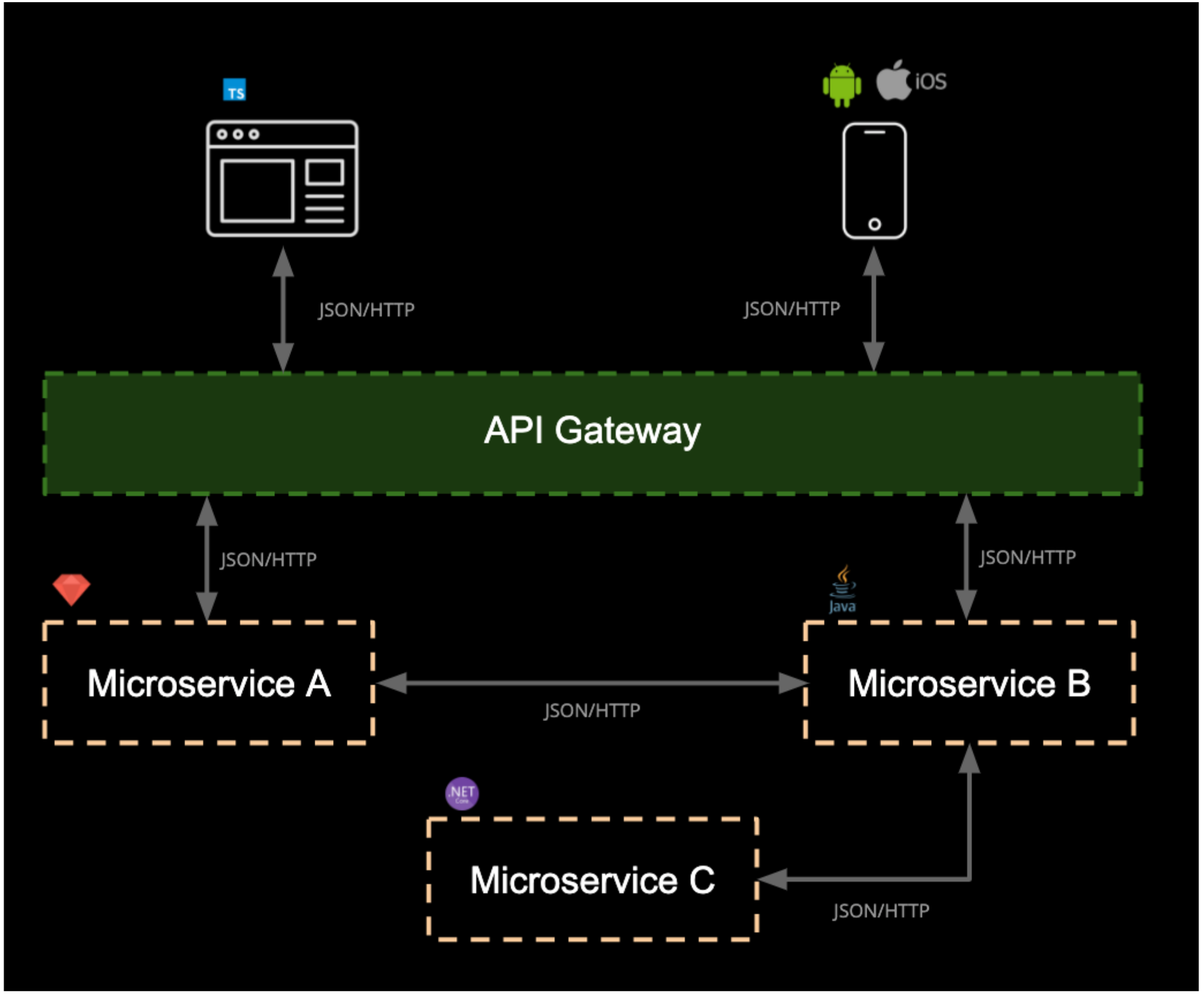
TechSalad
Pact contract testing

Kamil Lihan

IBM **Services**

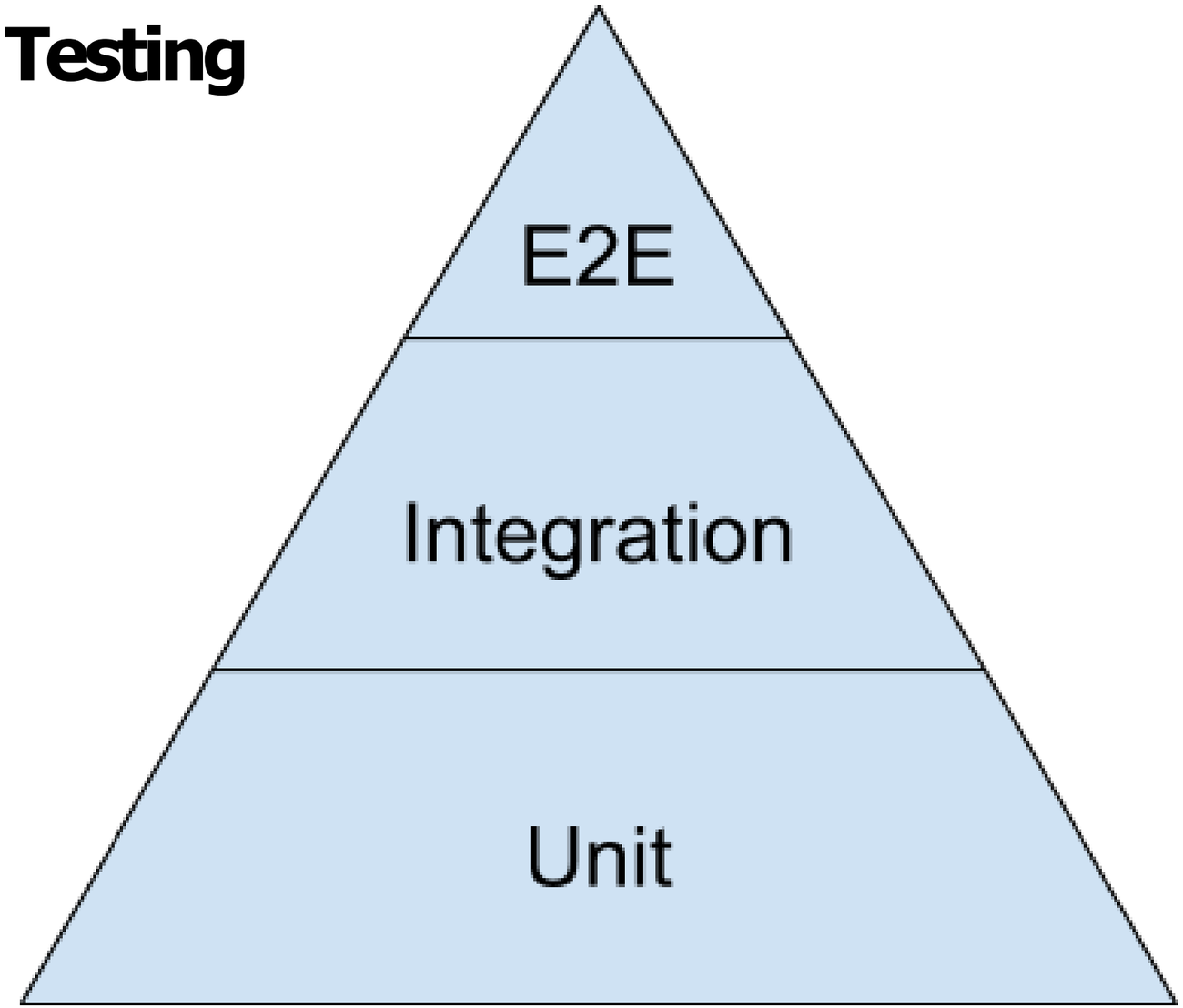
Agenda

- What is PACT
- Challenges of testing
- Why use PACT
- How PACT contract-testing works
- DEMO


TS
iOS
JSON/HTTP
JSON/HTTP
API Gateway
JSON/HTTP
JSON/HTTP
Java
Microservice A
JSON/HTTP
Microservice B
.NET
Microservice C
JSON/HTTP

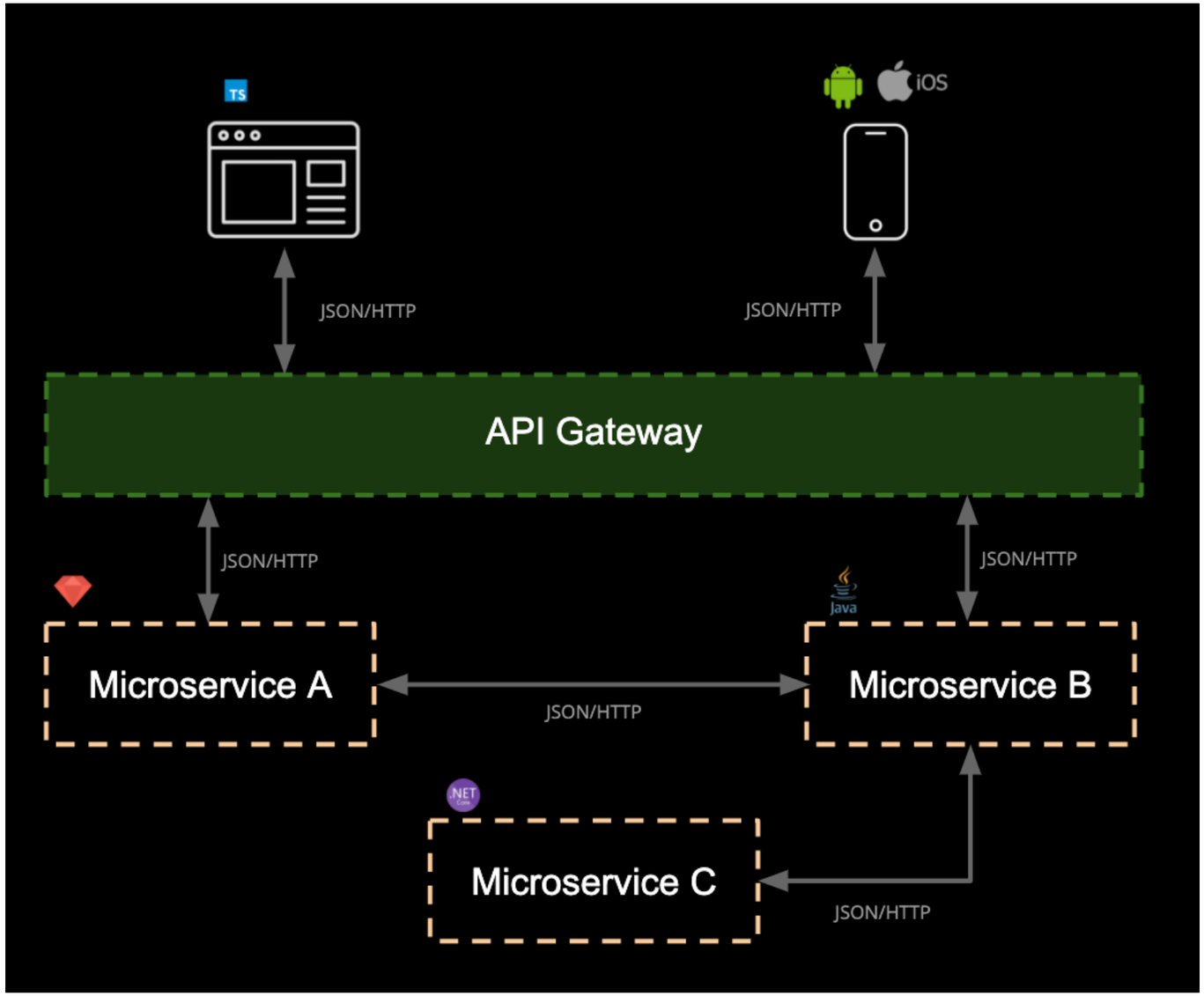
Disadvantages of End-to-end Testing

- Timely
- Costly
- Difficult to debug
- Error-prone
- Fragile



Solution?

- Mocking
- Lowers cost
- Lowers development time
- E2E???
- Traceability???

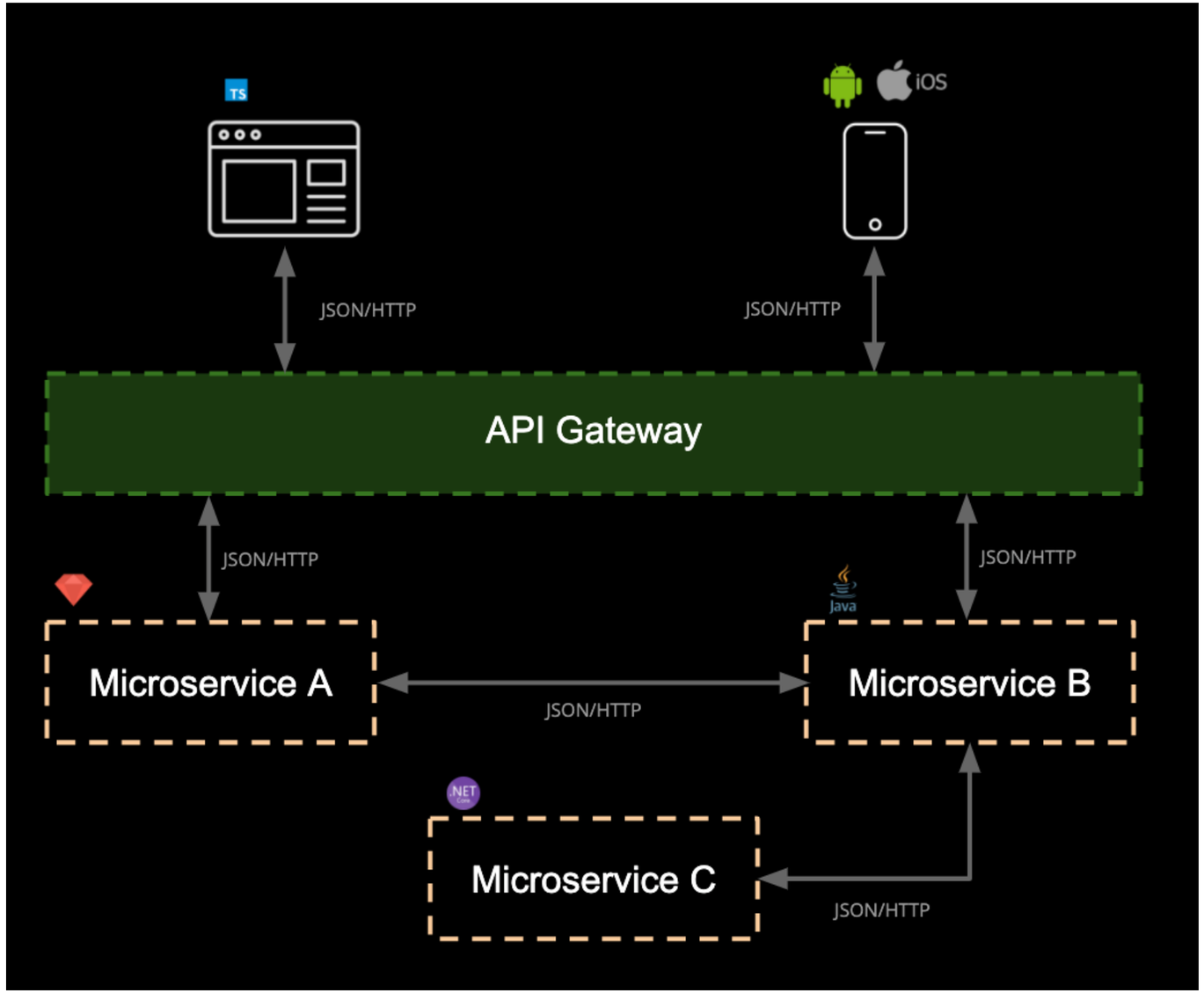


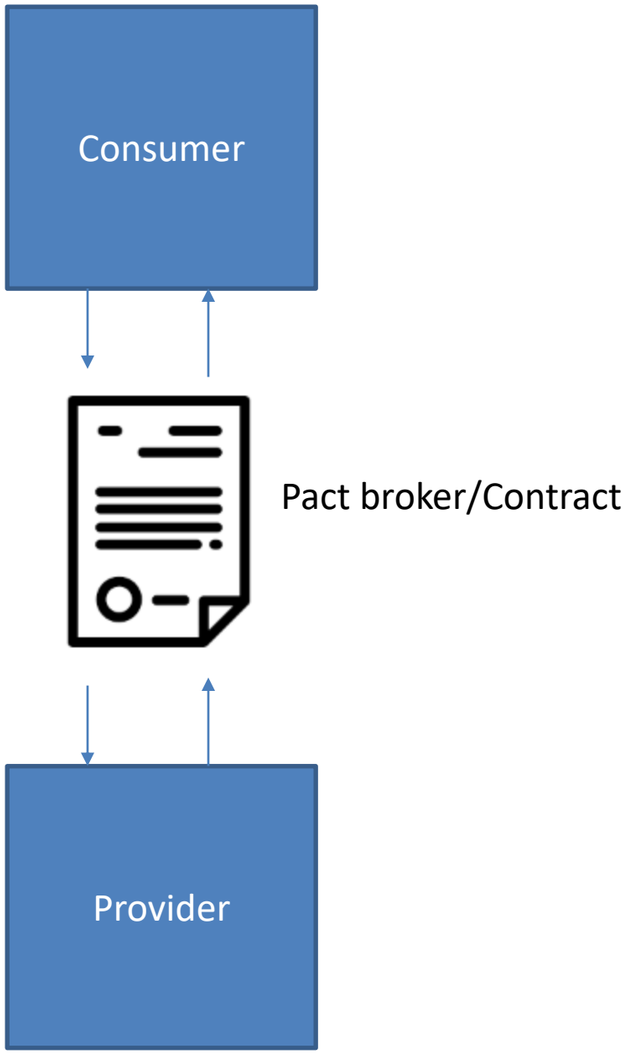
What is Pact?

- Testing HTTP and message integrations using contract tests
- Immediately applicable anywhere where you have two services that need to communicate
- Cheaper than E2E testing
- No dependencies

Why use Pact contract-driven testing?

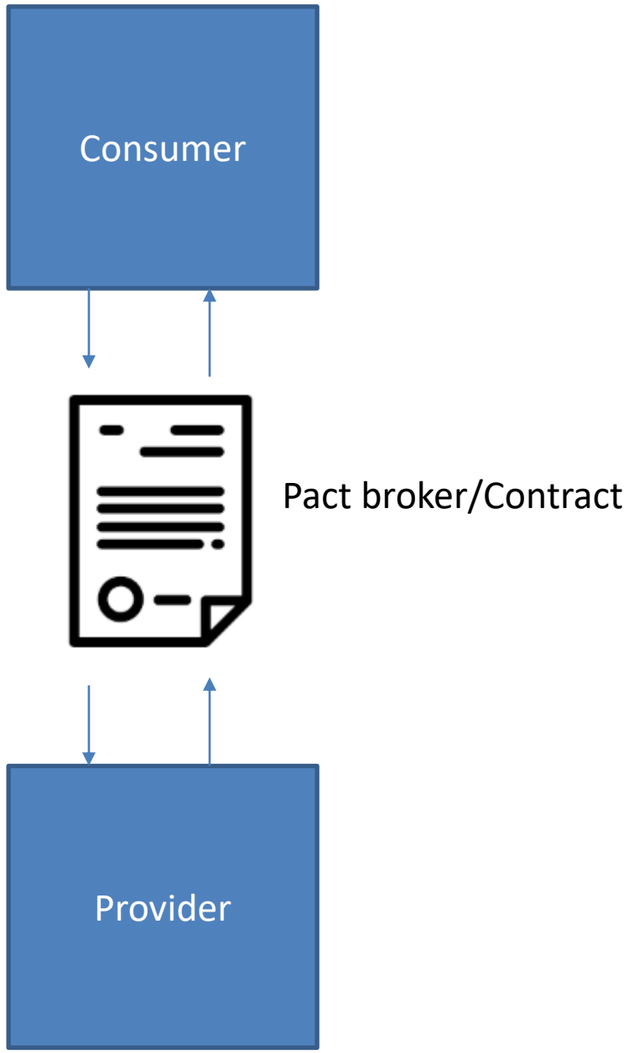
- Environment independent
- Easily debuggable
- Traceable
- Cheap to develop


TS
iOS
JSON/HTTP
JSON/HTTP
API Gateway
JSON/HTTP
JSON/HTTP
Java
Microservice A
JSON/HTTP
Microservice B
.NET
Microservice C
JSON/HTTP


Consumer
Pact broker/Contract
Provider

Glossary

- Consumer
  - Sends requests, consumes response
- Provider
  - Answers request, provides response
- Pact-broker
  - Man-in-the-middle, storage for pact contracts, testing environment
- Pact contract
  - Stores expected requests and responses in pact broker

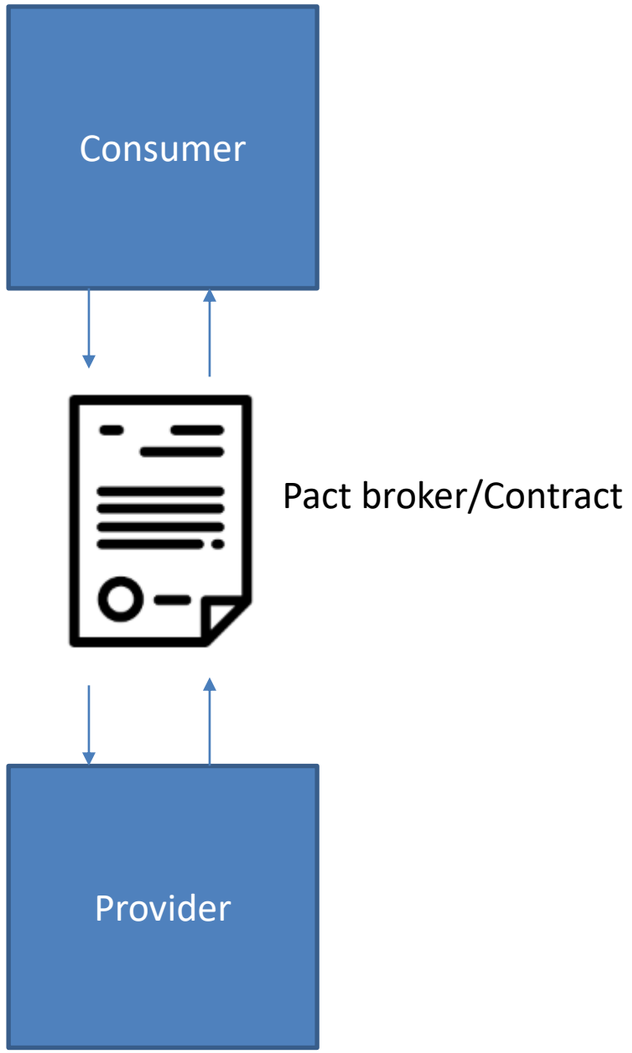


Consumer-side contract testing

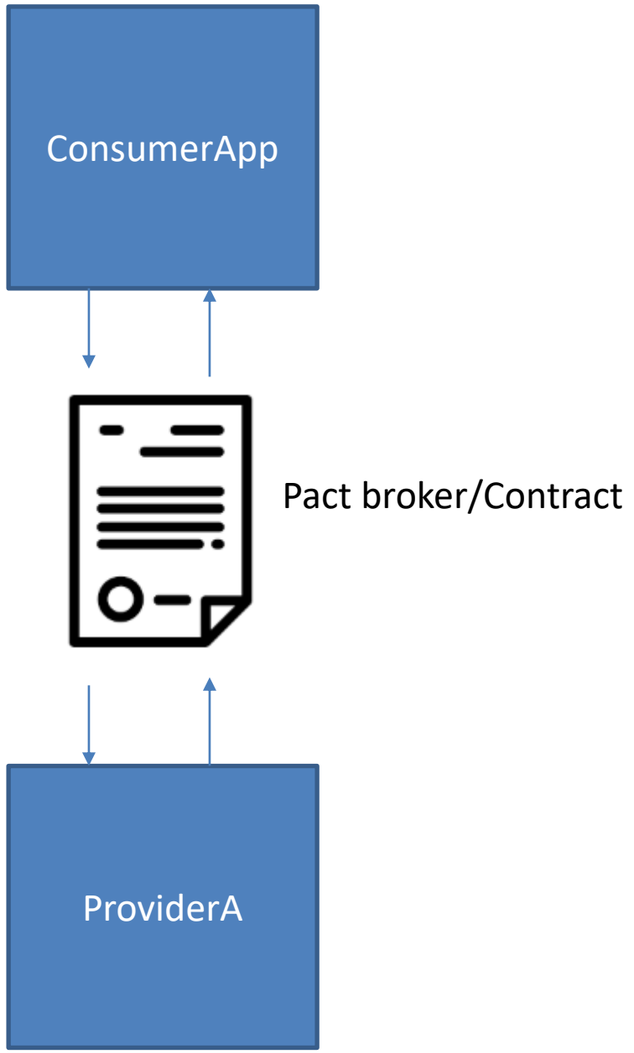
- Am I able to send the request?
- Am I able to handle the response?

- Need to write PACT contract
- Assumption of a request + assumption of a response
- Works as a mocked provider

- Proceed with simple “unit” test

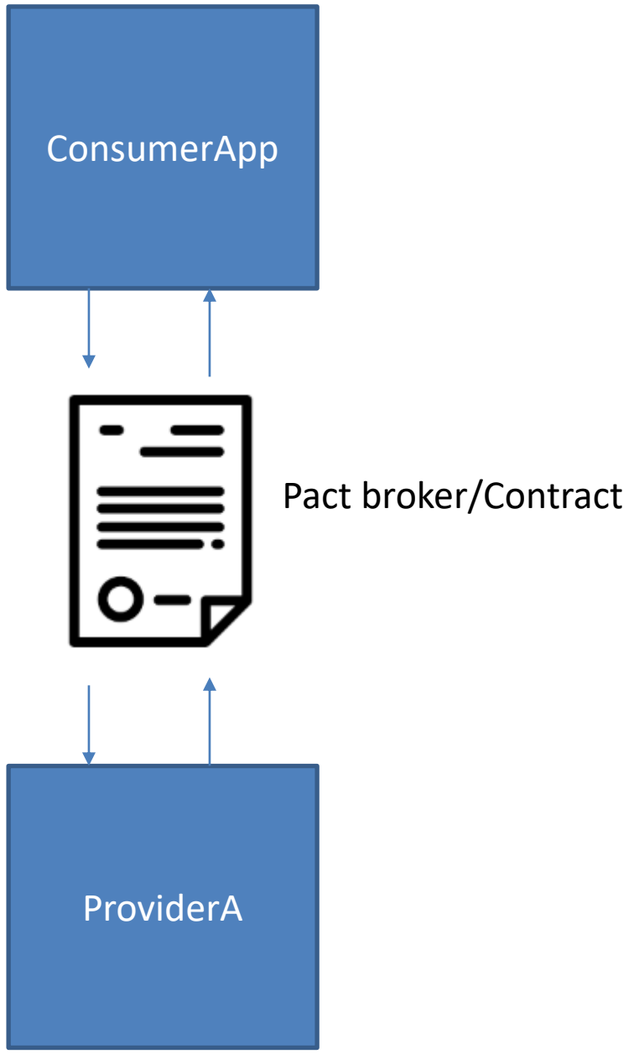


Consumer side DEMO

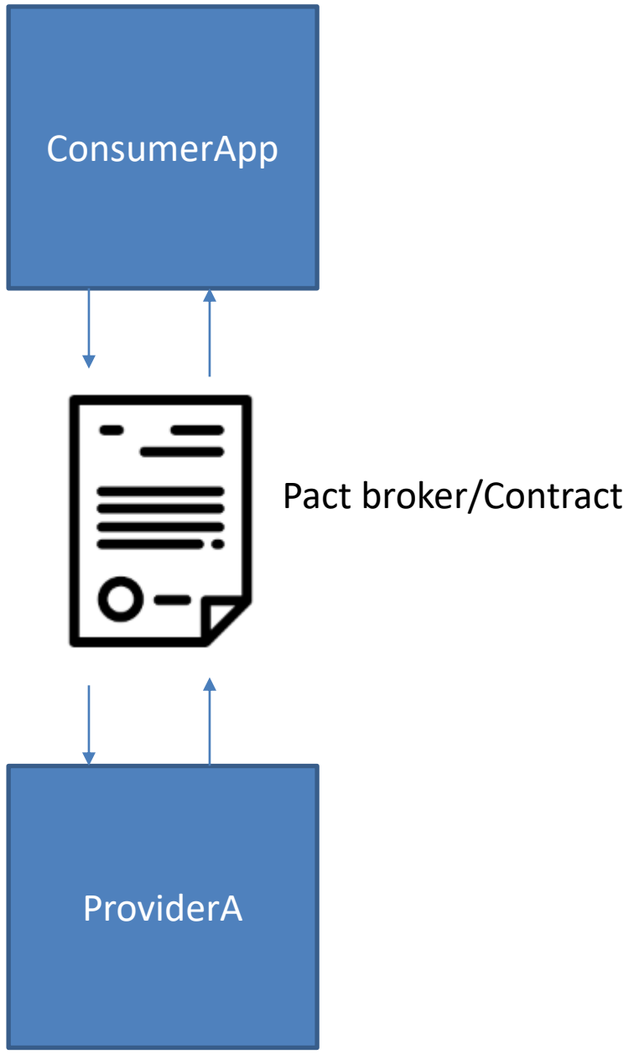


Consumer side DEMO

- Familiarize with API
- Created testing class
- Set @PactTestFor annotation
- Create PACT contracts
- Verify contract by implementing “unit” tests
- Push contracts to PACT broker

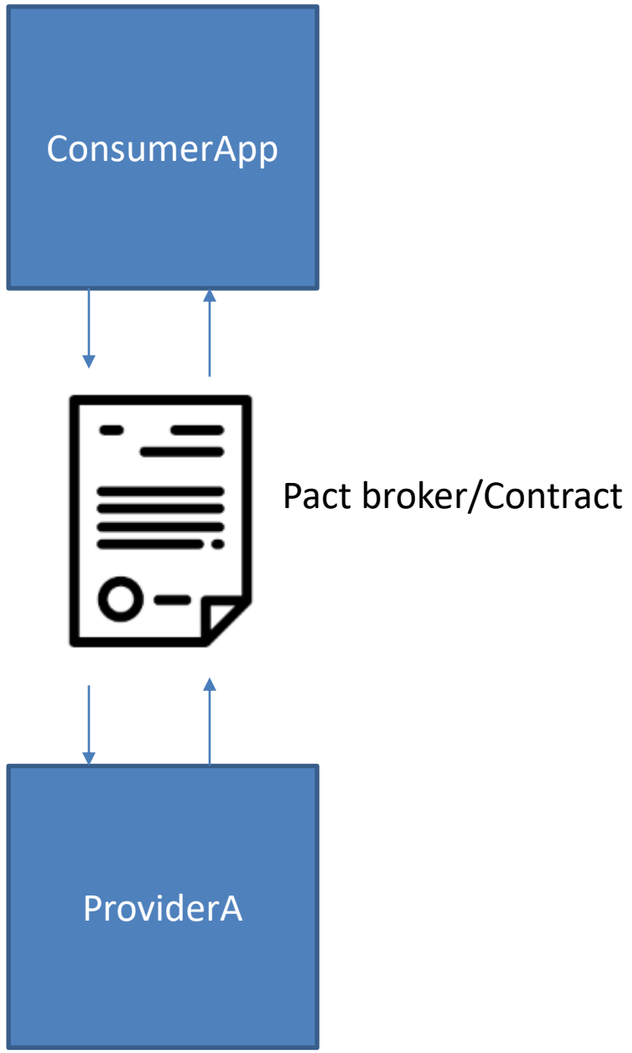


Provider side DEMO



Provider side DEMO

- No need to write PACT contracts
- Contracts are downloaded from PACT broker
- All interactions are run against provider
- Possible to change behavior of application through @State
- Final result pushed to PACT broker



Summary

- State of E2E testing
- Its disadvantages
- What is PACT
- How it works
- When and how to use it