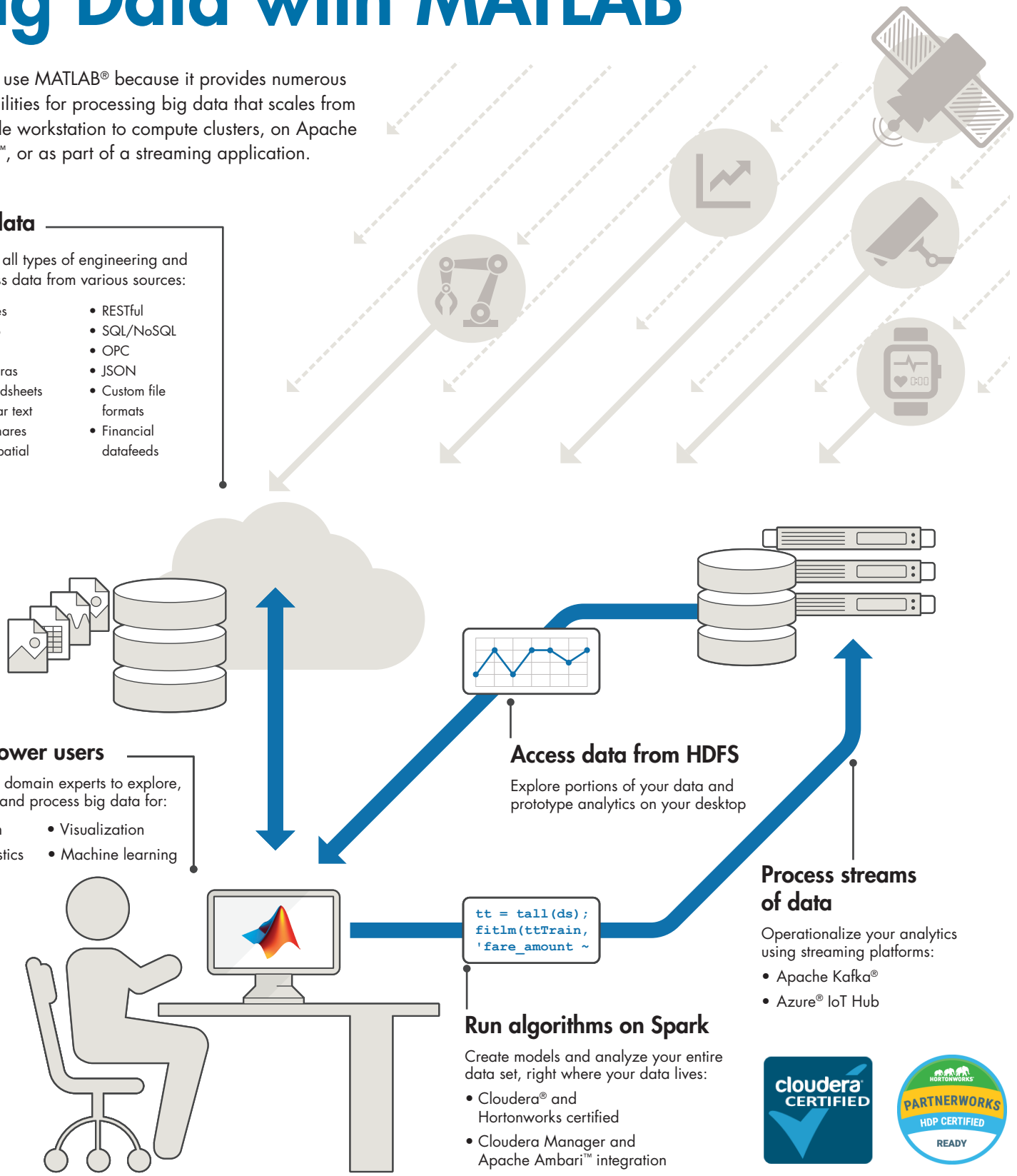
# Big Data with MATLAB

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

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'fare_amount ~
```

## 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

## Process streams of data

Operationalize your analytics using streaming platforms:

- Apache Kafka®
- Azure® IoT Hub



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**Learn more:** MATLAB, tall arrays, and Spark: *mathworks.com/strata-big-data*

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# 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

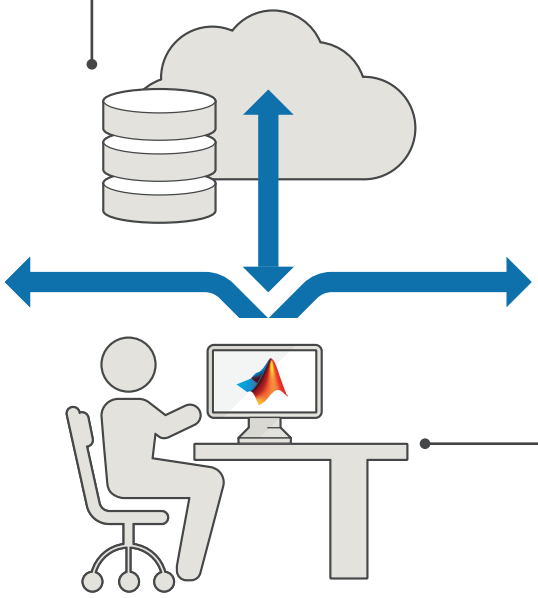
Build analytics that exploit both business and engineering data:

- 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%

**Snecma 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



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

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