Integration of SaaS using IPaaS

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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

![Diagram showing ISB connecting with different cloud-based services](image-url)
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

The Industry’s #1 Integration Cloud™

PaaS Apps

Google Apps

OpSource

Cloud Services

Social Networks

facebook

twitter

Dell

Boom

On-Premise Applications

Microsoft Dynamics

Oracle

SAP

ADP
Enables schedule-based Invocation and event-based Invocation
Thank You

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