



# Module 9: Data Factory in Production

Testing

Bootstrapping

Best Practices

# Testing

A green arrow originates from the word 'Testing' and points horizontally towards the word 'Quality'. The arrow is a solid green color and tapers slightly as it moves to the right.

Quality

# Types of Testing

📖 **Integration Tests** - A test of a pipeline as-is, without eliminating any effects of external dependencies.

📖 **Functional Tests** - An isolated test of whether the pipeline is doing things right – is the pipeline producing the desired result?

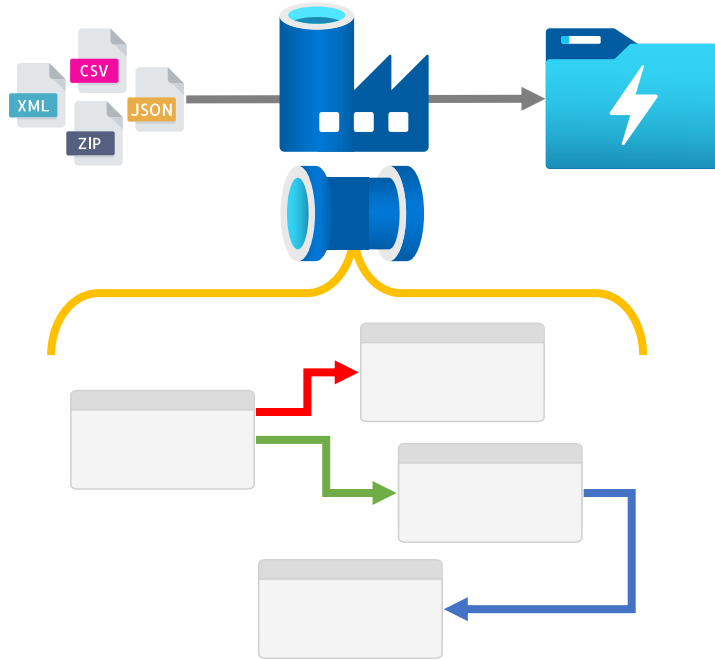
📖 **Unit Tests** - An isolated test of whether the pipeline is doing the right things – do the pipeline's activities get executed in the way you expect?

**Source:** Richard Swinbank [richardswinbank.net](http://richardswinbank.net)

A solid blue triangle is located in the bottom right corner of the slide, pointing towards the top right.

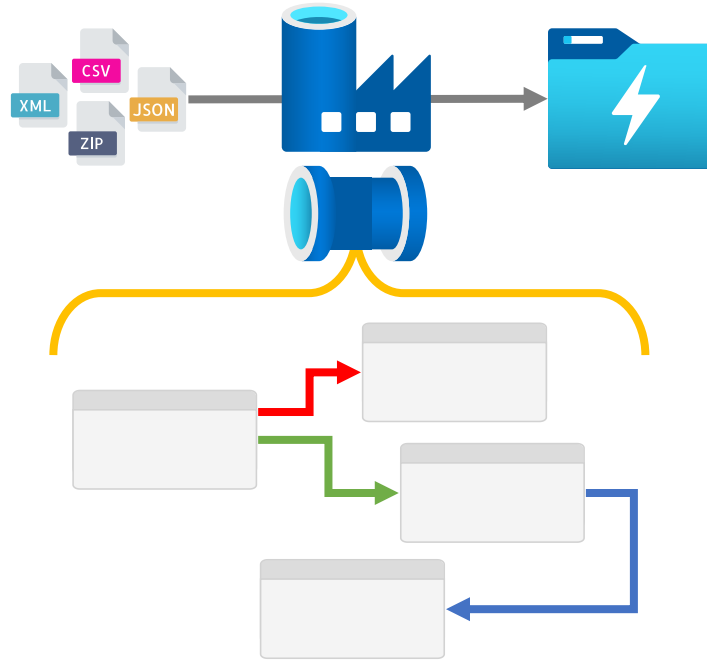
# Types of Testing – Who is going to do them?

## Integration Tests



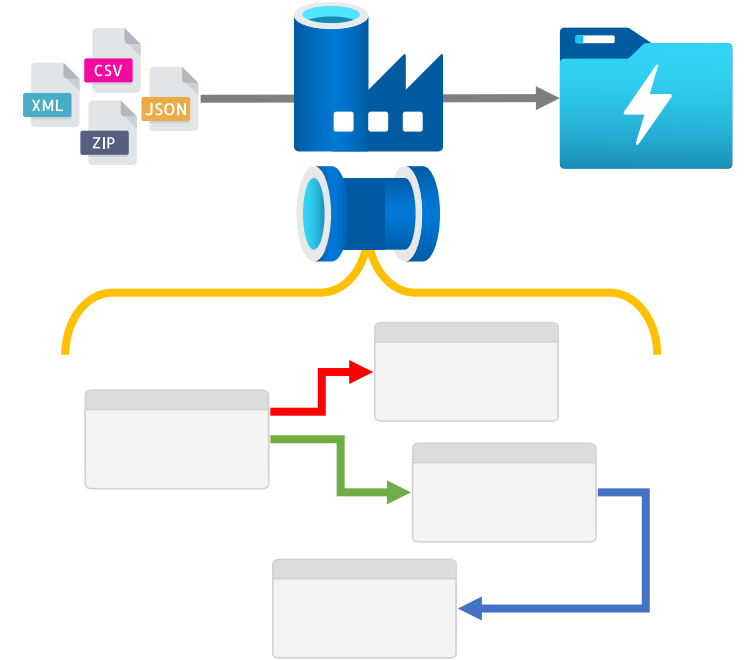
Developer

## Functional Tests



QA Engineer  
Business User  
End User

## Unit Tests

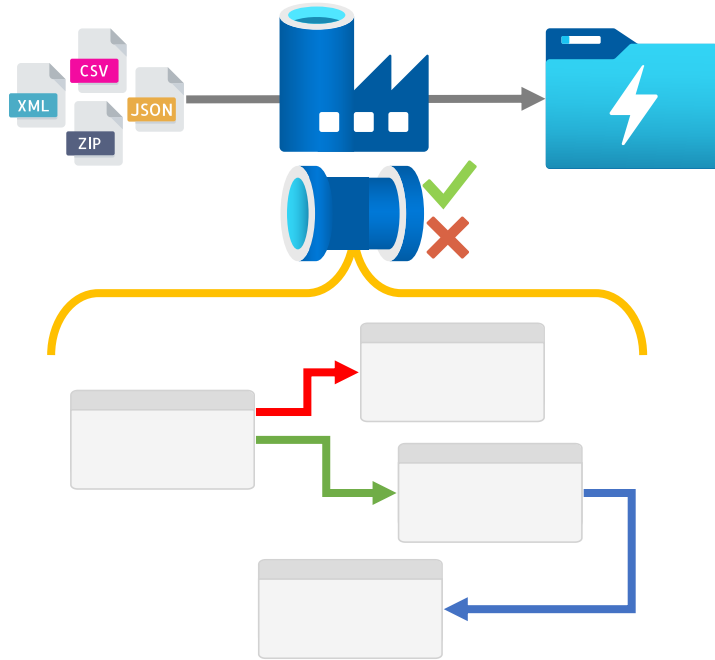


Developer

# Types of Testing – What do they mean in our pipelines?

## Integration Tests

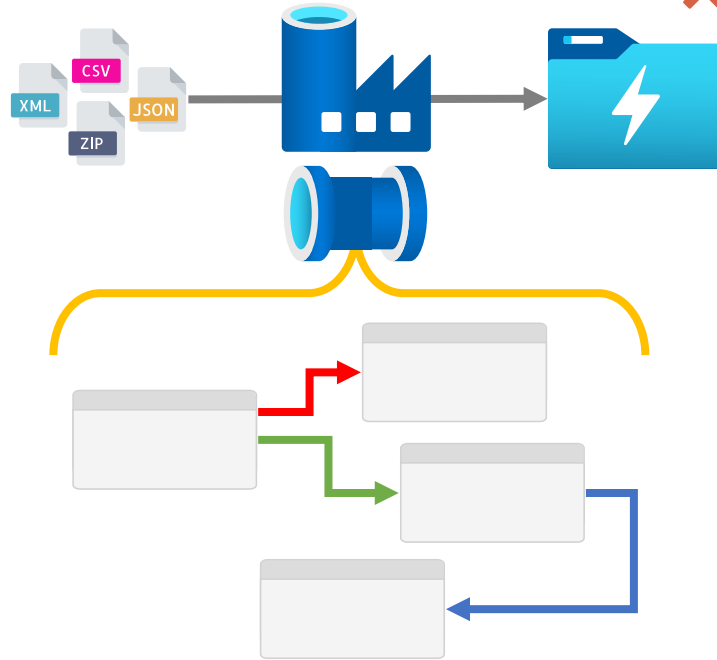
Simple Run Outcome



## Functional Tests

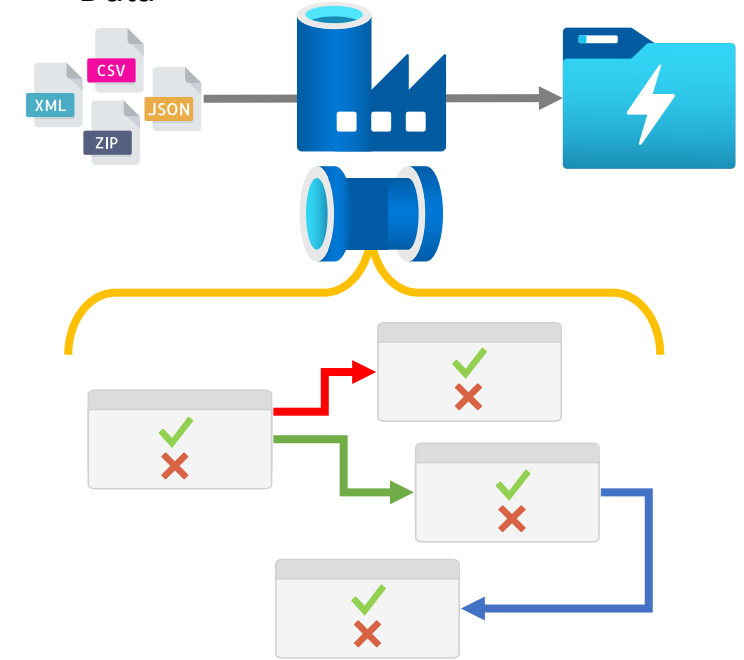
Sample Data

Specific Results



## Unit Tests

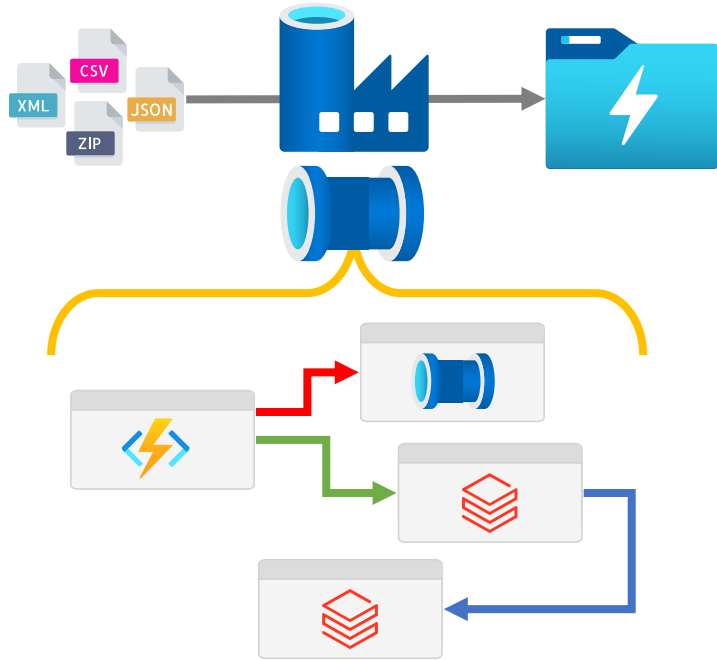
Sample Data



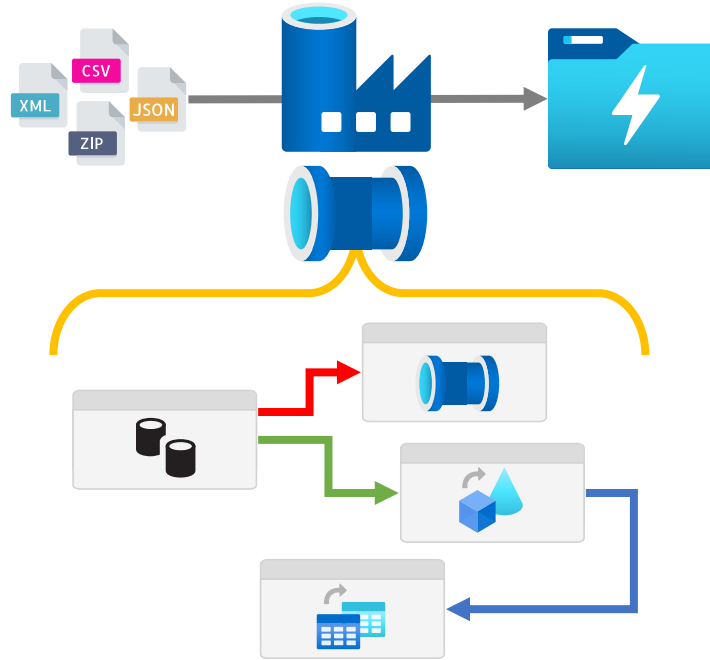
Specific Activity Inputs & Outputs

# Types of Testing – Does it depend on external resources?

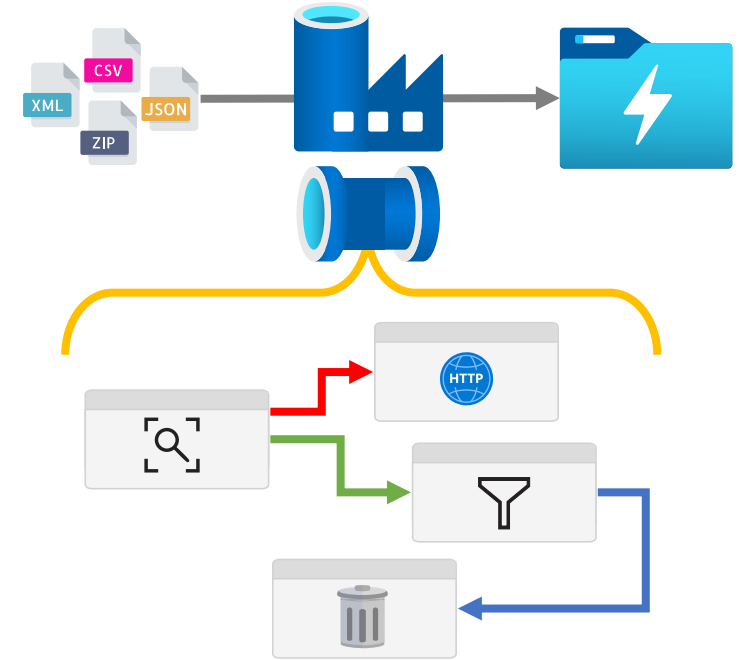
## Integration Tests



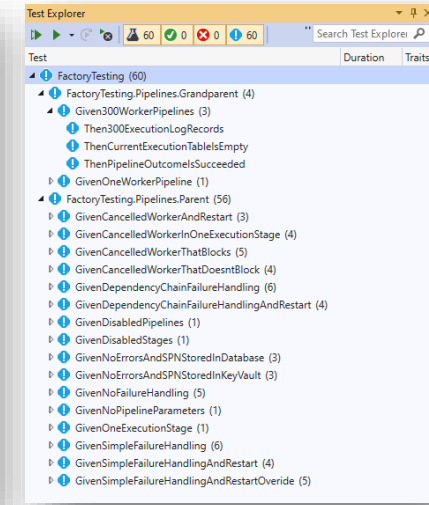
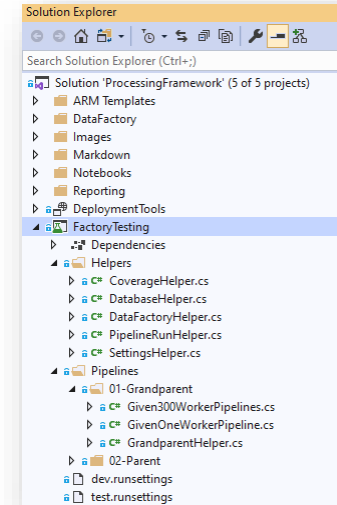
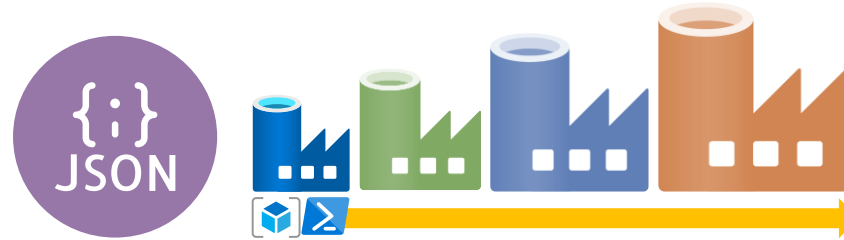
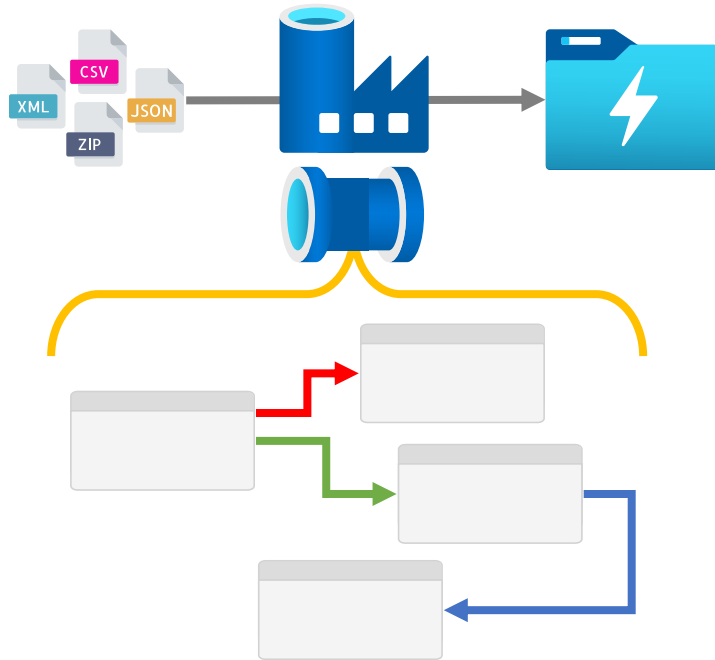
## Functional Tests



## Unit Tests

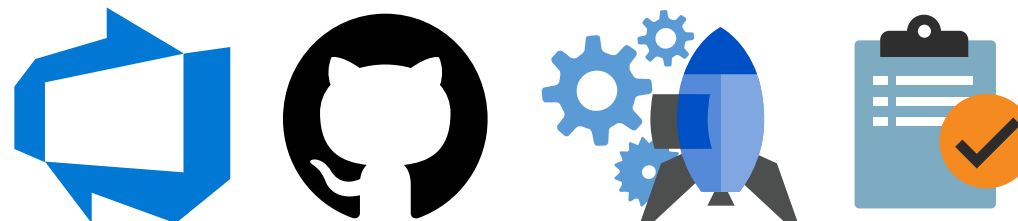


# How To Run & Automate Tests



[github.com/mrpaulandrew/ADF.procfwk/tree/master/FactoryTesting](https://github.com/mrpaulandrew/ADF.procfwk/tree/master/FactoryTesting)

[github.com/richardswinbank/community/tree/main/adf-testing-series](https://github.com/richardswinbank/community/tree/main/adf-testing-series)



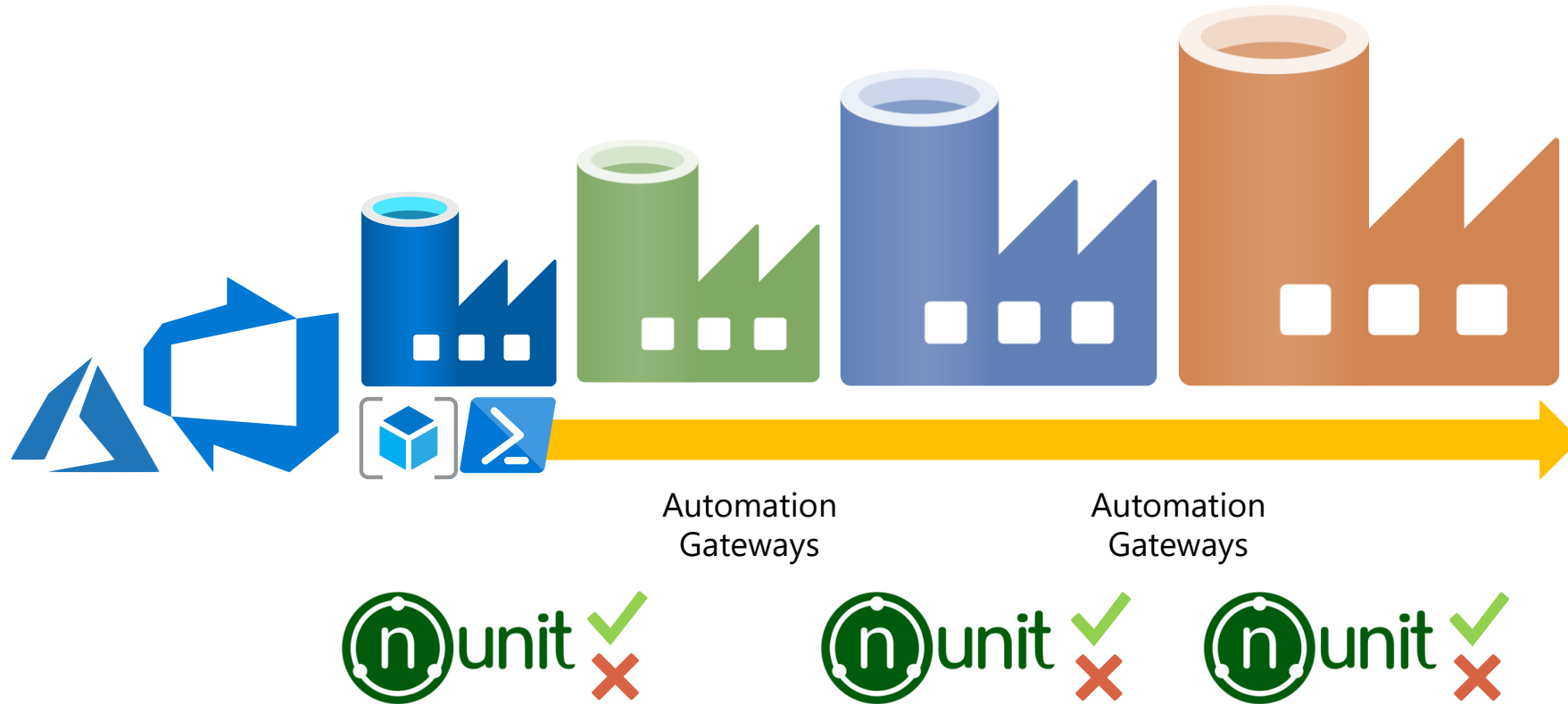
A blue cylinder is shown from a top-down perspective. The top of the cylinder is a light blue ring. Inside this ring, the word "DEMO" is written in white, bold, uppercase letters. The rest of the cylinder is a solid blue color.

**DEMO**



# Testing Code vs Actual Code

Data Factory – Chicken vs Egg



Should automate this?

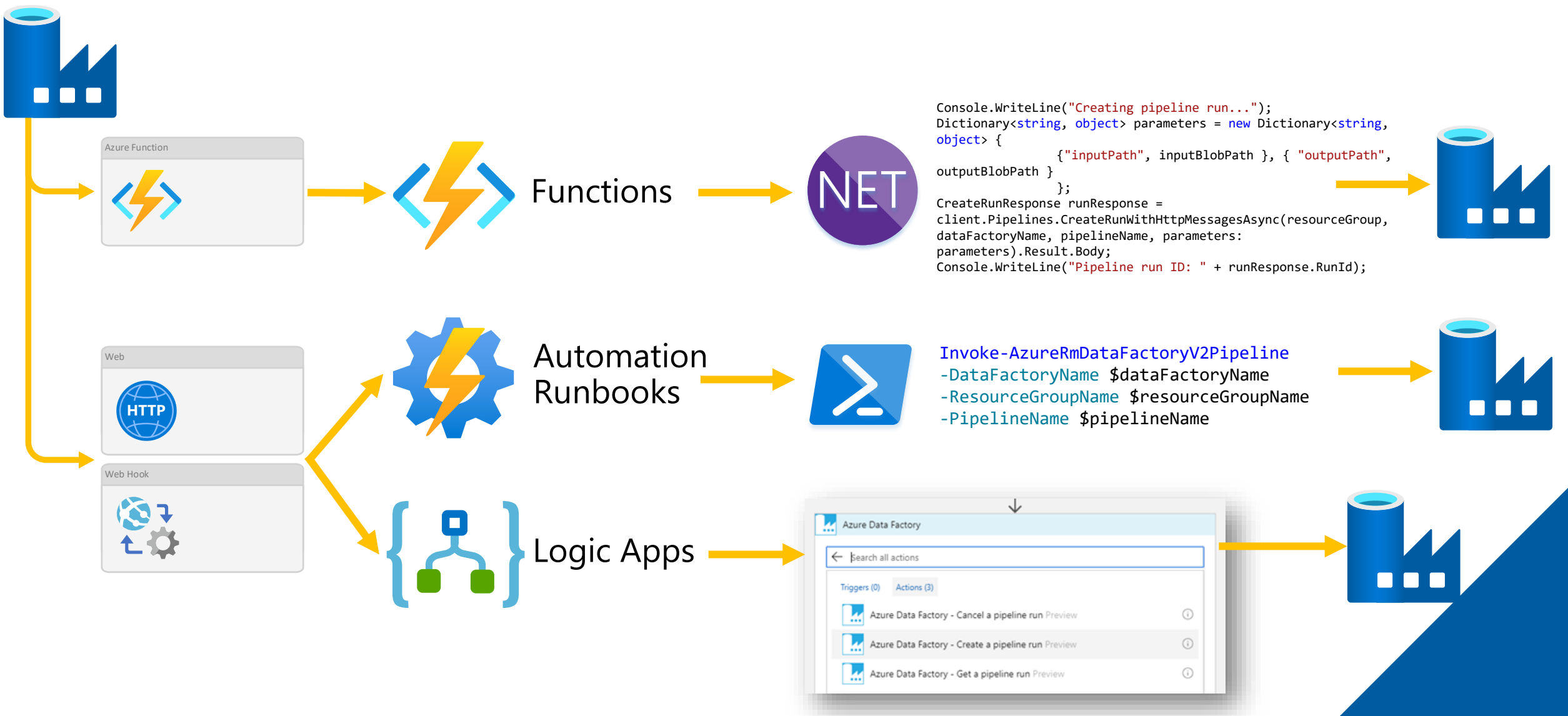
When should testing scripts run?

What if a test case fails?

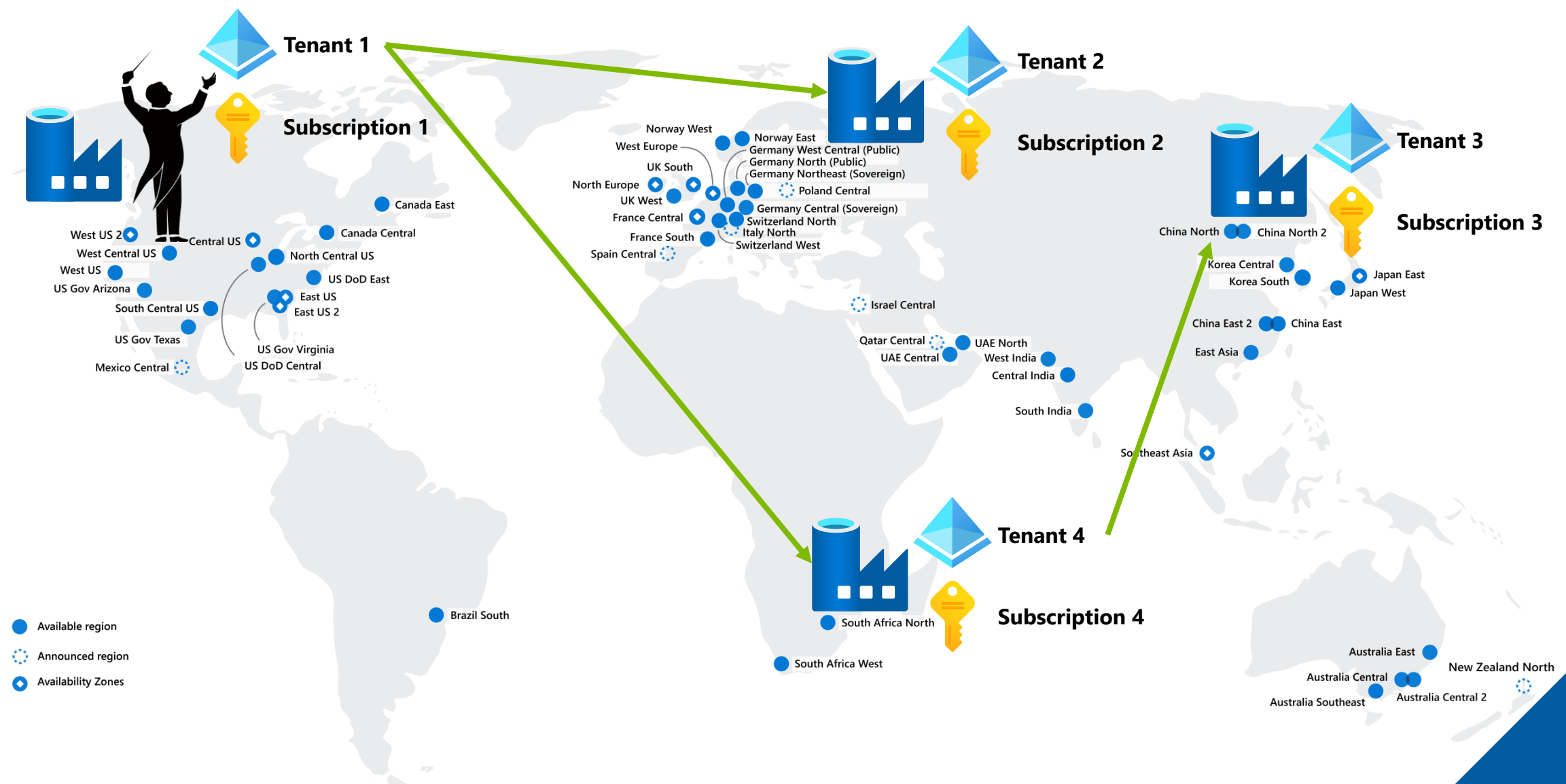
# Bootstrapping



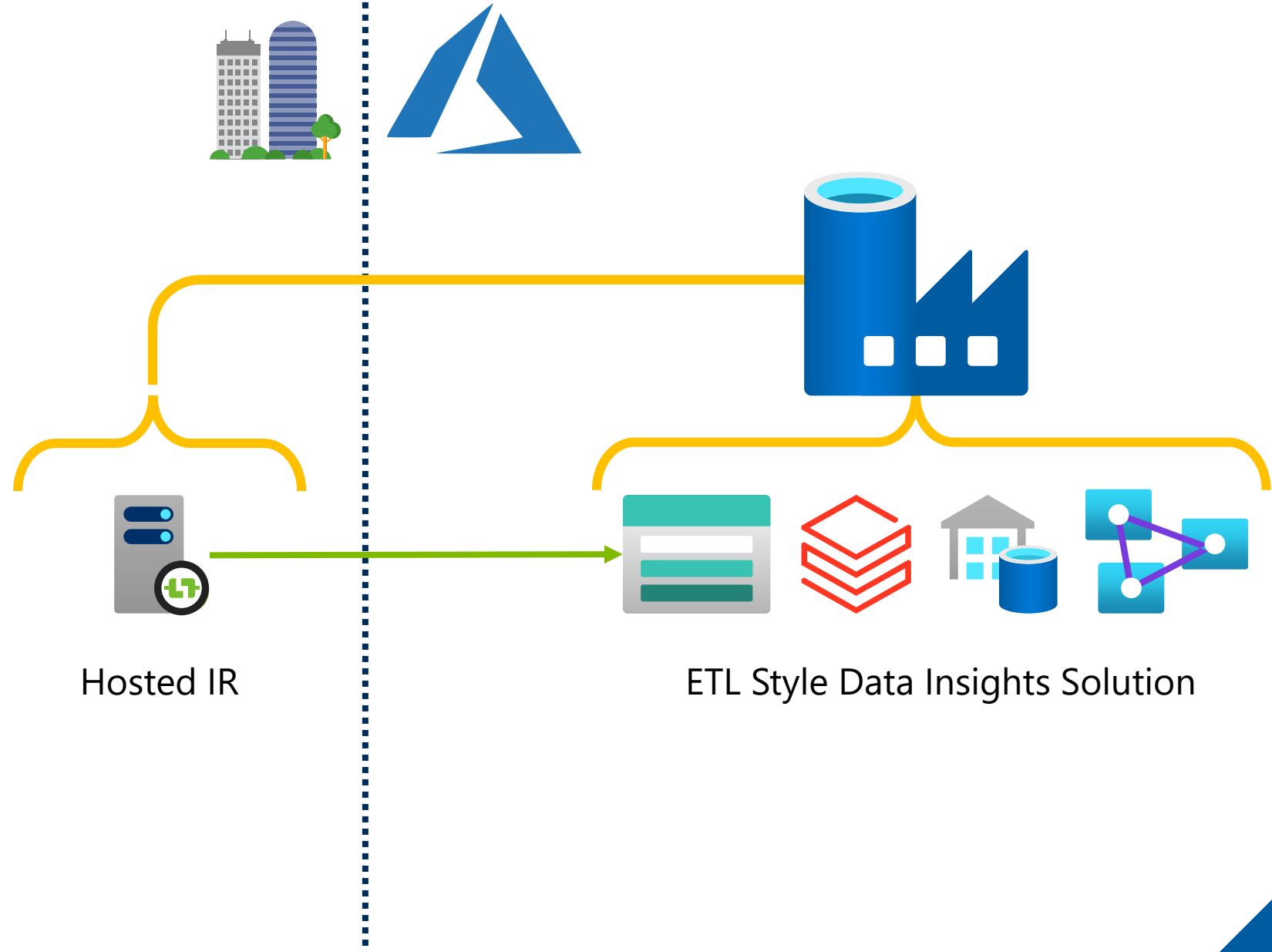
# Bootstrapping – How?



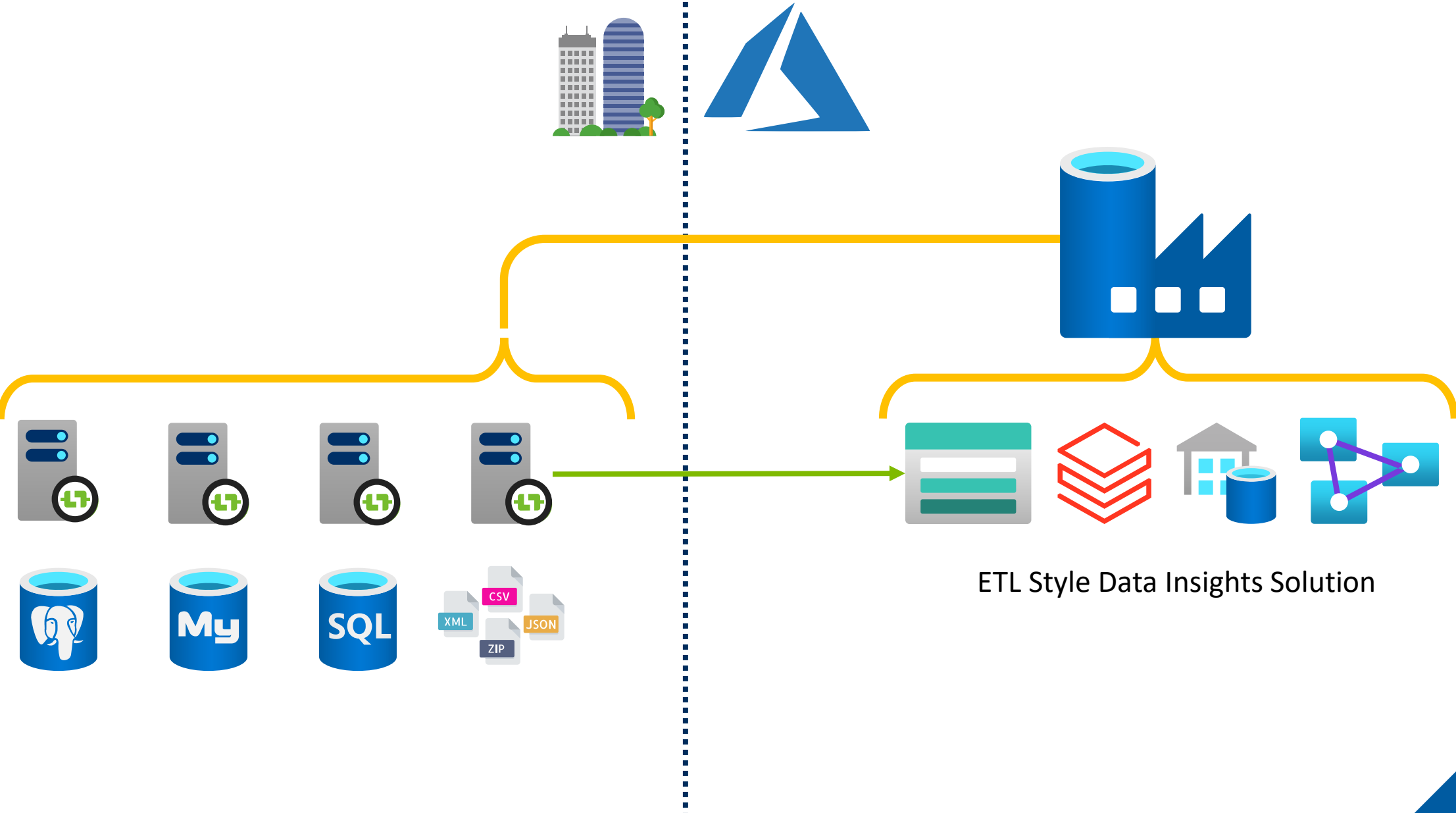
# Bootstrapping – Why?



# Bootstrapping – Why?



# Bootstrapping – Why?



# Best Practices

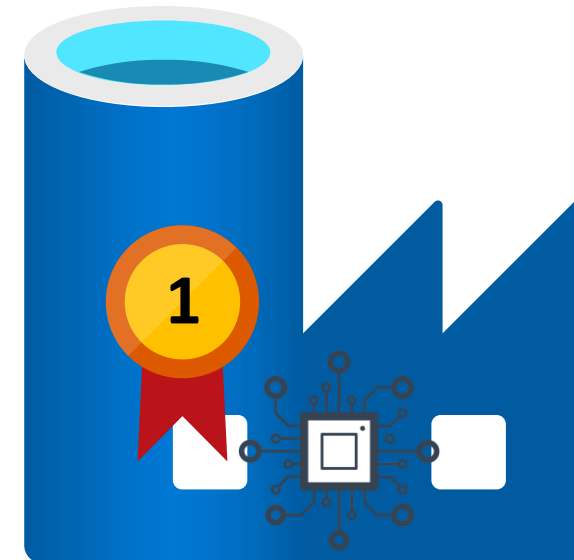


# Key Points

- Environment Setup & Developer Debugging
- Deployments
- Automated Testing
- Naming Conventions
- Pipeline Hierarchies
- Pipeline & Activity Descriptions
- Factory Component Folders
- Linked Service Security via Azure Key Vault
- Dynamic Linked Services
- Generic Datasets
- Metadata Driven Processing
- Parallel Execution
- Hosted Integration Runtimes
- Azure Integration Runtimes
- Wider Platform Orchestration
- Custom Error Handler Paths
- Monitoring via Log Analytics
- Service Limitations
- Using Templates
- Documentation



[mrpaulandrew.com/2019/12/18/best-practices-for-implementing-azure-data-factory/](http://mrpaulandrew.com/2019/12/18/best-practices-for-implementing-azure-data-factory/)





# Module 9:

## Data Factory in Production

🔊 Testing ✓

🔊 Bootstrapping ✓

🔊 Best Practices ✓