Application Modernization: Migrating to an API based Architecture with Azure API Management

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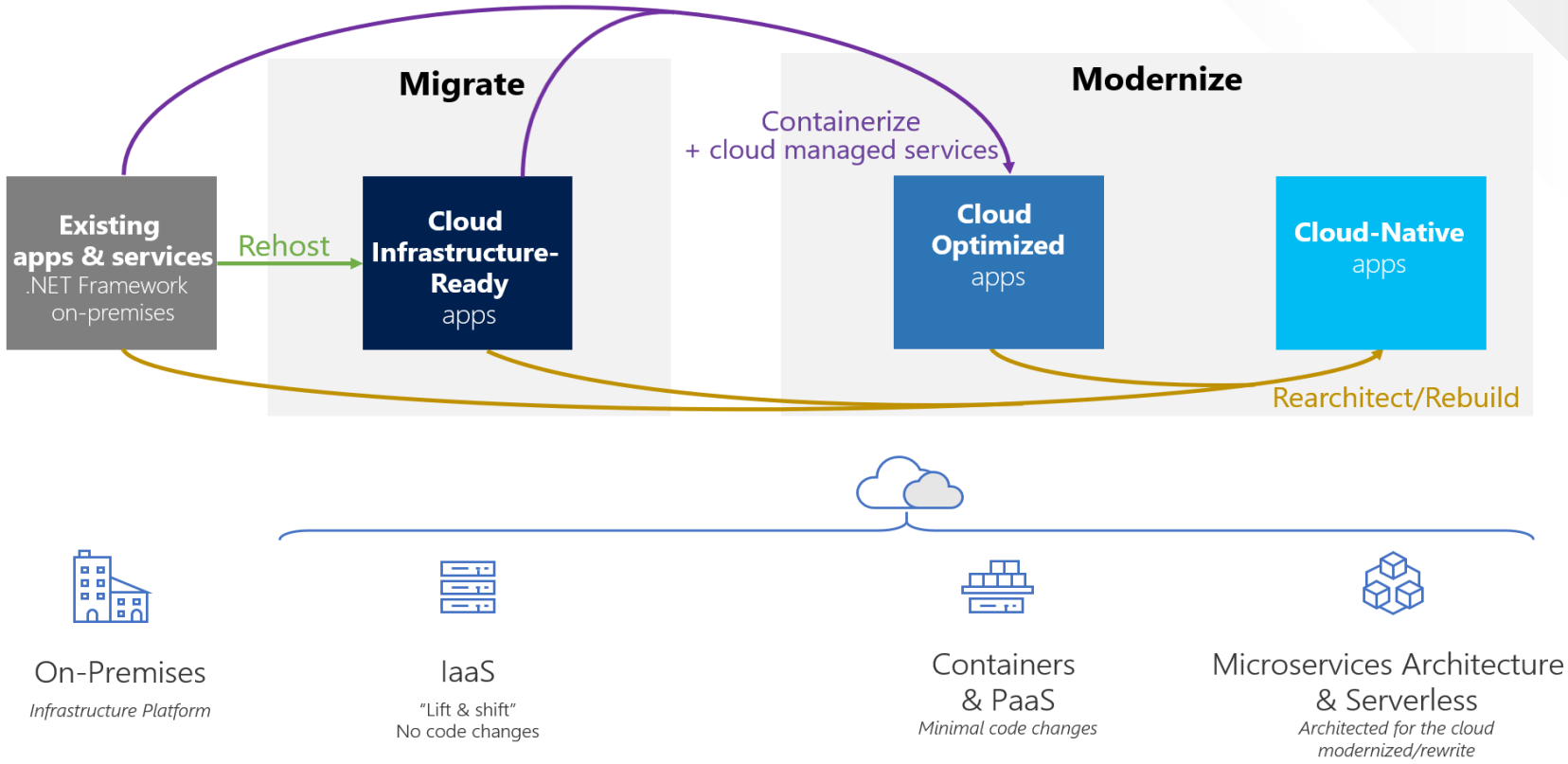
Agenda

1. What's Application Modernization and why everyone talks about it?
2. Planning legacy application modernization
3. What's Azure API management and why it is important in Application Modernization journey
4. Demo

Journey to the Cloud



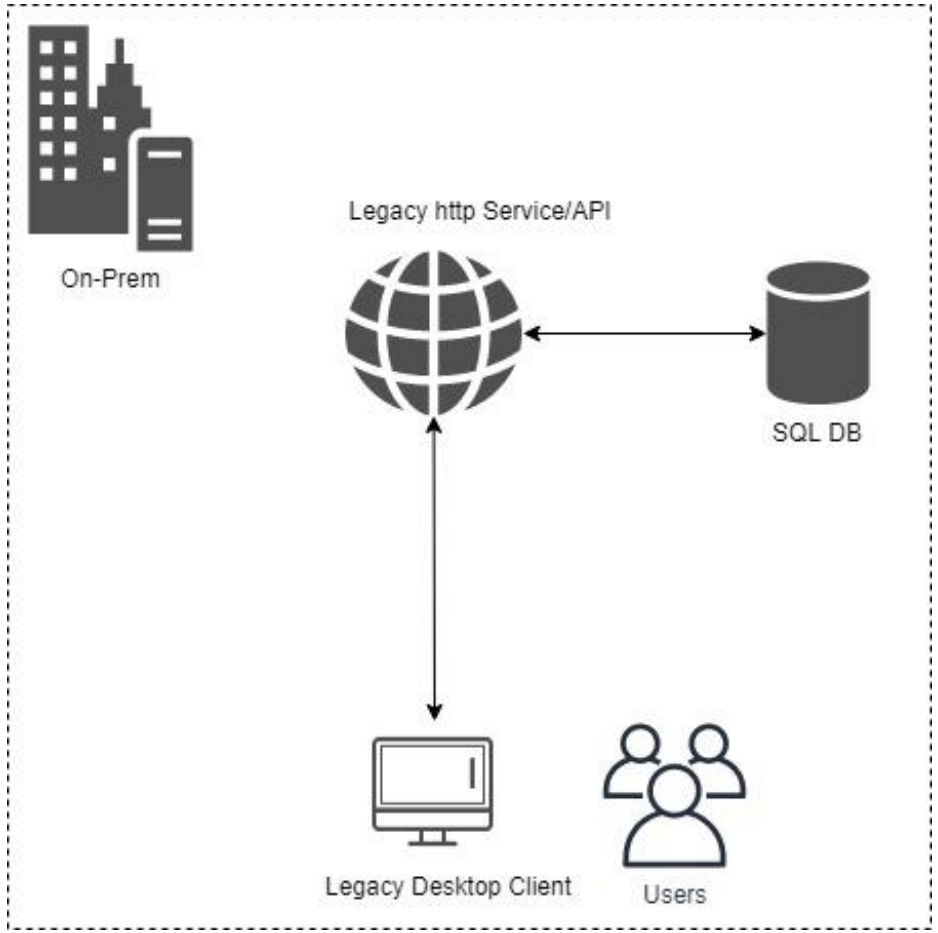
Source: Modernize existing .NET applications with Azure cloud and Windows Containers (2.0 edition)

Application Modernization : Challenges

- Where to start the modernization
- Business continuity
- DevOps culture
- Learning curve
- Visibility

eShop : Planning Modernization

eShop : Modernization



Business Goal

- Reduce costs
- Improve business growth by improving agility

Technical Goals

- Accelerate feature development
- Improve maintenance
- Address technical debts

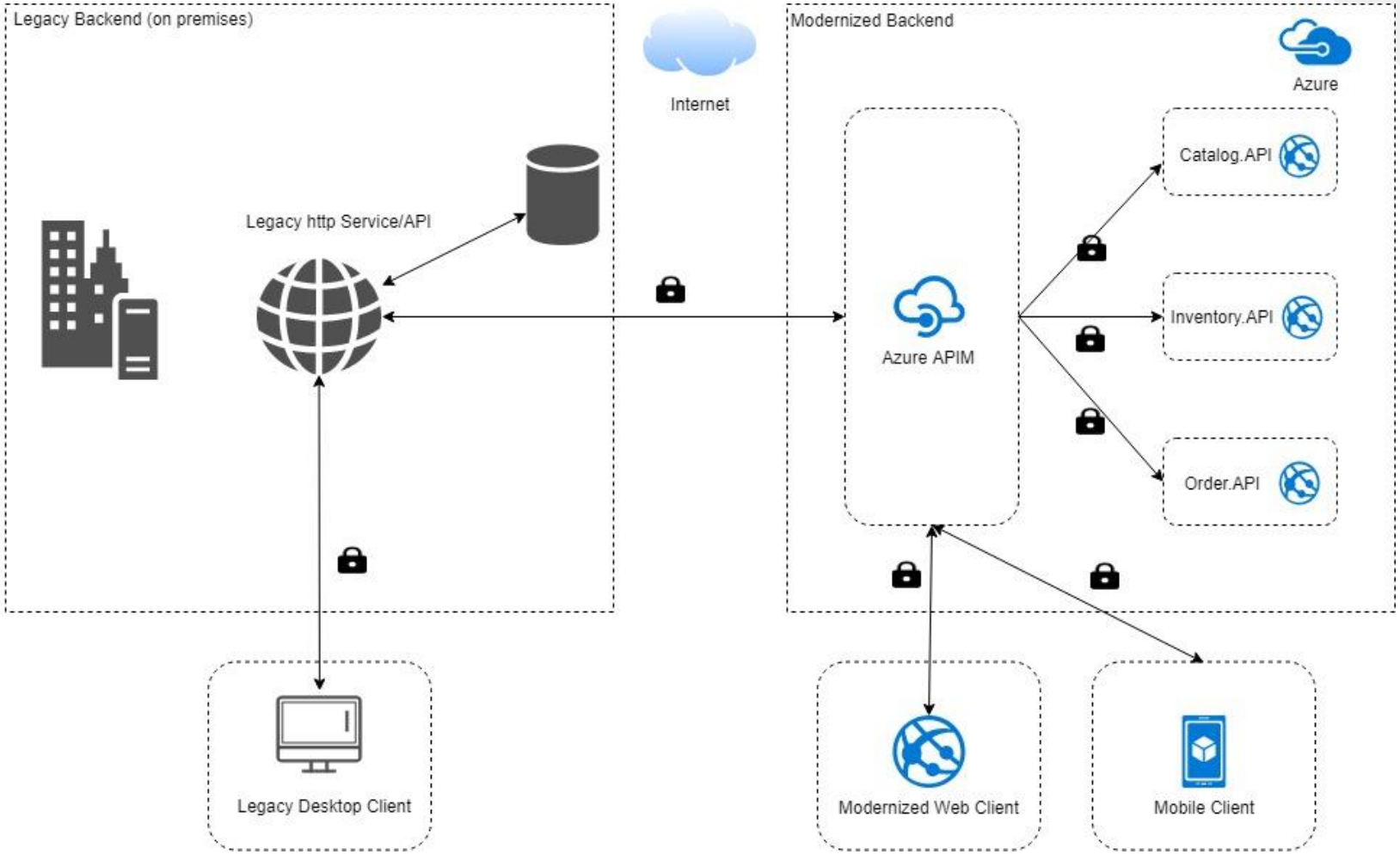
Operation Goals

- Some modernization steps are performed in parallel
- New Web client will be developed by contract development team

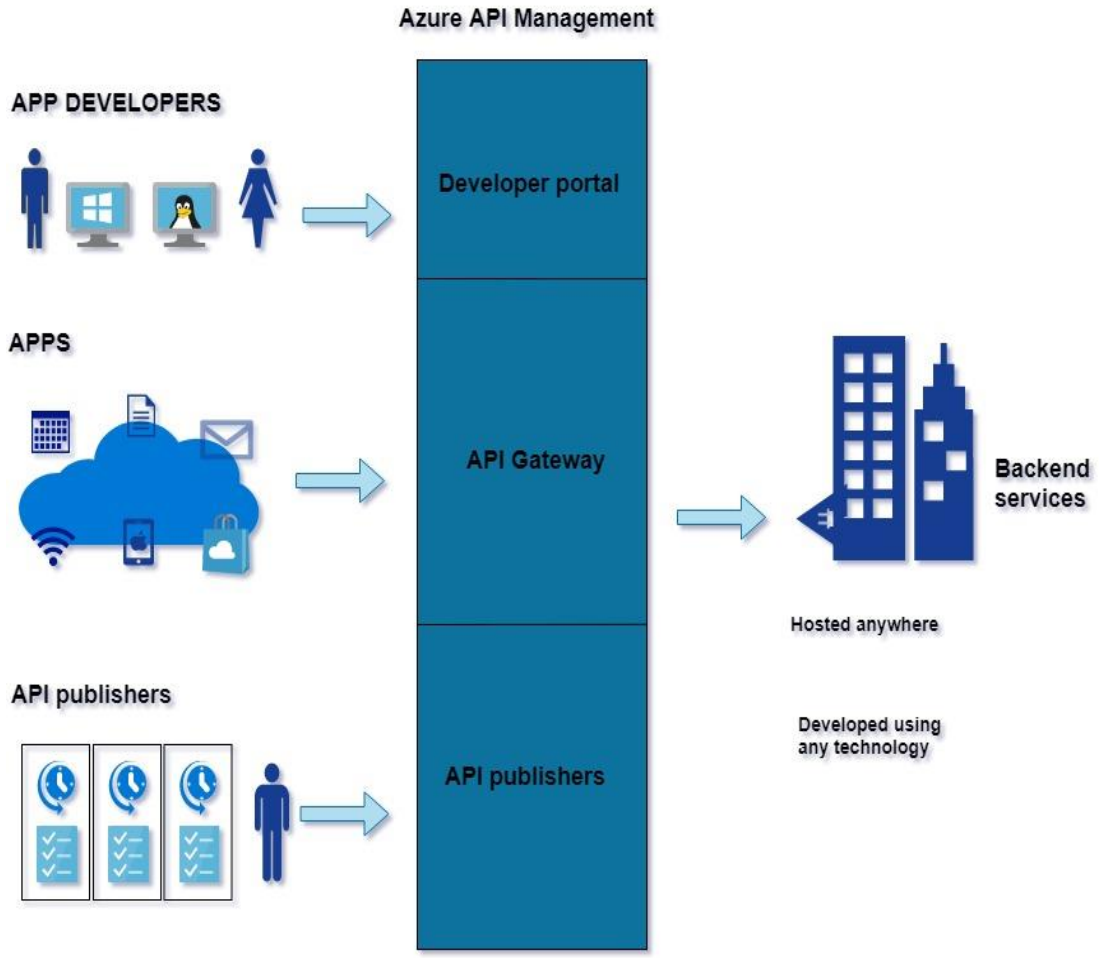
eShop : Modernization Use Cases

- Get Analytics about legacy APIs
- Add feature to existing service
- Add new Order service
- Extract existing modules in to new Catalog and Inventory services
- Expose Mobile friendly APIs
- Managing different API versions
- Legacy API authentication
- Add request throttling to legacy APIs

eShop : Modernization Architecture



Why Azure API Management Service ?



- Provide an API facade for all of your existing backend services
- Add new capabilities to existing APIs
- Insights about usage and health
- Easily package and publish APIs to internal and external developers
- Self service Developer Portal
- API documentations

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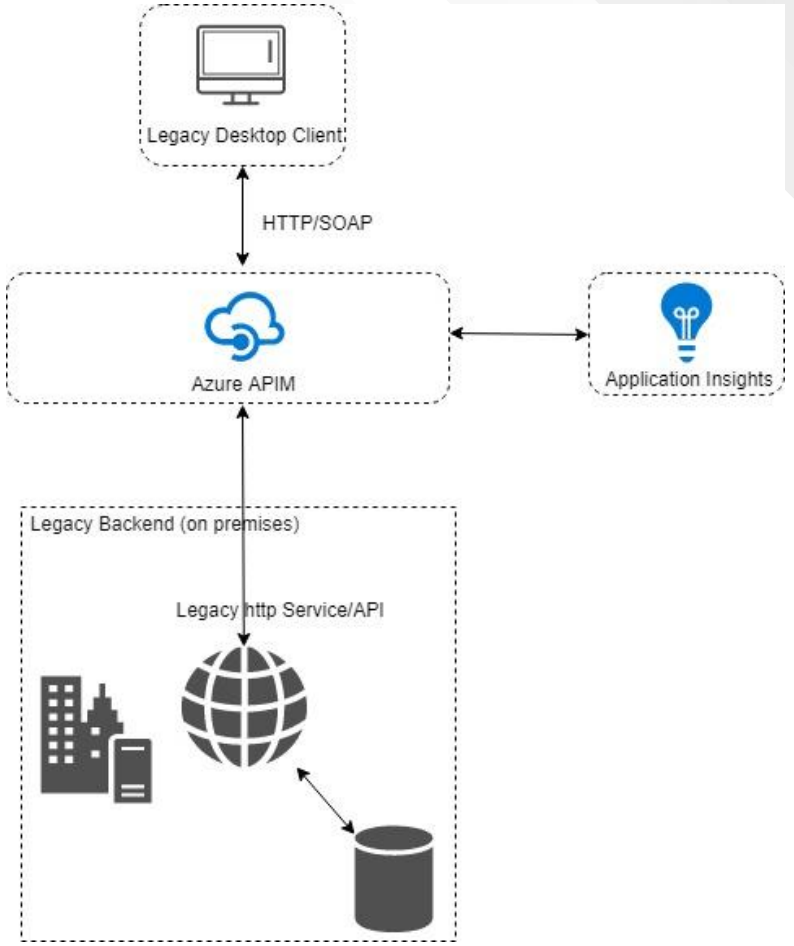
Demo : eShop Modernization

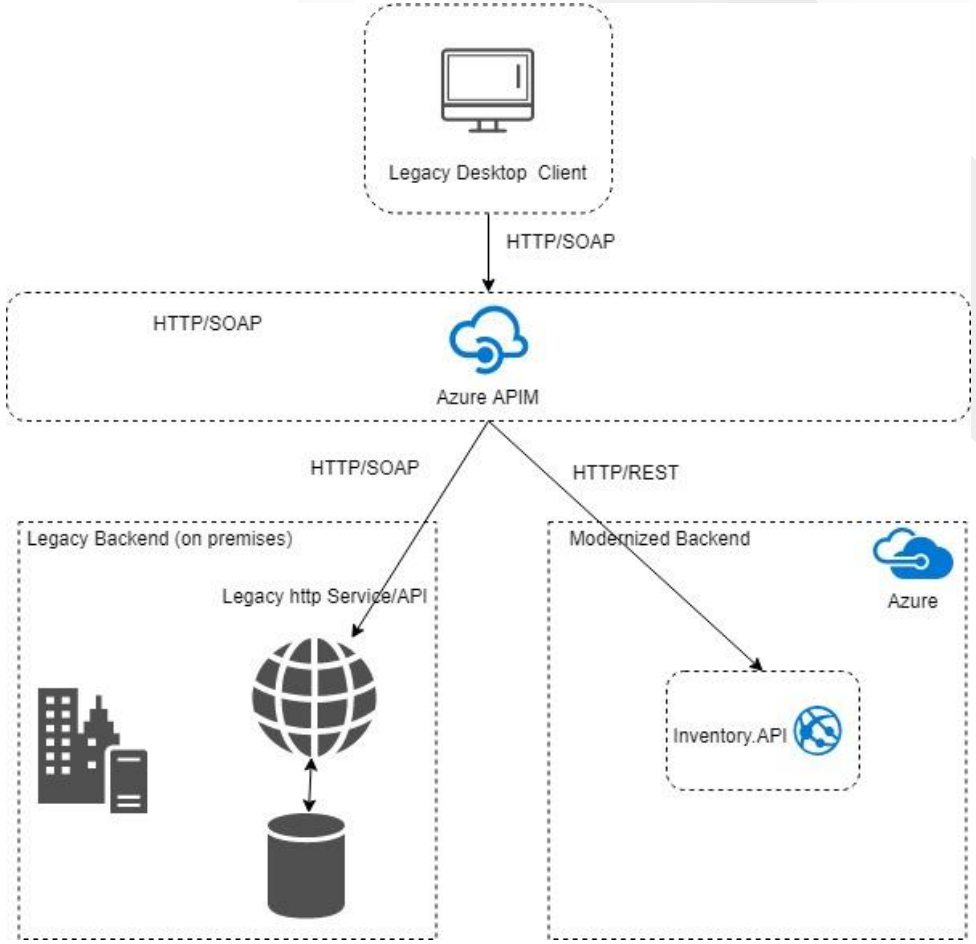
Use Case 1 : Get Legacy API analytics

Scenario : Get analytics about legacy APIs. This is to be used as a mechanism to prioritize modernization effort.



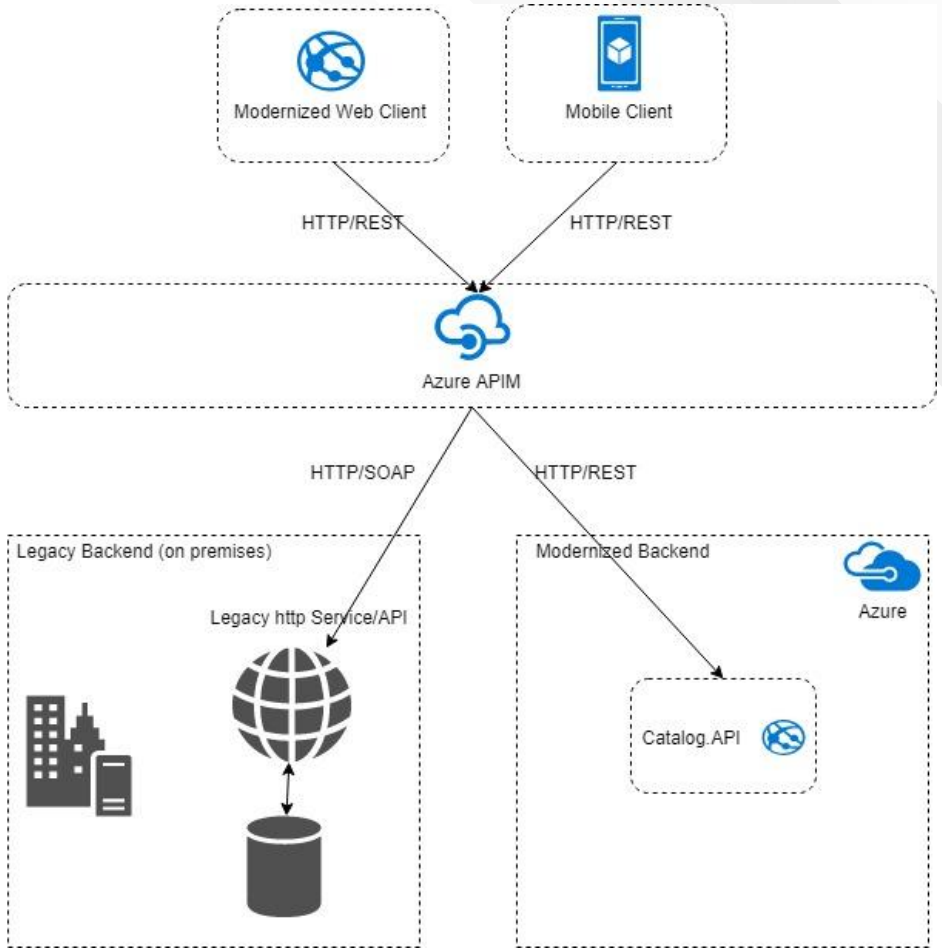
Use Case 2 : Adding feature to existing service

Scenario : Adding a new feature to Catalog module



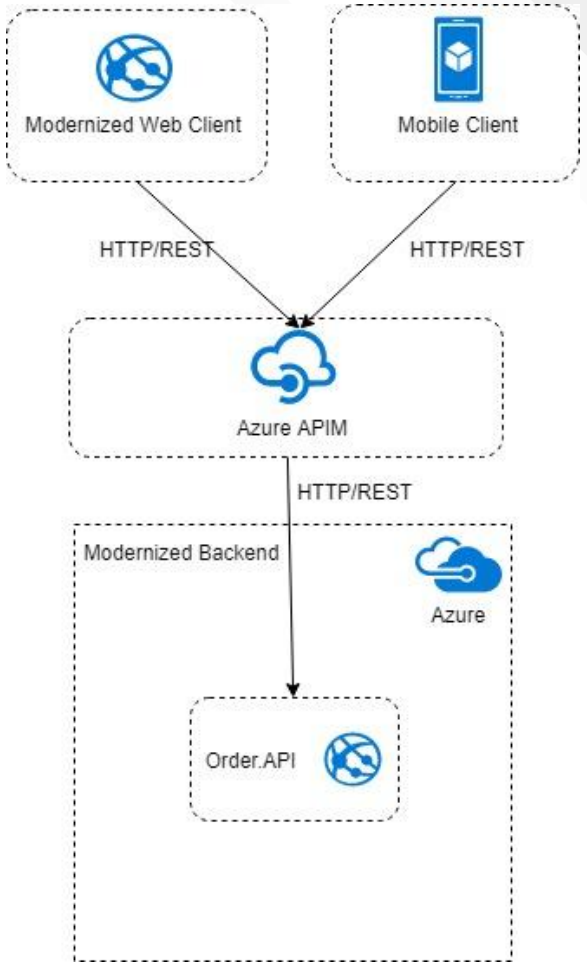
Use Case 3 : Extracting service

Scenario : Extract Catalog service. Use Azure API Management Service as API gateway to route the request to legacy and modernized backend API



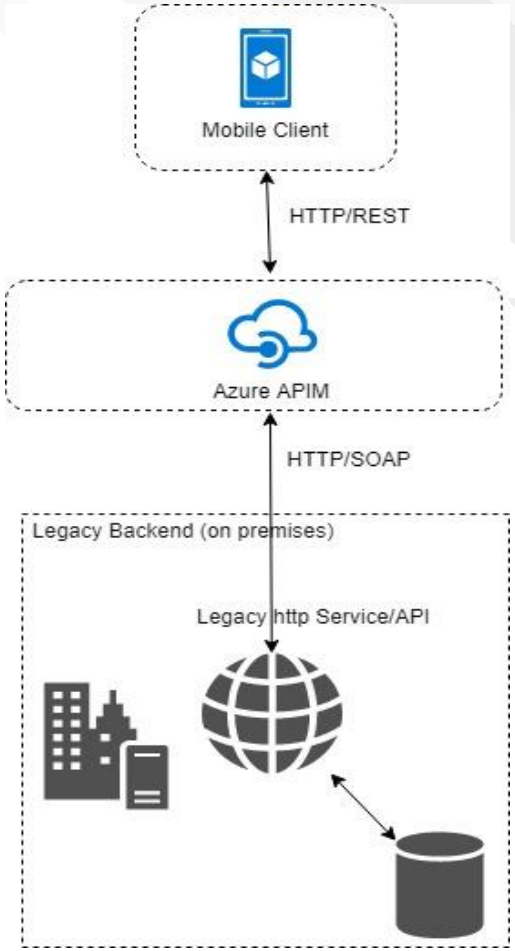
Use Case 4 : Adding new service

Scenario : Adding new Order Service. Use APIM to do API first development



Use Case 5 : Expose mobile friendly API

Scenario : Expose Catalog WCF service as REST service



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Some other use cases

- Releasing multiple versioning of API
- Request Throttling
- Caching
- Security

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Key takeaways

- Application Modernization is an iterative process
- Make sure to set business, technical and operational goals before starting the modernization
- Use Azure API management to get analytics about legacy backends
- Use Azure API management to do the contract first development
- API response can be from legacy, modernized backend or even a mock
- Use policies alter/modify request/response with Inbound and outbound processing
- Add more capabilities to API with Request Throttling, Caching, Security...etc.

Resources

Source code for sample and presentation slides,

github.com/SumedaHerath/eShopBootcamp

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