A Hybrid Integration Architecture for the Multi-Cloud Enterprise

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87% of companies are transforming to be more customer-centric.
of “leading-edge” companies believe augmented intelligence is key to improved customer loyalty

Source: Forbes insights - Industry-Leading Customer Experiences: How to Identify Opportunities, Bridge Silos and Accelerate Result with augmented Intelligence
the number of clouds the average enterprise is either using or piloting

Source: https://www.forbes.com/sites/joemckendrick/2016/02/09/typical-enterprise-uses-six-cloud-computing-services-survey-shows/#69d5a1a4a82b
Why Do You Need Different Types of Integration?
Digital Transformation and Cloud Adoption are leading to data sprawl

Legacy Systems
Multiple Public Clouds
Private Cloud
Mobile
SaaS Apps
Internet of Things
Rethink your integration architecture
Hybrid Integration Reference Architecture for Digital Transformation

- Mobile
- Partners
- API Economy
- IoT
- SaaS Offerings

API & Event Management

Composing invocations
Surfacing events
Data Integration
“Low level” connectivity

Integration

SoR

Systems of Engagement

Business logic

Empowering
Digital teams

Core Business Operations

webinar: http://ibm.biz/HybridIntRefArchYouTube
paper: http://ibm.biz/HybridIntRefArch
The integration architecture is reliant on transport backplanes.
The multi-cloud challenge
## Multi-cloud integration considerations

### What are the multi-cloud challenges?

<table>
<thead>
<tr>
<th><strong>Scope of management</strong></th>
<th><strong>Ownership boundaries</strong></th>
<th><strong>Latency</strong></th>
<th><strong>Migration/modernization</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>- self-managed pets</td>
<td>- application boundaries</td>
<td>- data location</td>
<td>- co-location and isolation of integration with its application</td>
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<tr>
<td>- platform managed cattle</td>
<td>- between/within clouds</td>
<td>- data replication close to consumer</td>
<td>- lightweight topology choices</td>
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<tr>
<td>- fully managed PaaS/SaaS</td>
<td>- different at each level</td>
<td>- local data optimisation</td>
<td>- granularity to enable movement</td>
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<td></td>
<td>- infrastructure</td>
<td>- reducing layering, but retaining isolation and abstraction</td>
<td>- lift/shift or refactor</td>
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<td>- platform</td>
<td>- distance/bandwidth</td>
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<td>- software</td>
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<tr>
<th><strong>Identity and access control</strong></th>
<th><strong>Portability</strong></th>
<th><strong>SaaS integration</strong></th>
<th><strong>Decentralization</strong></th>
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<td>- choosing/bridging domains</td>
<td>- cloud native principles</td>
<td>- cloud app connectivity</td>
<td>- federated management of runtimes and gateways</td>
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<tr>
<td>- private, partner, public</td>
<td>- orchestrated containerisation</td>
<td>- business data aware connectors</td>
<td>- simplifying cloud to ground hybrid solutions</td>
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<td>- the implicit assumption of public</td>
<td>- image based deploy</td>
<td>- out of the box integration patterns</td>
<td>- solutions spanning multiple clouds.</td>
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<td>- write once deploy to any cloud</td>
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<td>- Distributed deployment</td>
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<th><strong>Async. transport backbone</strong></th>
<th><strong>Monitoring and operations</strong></th>
<th><strong>???</strong></th>
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<td>- Legislative information domains</td>
<td>- messaging vs events</td>
<td>- viewing and diagnosing across boundaries</td>
<td>- ???</td>
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<td>- GDPR</td>
<td>- event or blog replication</td>
<td>- Collation/aggregation of logs across and end to end solution</td>
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<td>- Encryption</td>
<td>- when/where to aggregate</td>
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One Platform for Simple, Fast, and Secure Multicloud Integration
Multicloud & Agile Integration Architecture

1. Fine grained integration deployment
2. Decentralized integration deployment
3. Cloud native integration infrastructure
Modern Integration runtimes can be deployed as 12 Factor Applications:

- Containerized
- Stateless
- Horizontally scalable
- Pipeline deployed

Cloud Native Applications demand:

The Enterprise Service Bus evolves into Agile Integration Architecture

The fate of the ESB: Agile Integration Architecture

Centralized ESB

Integration as a microservice runtime

Containerization

Application autonomy

Cloud Native Integration

The same powerful features but managed as a micro-service.
Agile integration

Extended Connectivity

Collaboration across users

Flexible integration styles
Thank you
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