Agile Integration

The Three Pillars That Solve Your Integration Problems
In An Agile Way

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What to expect...

- Integration is getting harder. Why?
- The Agile Integration concept explained
- Red Hat Technologies for Agile Integration
- Reference Architecture
- Customer success stories
Everybody has an integration problem.

Or a problem with integration.
Understanding customers

Integrating digital and physical

NORDSTROM

Leveraging social media

Multichannel integration

SMACIT*

- Social
- Mobile
- Analytics
- Cloud
- API Economy
- Internet of Things
A Related Observation...

- Atomization of channels
  - E.g., Retail Sector, Banking Sector
- Impossible to control all
- Change of approach to channel management
- Better to *enable channels*

...in a *secure and controlled* way
Atomization of Channels: Increasing (Digital) Touchpoints

Trend to many more independently developed, siloed, customer-facing apps

43% have **10 or more** digital touchpoints

8% have **100 or more** digital touchpoints

The Red Hat Agile Integration Concept

Explained...
Agility

“The most critical business capability today”

Src: https://www.bcgperspectives.com/content/articles/it_strategy_it_transformation_it_enabled_business_agility/
Bring Agility Into Integration
Make your platform agile...not just your software

Leveraging methods and tools that allow **agile and effective integration** of services, apps, APIs and data is a foundation for **competitive advantage**
## Typical Business Objectives Enabled by Integration

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<th>Increase Internal Agility</th>
<th>Build consistent Omni-channel Experience</th>
<th>Leverage Existing Data/Services Better</th>
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<tr>
<td>Build Customer Or Partner Ecosystems</td>
<td>Integrate With Cloud Native/Mobile/IoT Apps</td>
<td>Enable SaaS Integrations Across Hybrid Environments</td>
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The Need for a Change in Integration Approaches

Demand for More Agility

Centralized Hub

Loosely Coupled

ESB

Policies, Analytics, and Ecosystems

Hybrid Platform

Microsoft

Google

Workday
The Agile Integration Concept by Red Hat

**DISTRIBUTED INTEGRATION**
- Lightweight
- Pattern based
- Event oriented
- Community sourced

**CONTAINERS**
- Cloud native solutions
- Lean artifacts, individually deployable
- Container based scaling and high availability

**APIs**
- Well defined, reusable, and well managed end-points
- Ecosystem leverage

**FLEXIBILITY**
**RE-USABILITY**
RED HAT JBOSS FUSE
RED HAT 3SCALE API MANAGEMENT

**SCALABILITY**
RED HAT OPENShift

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**RED HAT JBOSS BRMS**
**RED HAT JBOSS BPM SUITE**
**RED HAT JBOSS DATA GRID**
Red Hat Technologies for Agile Integration
Red Hat Technologies for Agile Integration

- DISTRIBUTED INTEGRATION
  - RED HAT® JBOSS® FUSE

- CONTAINERS
  - RED HAT® OPENSNET

- APIs
  - RED HAT® 3SCALE® API MANAGEMENT
Red Hat JBoss Fuse + AMQ

Distributed Integration Logic + Event-based Messaging for massive scale

- Lightweight Integration
- Reusable Pattern Toolkit
- Rich Transformation, Routing, Messaging

- Move away from the monolith
- Wrap & leverage legacy
- Create APIs
Fuse Variants

1. **Fuse Standalone** - based on EAP, including AMQ and CXF
2. **Fuse Integration Services** - Fuse optimized for OpenShift PaaS
3. **Fuse iPaaS** - Fuse cloud-hosted via OpenShift Online, including rich integration toolchain (targeting citizen-level integrators)
Red Hat OpenShift Container Platform
Container-based PaaS and DevOps

- Deploy & manage container apps
- Seamless across Hybrid Clouds
- Automated and scalable

- Shift to a containerized, DevOps deployment model
- Consistency across environments
- Key Microservices enabler
Red Hat 3scale API Management
API Security, Control and Visibility

API visibility & control enterprise wide

Security, rate limits, analytics, developer portal

Manage internal and external APIs

Transform internal IT into “API First” approach

Empower teams to deliver their own APIs

Provide global visibility and a uniform approach
Agile Integration
Reference Architecture
Déjà vu ?
Reference Architecture: Agile Integration

Core Principles:

- Microservice-based architecture
  (independently deployed in containers for scalability and DevOps)
- Three layers of abstraction
- Legacy integration
- Dump pipes -- smart endpoints
- Loose-coupling via API-based integration
- Stateless integration layer
- Leveraging API Management on various levels

Src: https://developers.redhat.com/blog/2017/08/02/organizing-microservices-modern-integration/
(1) Gateway Layer

Separation-of-Concerns !!
1. Access control
2. Transformation
(2) Composite Layer

Composition of microservices to provide business functions
⇒ Aggregations, splits, content transformation, event-based comms, caching, pattern-based integration, etc.
The microservices themselves
Organised into application domains (based on bounded context)
(3) Base Layer + Legacy Integration

Connect into the rest of the architecture where needed

Anti-corruption Layer
Legacy interface, transformations, “protection wall”
(Think Gartner’s Bi-Modal IT)
Customer Success Stories
Build consistent Omni-channel Experience

Increase Internal Agility

Leverage Existing Data/Services Better
Integrate SaaS Offerings Across Hybrid Environments

Build Customer Or Partner Ecosystems

Integrate With Cloud Native/Mobile/IoT Apps
Wrap-up
Take-aways

Everybody has an integration problem. Or a problem with integration.
Customer challenges and advancing IT requires more agile (distributed) integration approaches.
Three pillars make up the Red Hat Agile Integration concept.
The key technologies behind the concept are Red Hat JBoss Fuse, OpenShift Container Platform, and 3scale API Management.
Six typical key customer challenges can be addressed with Agile Integration.
More about Agile Integration: Whitepaper

DIGITAL INNOVATION THROUGH AGILE INTEGRATION
What is agile integration and why is it needed?

Reference Architecture
Agile Integration

Src: https://developers.redhat.com/blog/2017/07/27/reference-architecture-for-agile-integration/
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