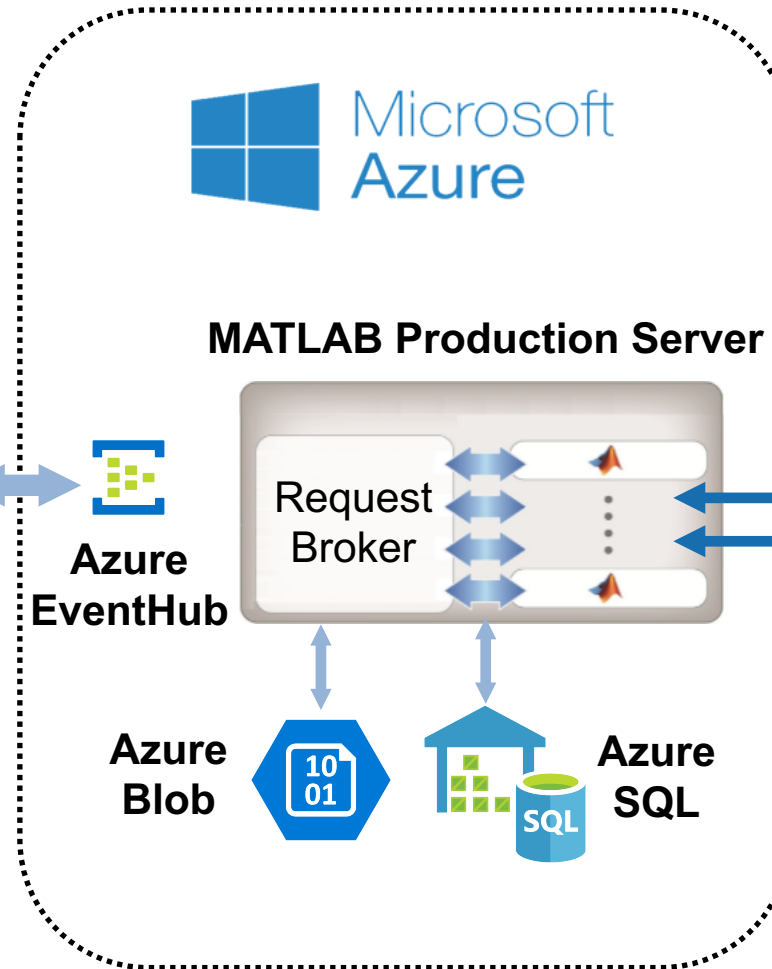
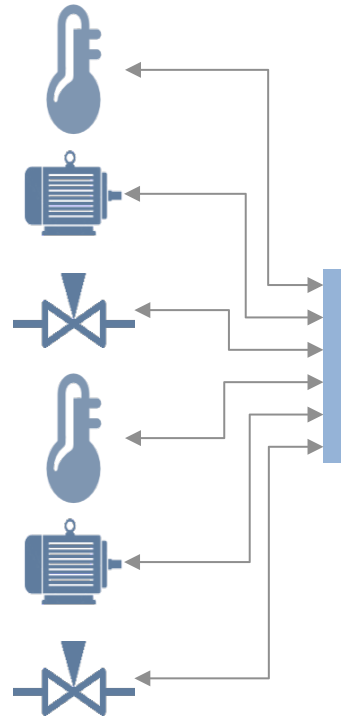
- Networked communication
- Embedded sensors
- Data reduction



Building Automation IoT Analytics on Azure

Building/HVAC automation control system

- Variety of sensors and controls
- Networked communication
- Data reduction



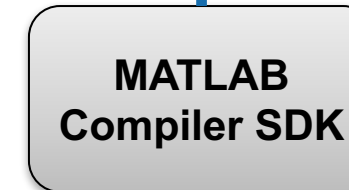
Global heavy duty electrical equipment manufacturer



Business Systems



Users

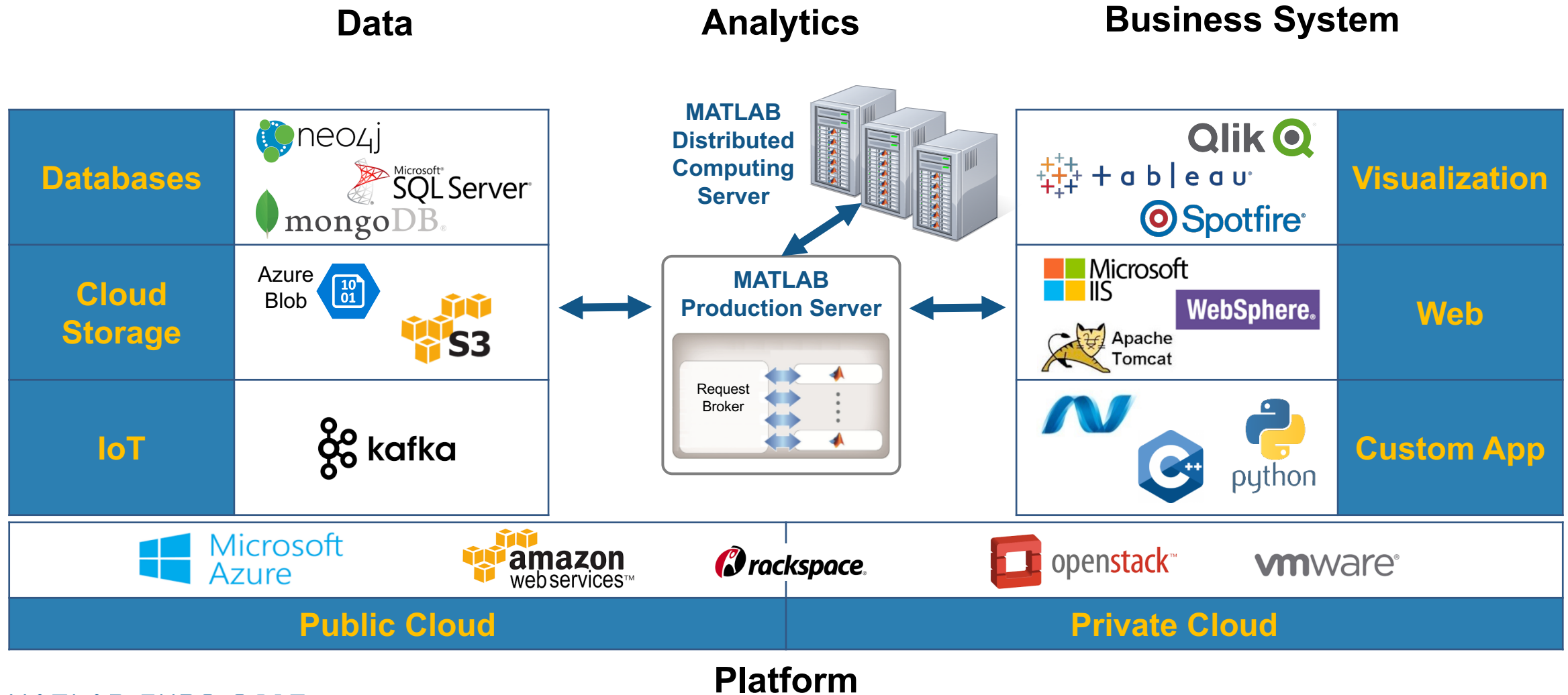


MATLAB

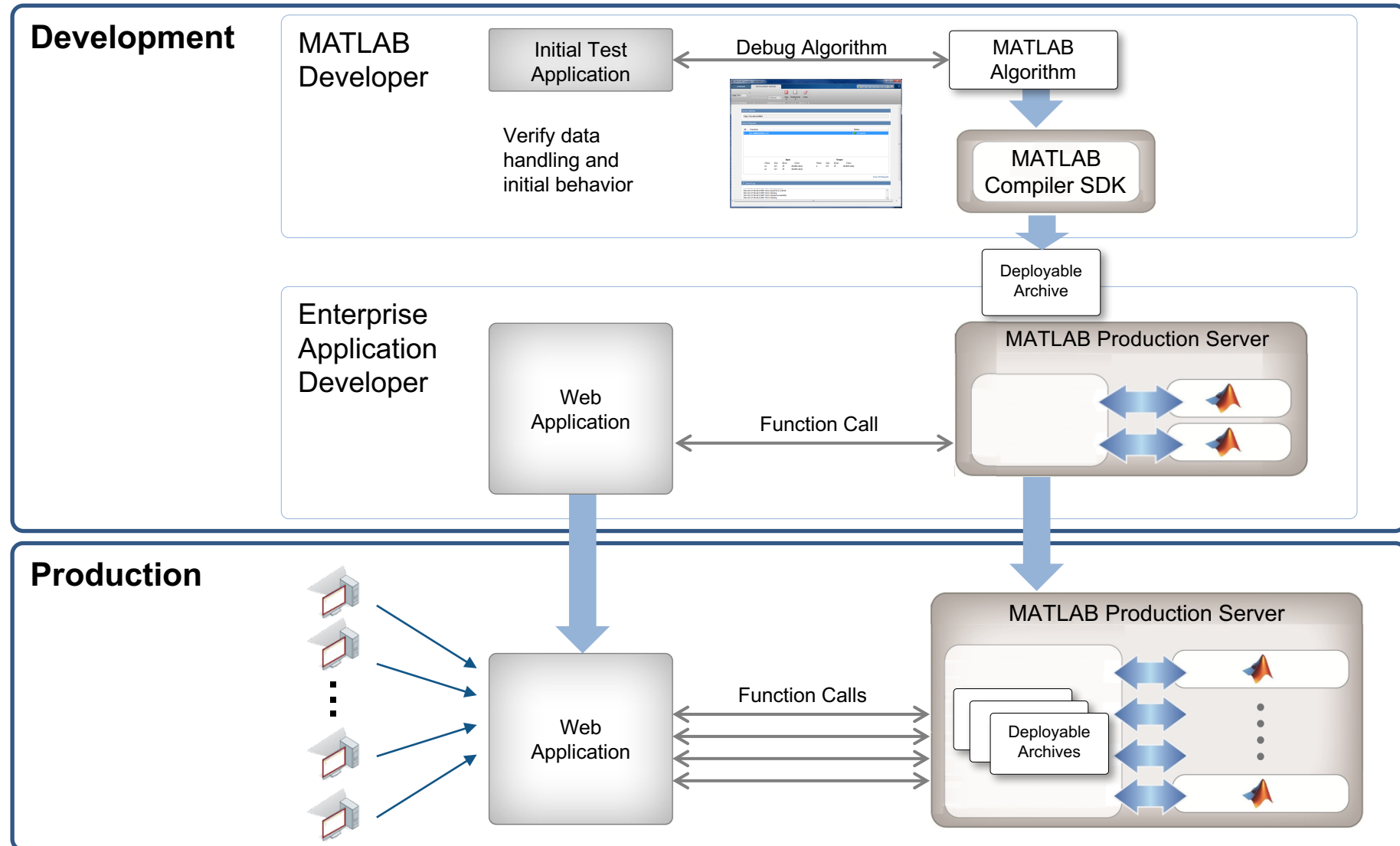


Algorithm Developers

Technology Stack

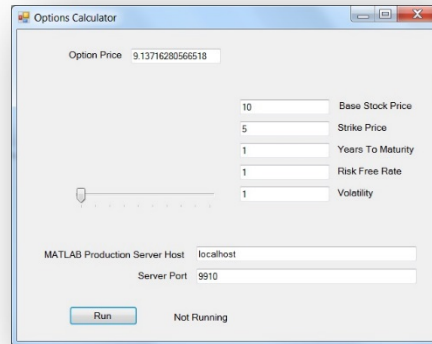


Production Deployment Workflow



Develop and Test with MATLAB Compiler SDK

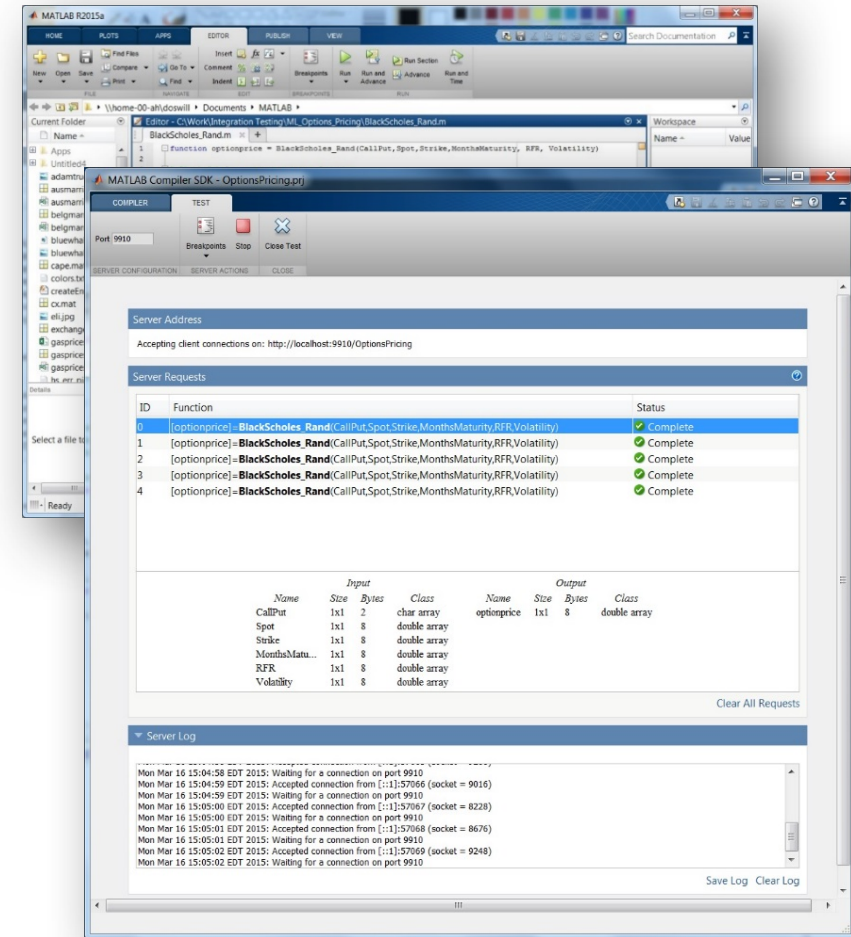
Application



HTTP



MATLAB



- Test environment for MATLAB Production Server
- Test and debug in MATLAB desktop
 - Details on request transactions
 - MATLAB debug and profiling with end to end testing

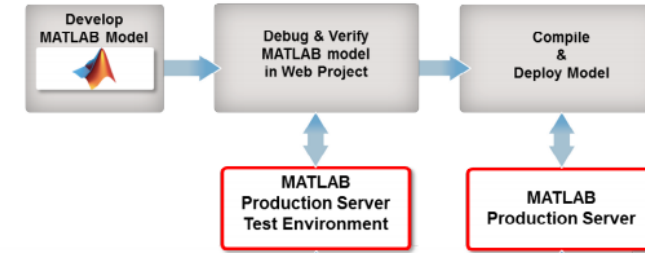
Key Takeaways

1. Distribute applications to non-MATLAB users royalty-free.
2. Integrate MATLAB functions into existing workflows and development platforms.
3. Deploy MATLAB applications to service simultaneous user requests enterprise-wide via web or cloud frameworks.

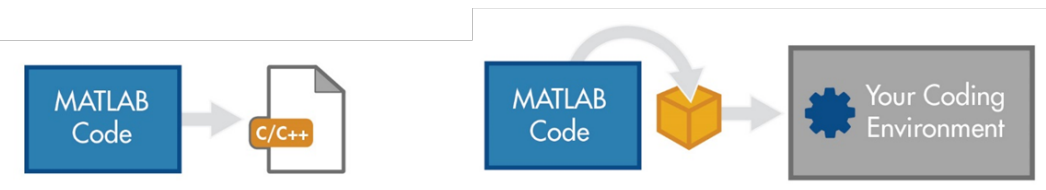
Online Resources

- Documentation – [Create and Share Toolboxes](#) and [Package Apps](#)
- Website – [Desktop and Web Deployment](#)
- Free White Paper – [Building a Website with MATLAB Analytics](#)
- Website – [Using MATLAB With Other Programming Languages](#)
- Website – [Training Options for MATLAB](#)

MATLAB developer:



Web developer:



Experience hands-on training on latest product capabilities.

