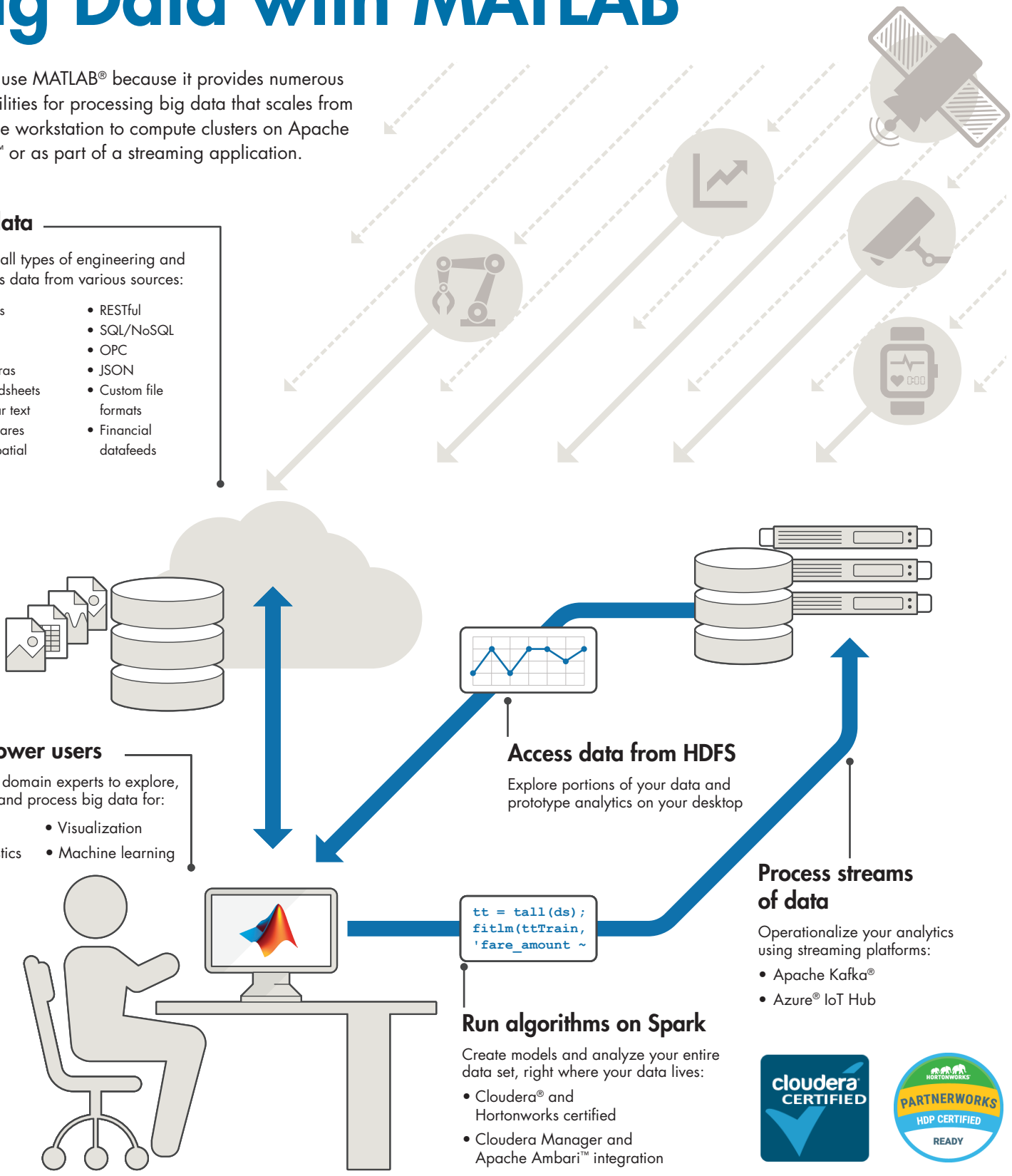
Big Data with MATLAB

Teams use MATLAB® because it provides numerous capabilities for processing big data that scales from a single workstation to compute clusters on Apache Spark™ or as part of a streaming application.

Big data

Access all types of engineering and business data from various sources:

- Images
- Audio
- Video
- Cameras
- Spreadsheets
- Tabular text
- File shares
- Geospatial
- RESTful
- SQL/NoSQL
- OPC
- JSON
- Custom file formats
- Financial datafeeds



Empower users

Enable domain experts to explore, clean, and process big data for:

- Math
- Statistics
- Visualization
- Machine learning

Access data from HDFS

Explore portions of your data and prototype analytics on your desktop

Process streams of data

Operationalize your analytics using streaming platforms:

- Apache Kafka®
- Azure® IoT Hub

Run algorithms on Spark

Create models and analyze your entire data set, right where your data lives:

- Cloudera® and Hortonworks certified
- Cloudera Manager and Apache Ambari™ integration

MathWorks®

80707v05 09/19

Data Analytics with MATLAB

Teams select MATLAB® for data analytics applications that use business and engineering data, incorporate advanced analytics algorithms, and are deployed on both enterprise and embedded platforms.

Applications

- Predictive maintenance
- Condition monitoring
- Advanced driver assistance systems
- Sensor analytics
- Risk analytics
- Process analytics
- Vehicle fleet analytics
- Energy trading
- Algorithmic trading
- Portfolio optimization

Four Key Things to Remember

Diverse and big data

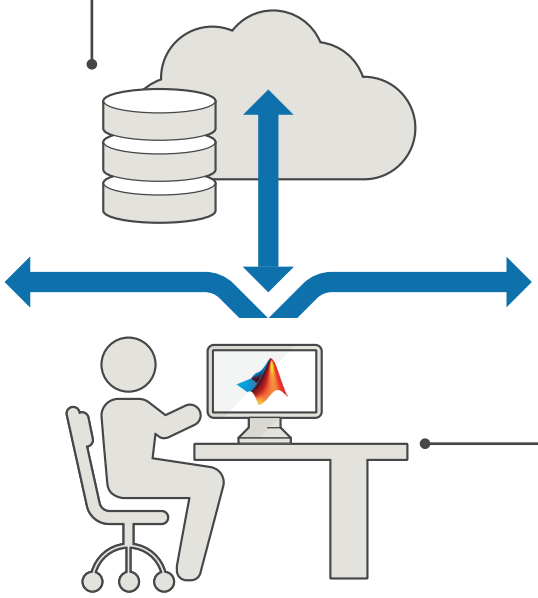
Build analytics that exploit both business and engineering data:

- Images
- Video
- Signals
- Sensors
- Geospatial
- Text
- Databases
- Data historians
- Web APIs
- HDFS
- Datafeeds
- Binary files

Smarter embedded systems

Design embedded systems with analytics-powered functionality:

- C/C++
- FPGAs
- PLCs
- HDL



Flexibility in where analytics run

Operationalize analytics on enterprise, cloud, and embedded platforms:

- Apache Spark™
- Apache Kafka®
- Cloudera®
- Hortonworks
- AWS®
- Microsoft Azure®
- BI tools
- Databases
- Data warehouses

Empowered users

Enable domain experts to be data scientists who can perform:

- Machine learning
- Deep learning
- Statistics
- Optimization
- Signal analysis
- Image processing

Moving from Predictive Analytics to Prescriptive Analytics

Companies in the energy, aerospace, and automotive industries are using MATLAB for innovative data analytics applications.

BuildingIQ optimizes building energy usage:

- Real-time, cloud-based system
- Energy consumption reduced 15–25%

Safran is performing online engine health monitoring:

- Real-time analytics integrated with enterprise service systems
- Aircraft availability improved and maintenance costs reduced

Scania has developed advanced emergency braking systems:

- Real-time hazard identification
- Automatic generation of embeddable C code

MathWorks®

Learn more: MATLAB for data analytics: *mathworks.com/solutions/data-analytics*

80707v05 09/19