



## Integration of SaaS using IPaaS

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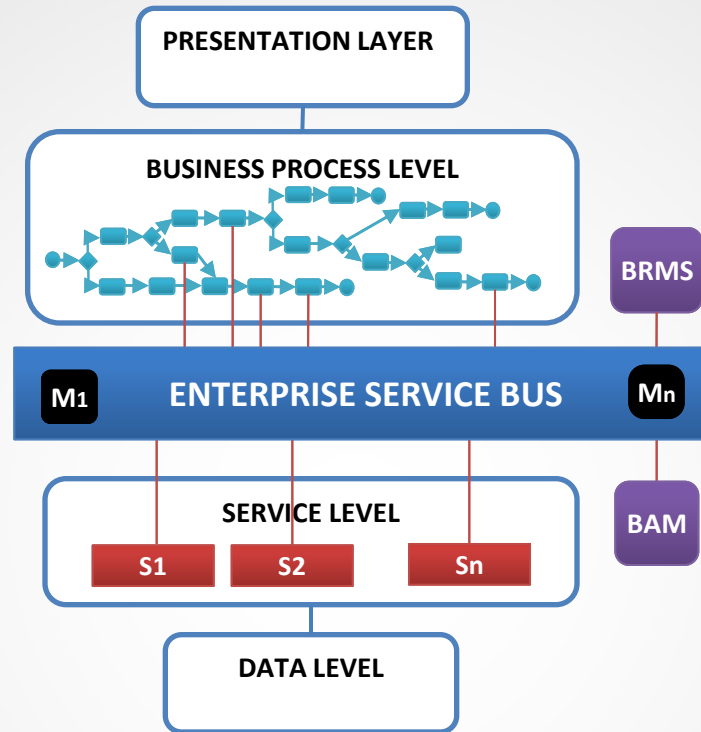
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# Integration... Is it Necessary?

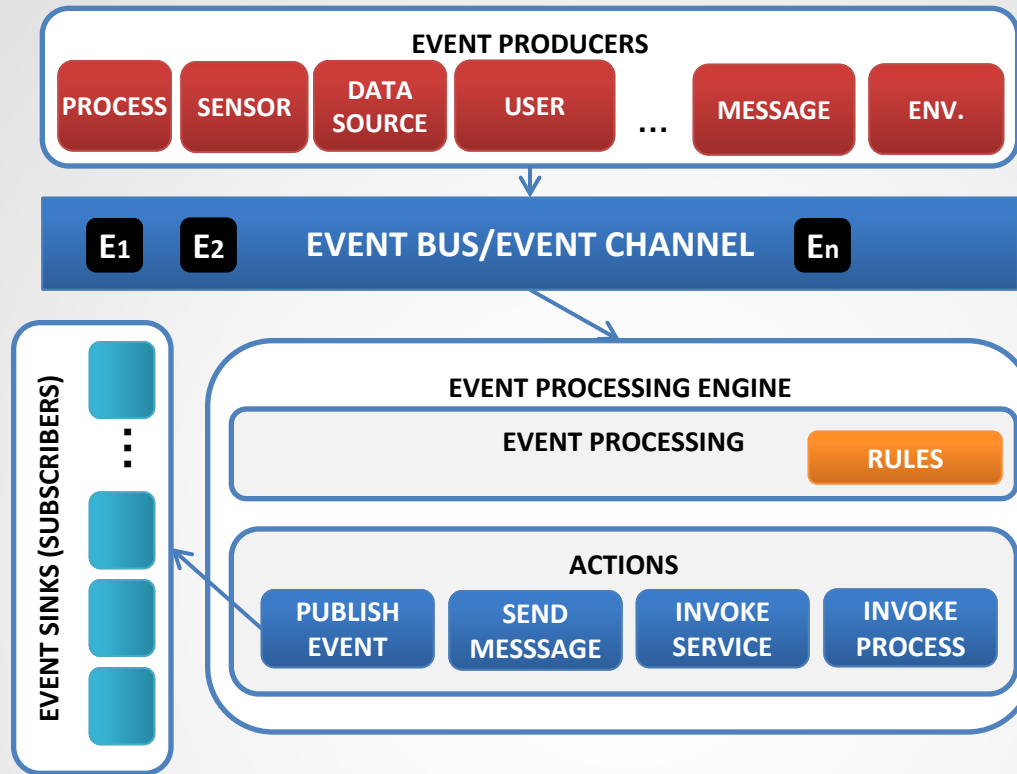


# Approaches to Integration – SOA



- **SOA** offers concepts, architecture and framework
- Interoperable and reusable **services**
- Invocation-style communication through **messages**

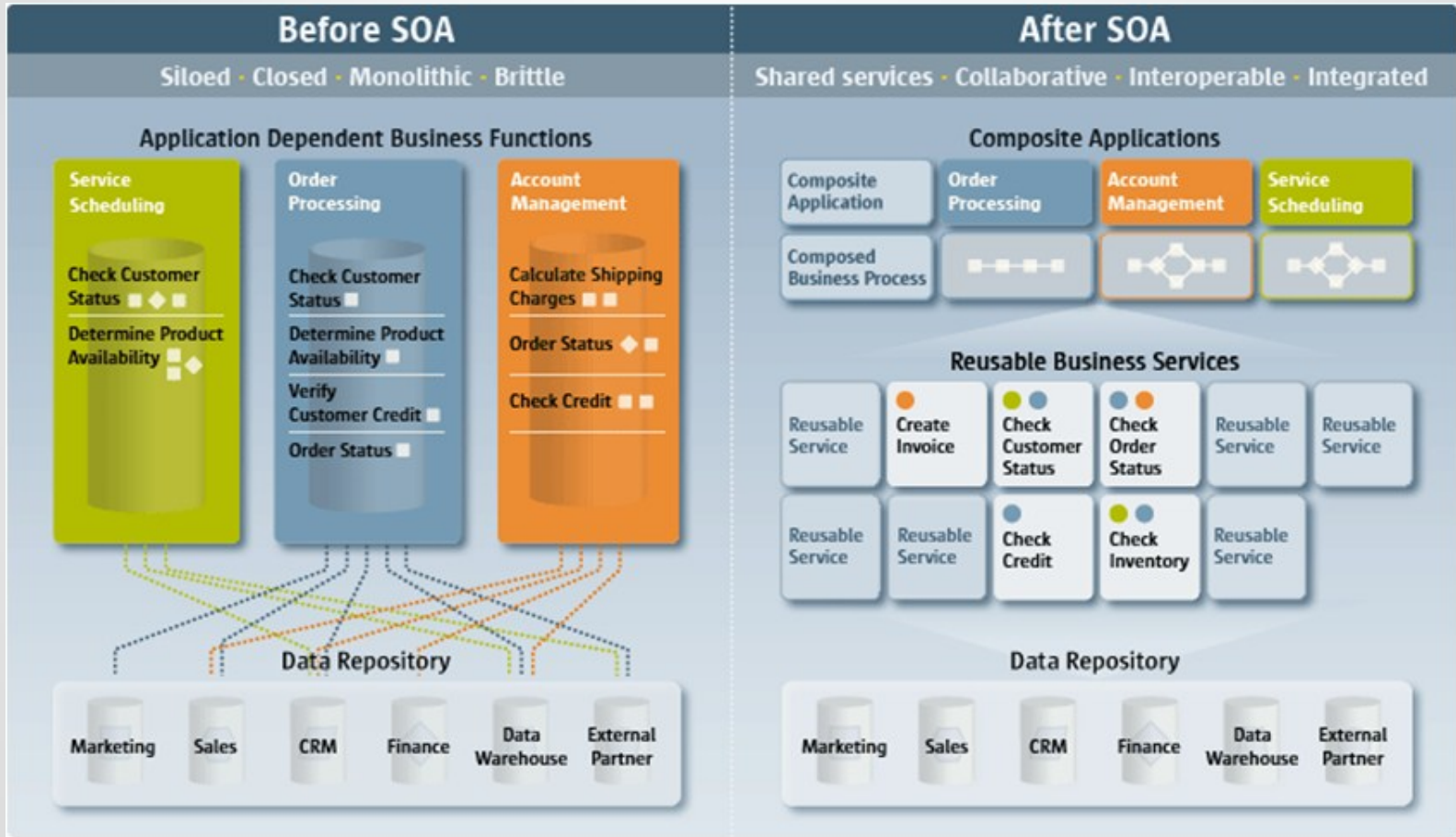
# Approaches to Integration – EDA, Event Driven SOA



- **EDA** is based on the production, detection, consumption and reaction to **events**
- Loose coupling – **publish/subscribe**

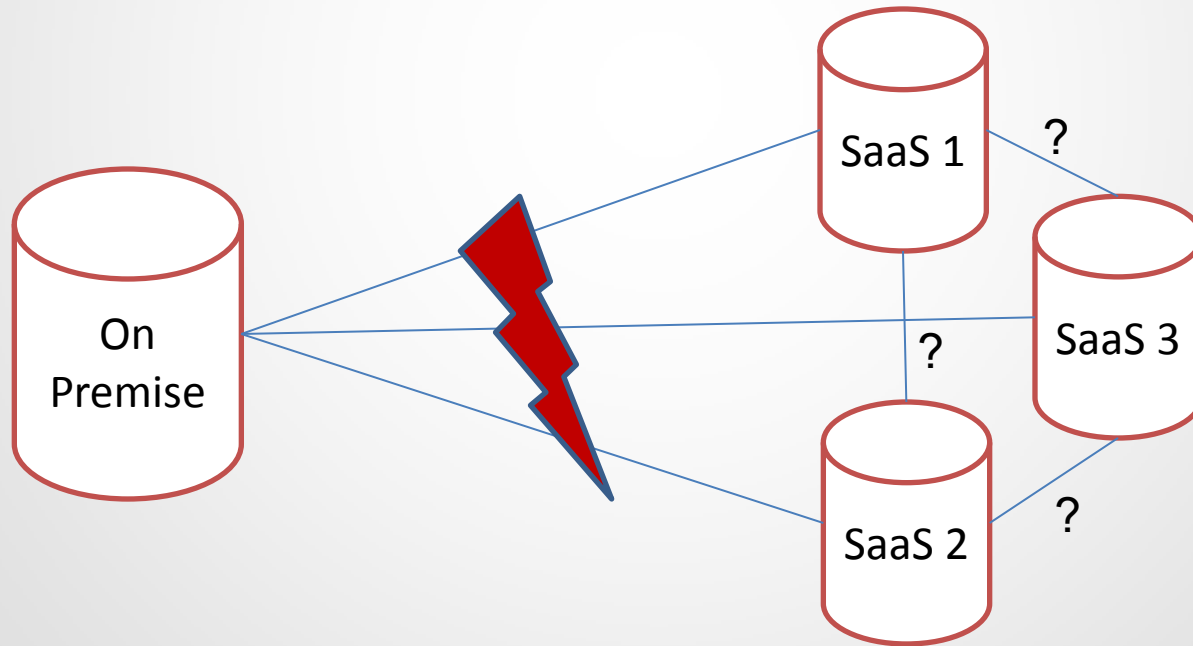
# SaaS Integration Challenges

- Cloud integration challenges are analogous to challenges that have been known in the world of local, siloed applications.
- SaaS apps usually have their own database and application logic



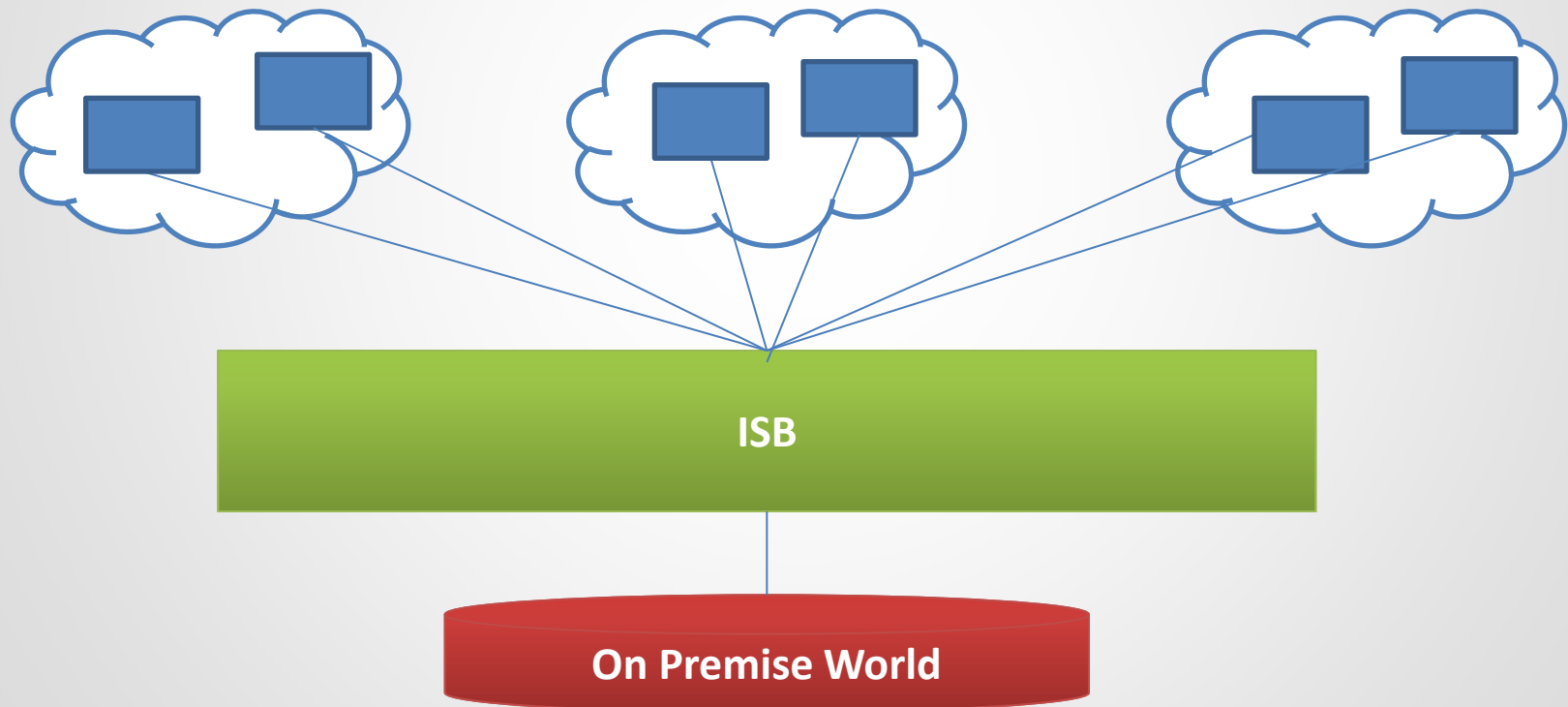
# SaaS Integration Challenges – Data Level

- Data Level Integration
  - MDM – synchronization, transformation, integrity
  - Vast amount of data
- Import/export?
  - point-to-point connections between SaaS applications imply that required effort to integrate more SaaS applications rises exponentially



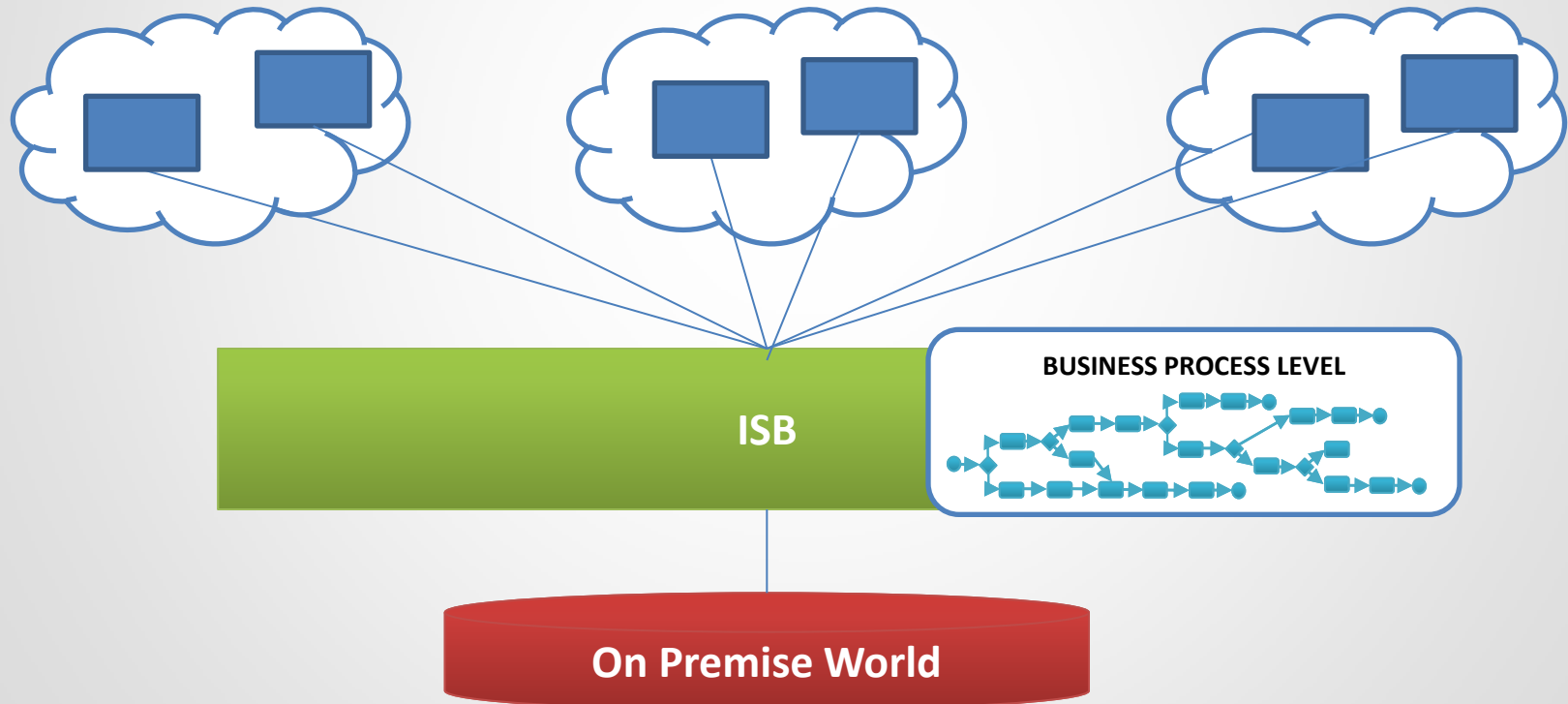
# SaaS Integration Challenges – Application Level

- Need to share functionalities across different SaaS applications
- Variety of technologies and security mechanisms
- Internet Service Bus



# SaaS Integration Challenges – Business Process Level

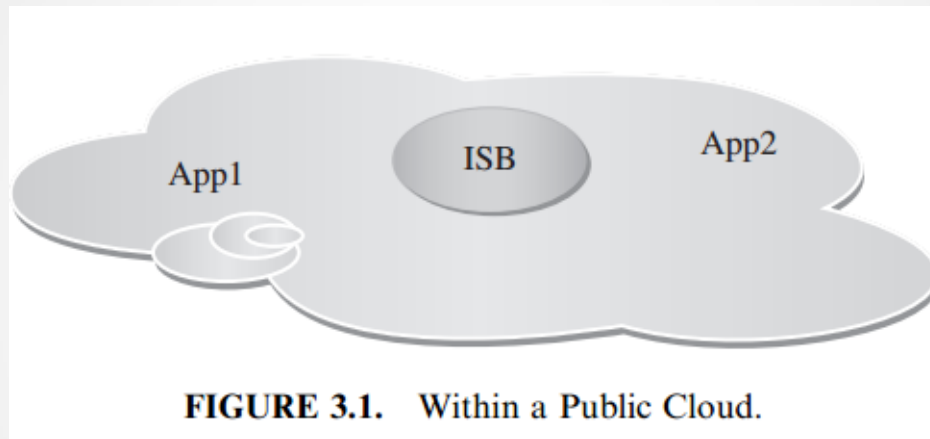
- Goal is to develop streamlined, end-to-end business processes (alignment with business goals)
- Requirements: data level and application level integration
- Composition of services/SaaS (e.g. BPEL)





# How and where can we integrate?

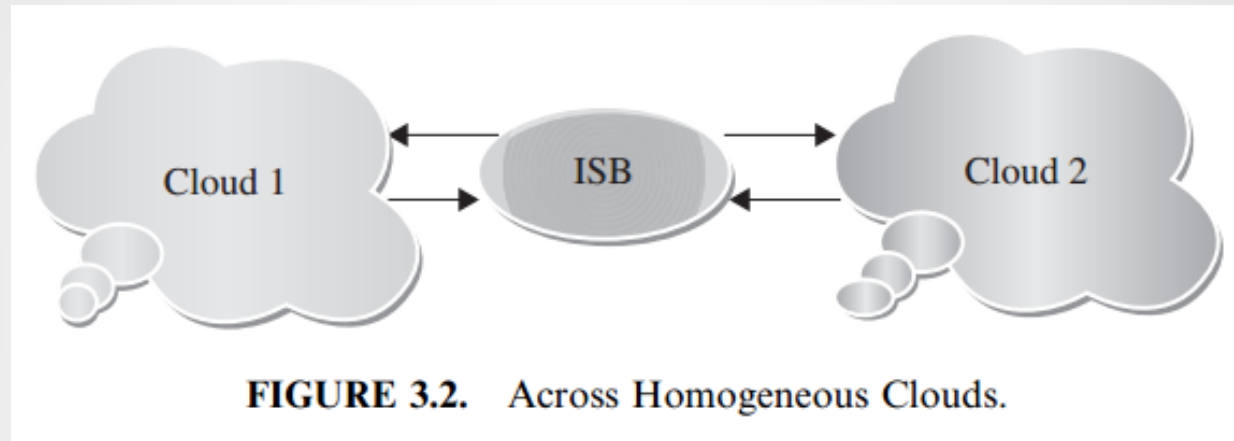
- On premise/Off premise
- Within a public cloud



SaaS and integration middleware are hosted in a public cloud

# How and where can we integrate?

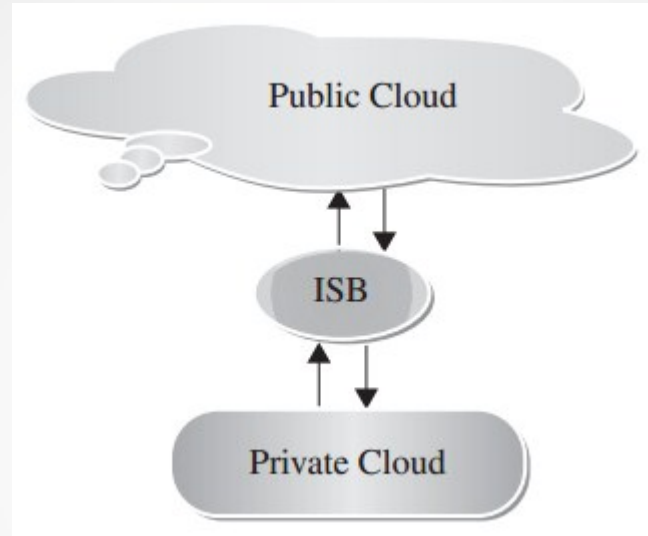
- Across Homogeneous Clouds



SaaS applications are on separated clouds.  
Integration middleware can be in one of SaaS clouds or on a separated cloud

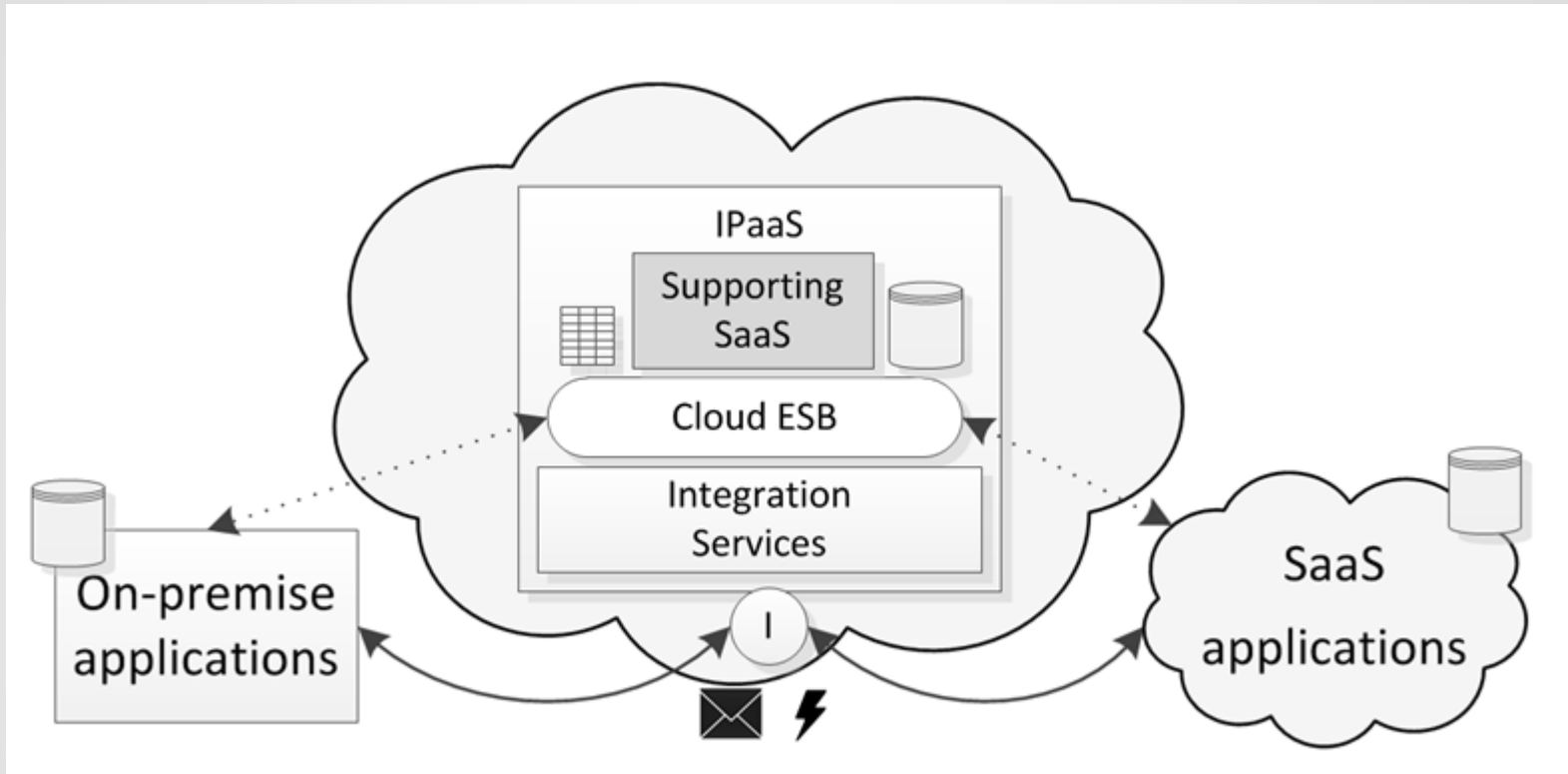
# How and where can we integrate?

- Across Heterogeneous Clouds



Some applications run in a public cloud and some run in a private cloud.  
The integration middleware can be on-premise or off-premise

# IPaaS - Integration Platform as a Service



IPaaS offers on-demand integration middleware that enable any kind of integration: SaaS to SaaS, SaaS to on-premise and on-premise to on-premise

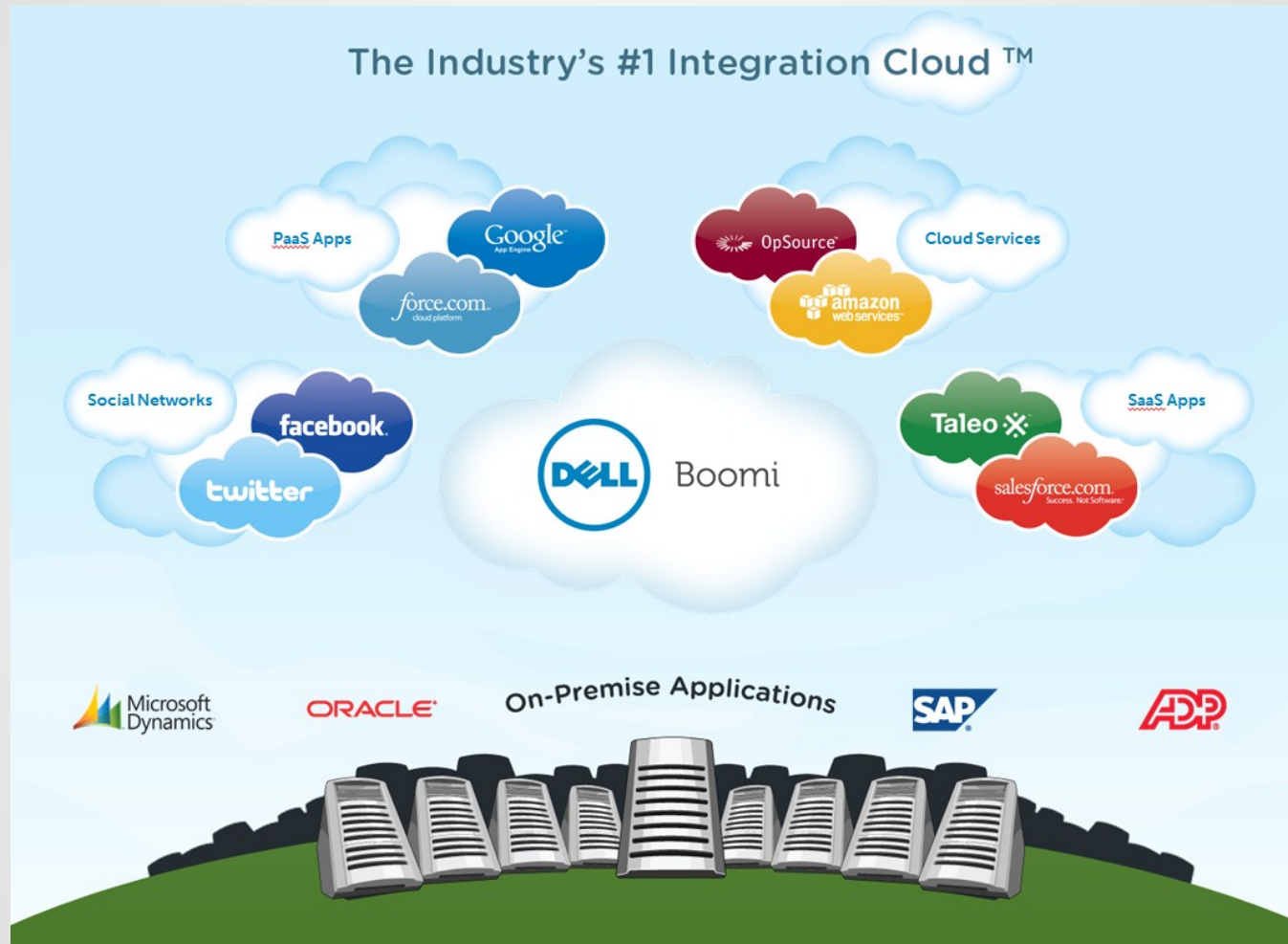
# IPaaS Characteristics

- Data integrity and security:
  - Integrity, synchronization, transformation, migration
  - Security for information retrieval, extraction, mediation, transformation and propagation
- Data transformation and migration
  - transformation of data between different storage types and formats
  - data migration enables data integration

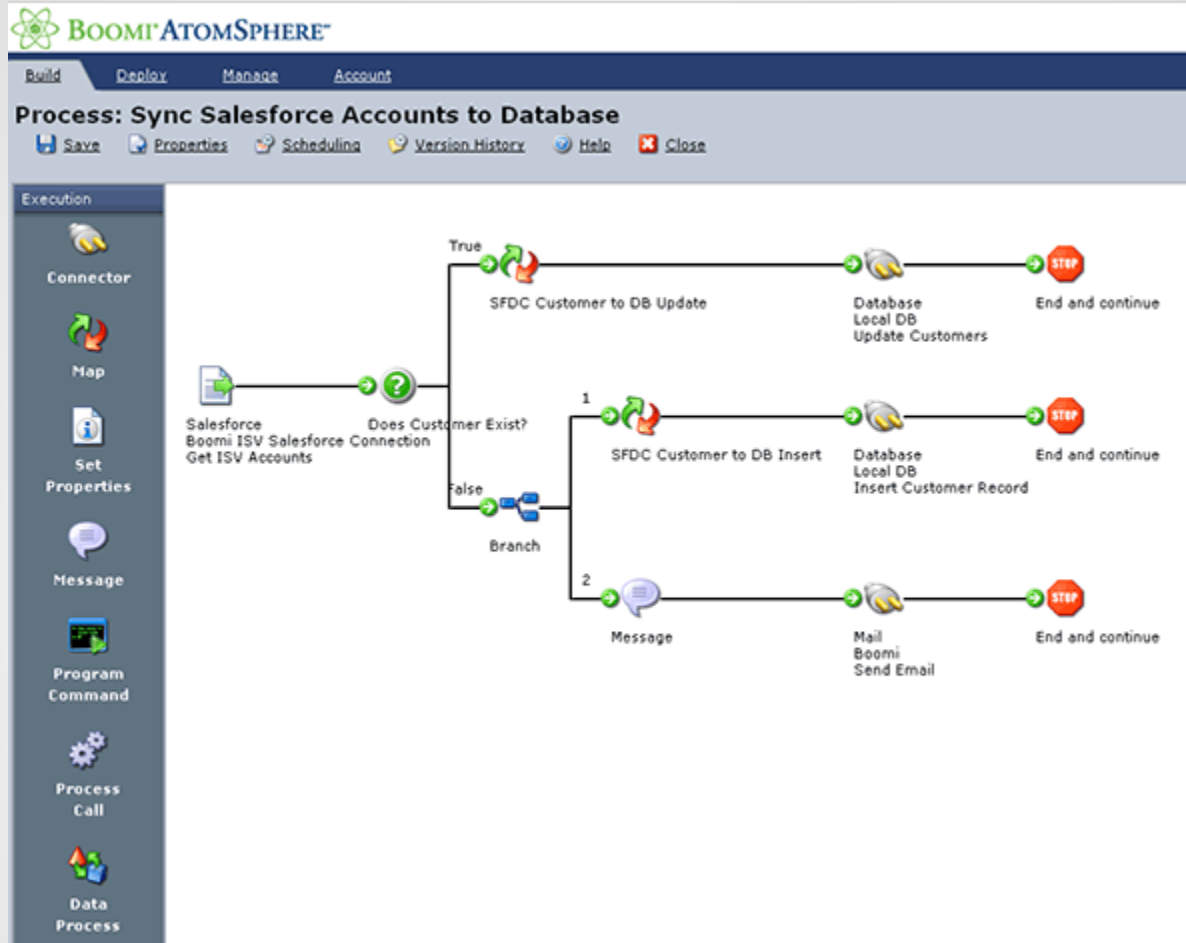
# IPaaS Characteristics

- **Connectivity**
  - Cloud-based ESB (ISB) should provide the ability to connect different systems using their native interfaces
- **Governance, management and provisioning**
  - mechanisms and functionalities to support governance and effective management and provision of integration services
  - extended SOA governance as it should cover SaaS application performance, backward compatibility, continuous support, security...
- **Orchestration**
  - advanced IPaaS should enable service orchestration into business processes composed of diverse SaaS services or applications

# IPaaS example



# IPaaS example



Enables schedule-based Invocation and event-based Invocation



# Thank You

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