Agile Integration for Today’s Cloud-Enabled Enterprise

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Organizations Expect To Improve Business Agility and IT Security

Top 5 Benefits of Public Cloud

- 43% Improve business agility
- 42% Improved IT security
- 41% Improve IT staff productivity and/or reduce size of staff
- 38% Reduce the total size of IT budget
- 36% Simplify and standardize IT infrastructure and applications platforms
“Cloud First” Is On the Rise
Cloud First mandates accelerate cloud adoption within an enterprise and across enterprises looking at what their peers are doing.

41% of enterprises with cloud experience have cloud first mandates.

Between 2016 and 2017, 63% of enterprises shifted from a Cloud Also posture to Cloud First.
Public Cloud Now Mainstream for New Initiatives

By the end of 2016, public cloud achieved mainstream status

**Use cases driving adoption include:**

- Re-platforming enterprise applications to SaaS
- New initiatives associated with digital transformation
- Greater efficiency and resilience for running mission critical bespoke applications
- Enterprise participation in the API economy, as developer networks on a PaaS are offered

**Mainstream**

<table>
<thead>
<tr>
<th>Year</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>49%</td>
<td>51%</td>
</tr>
<tr>
<td>2017</td>
<td>53%</td>
<td>47%</td>
</tr>
</tbody>
</table>
There Isn’t One Dominant Cloud

Most enterprises run SaaS applications across multiple Application Clouds

- Custom solutions are deployed on a different set of clouds
- There is little adoption overlap between Application Clouds and Bespoke Clouds
- The top vendor in each type of cloud is not the same vendor in any other type of cloud
- Each application cloud has an ecosystem of supporting applications running in their own clouds

### Customer Clouds
- Salesforce.com: 5,956
- Oracle: 2,029

### Financial Clouds
- SAP: 1,067
- Oracle: 328

### Human Capital Clouds
- ADP: 1,458
- Oracle: 756

### Custom Solution Clouds
- Amazon Web Services: 9,784
- Microsoft: 3,586
- IBM: 1,499
The Integration Imperative

Because there isn’t one dominant cloud, data and business logic must be shared and exchanged across clouds.

45% of enterprises haven’t adopted a public cloud yet, so hybrid integration platforms manage integration activities across locations.
Integration Architecture

Integration platforms manage all aspects of secure access to services across cloud.

Integration platforms manage all aspects of secure access to services across cloud. Configuration-based and visual development tools make it easier to develop, test and maintain lifecycle of integration microservices and APIs.
Where Organizations Are with Integration Platforms

40% OF RESPONDENTS USE APPLICATION INTEGRATION, DATA INTEGRATION OR API MANAGEMENT ON-PREMISES

30% HAVE ADOPTED AN IPAAS IN THE PUBLIC CLOUD
24% ADOPTED INTEGRATION PLATFORMS ON THEIR PRIVATE CLOUD

This reflects the need to integrate and connect applications where they are deployed and across deployments.
Planned New Cloud Spending

Organizations spread new cloud spending across all tiers of the cloud

32% of new spending will be for SaaS applications

25% will be for PaaS investments to build custom solutions, including development and PaaS supporting commercial service

27% will be spent hosting custom solutions and packaged applications on IaaS. 16% will be spent running custom solutions on a private PaaS.
Planned Spending for PaaS Apps

Developers use commercial PaaS software to build custom cloud solutions

$12B WAS SPENT IN 2016 ON PAAS DEVELOPER-CENTRIC PACKAGED SOFTWARE

Planned Spending for PaaS Applications

- **Packaged applications**: 57%
- **Custom application**: 43%

PaaS Packaged Application Categories

- **Integration & Connectivity**: 32%
- **DevOps-Related Tools**: 10%
- **Databases**: 36%
- **Application Platforms**: 22%
The Need to Integrate and Connect Apps Where They Are Deployed

Despite the rapid pace of public cloud adoption, 45% of survey respondents said they have no plans to move bespoke workloads to a public cloud.

45% of respondents work in organizations that run bespoke applications in a private cloud or are implementing within 12 months.

24% already run bespoke workloads in a public cloud. These same enterprises are also adopting cloud SaaS applications and building new applications in the cloud.
Cornerstones of Agility

As enterprises move forward on the dual track of increasing their ability to innovate, while also improving their efficiency, agility is an important characteristic that must be instilled in the organization—and in the technology upon which the organization relies.

Agility provides the means for an organization to move quickly, understand quickly, make changes easily, and keep options as open as possible to move flexibly.

Four critical technology cornerstones supporting agility are:

- Modular development: Microservices
- Deployment portability: Containers
- Standardization of service interfaces: APIs & API management
- Decentralized connectivity: Hybrid Integration
Microservices

A key piece of modular development is the use of microservices to create independently deployable services that provide a single function. These are composed into applications, with flexible use an important consideration.

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Currently implemented</td>
<td>53.6</td>
</tr>
<tr>
<td>Have plans to implement</td>
<td>29.0</td>
</tr>
<tr>
<td>Not an area of focus for our org</td>
<td>11.7</td>
</tr>
<tr>
<td>Don’t know / not my personal area</td>
<td>5.7</td>
</tr>
<tr>
<td>Unweighted Valid N</td>
<td>6,084</td>
</tr>
<tr>
<td><strong>100.0</strong></td>
<td></td>
</tr>
</tbody>
</table>

In 2017, **54%** of respondents experienced in cloud projects use microservices for custom application development. These will be increasingly deployed in containers.
Container Platforms

Container platforms virtualize applications, composite services and microservices to run atomically on bare metal and cloud architectures. Containers replace hypervisors, providing more efficient use of resources.

Key container use cases include to:

• Develop, re-platform and migrate custom applications,
• Develop locally and deploy where required
• Build integration microservices and co-locate with applications
• Create a private PaaS on top of existing infrastructure

In 2016, most enterprises deployed Docker containers, but hadn’t used the orchestration capabilities. By 2020, more than 50% of enterprise containers will be supported with commercial orchestration technology.
Container Adoption Small But Fast-Growing

At the end of 2016, only 7% of large enterprises had containers in production. By YE 2017, that number will reach 21%

Senior IT executives rated container technologies as above average importance or very important, but nearly an equal number were unfamiliar with container technology. As container technology is productized as container platforms and commercialized, IDC predicts a rapid rate of adoption.

<table>
<thead>
<tr>
<th>Container Technology</th>
<th>Important Rating</th>
<th>Unfamiliar Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Docker</td>
<td>40</td>
<td>-36</td>
</tr>
<tr>
<td>Docker Swarm</td>
<td>41</td>
<td>-38</td>
</tr>
<tr>
<td>Apache Mesos</td>
<td>42</td>
<td>-39</td>
</tr>
<tr>
<td>Kubernetes</td>
<td>35</td>
<td>-37</td>
</tr>
</tbody>
</table>
APIs and API Management

APIs are the interfaces that provide access to services

API management manages APIs, including a secure access gateway, a common catalog of services, access rights and service level policy configuration, and a developer portal.

53% of cloud adopters in the CloudView survey already use APIs and manage the API lifecycle.

API lifecycles are managed on an ad hoc basis, but as cloud adoption becomes more mature, API lifecycles are more likely to be managed.

58% of respondents that have broadly implemented and manage a Cloud First strategy also manage API lifecycles; 31% are planning to implement.

Adopted REST APIs with Full Lifecycle Capabilities

<table>
<thead>
<tr>
<th>Category</th>
<th>Currently implemented</th>
<th>Have plans to implement</th>
<th>Not an area of focus for our organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ad hoc</td>
<td>49%</td>
<td>37%</td>
<td>20%</td>
</tr>
<tr>
<td>Opportunistic</td>
<td>36%</td>
<td>43%</td>
<td>19%</td>
</tr>
<tr>
<td>Managed</td>
<td>45%</td>
<td>45%</td>
<td>1%</td>
</tr>
<tr>
<td>Repeatable</td>
<td>43%</td>
<td>58%</td>
<td>31%</td>
</tr>
<tr>
<td>Optimized</td>
<td>31%</td>
<td>41%</td>
<td>43%</td>
</tr>
<tr>
<td>Too soon</td>
<td>23%</td>
<td>4%</td>
<td>49%</td>
</tr>
</tbody>
</table>
Hybrid Integration: Key to Agility
Integration is pervasive and should be decentralized

Integration software combines API management, integration, messaging, integration management, and a developer studio as a single product or integrated suite of products.

When this combination of software components can be deployed in different locations and communicate across locations and share common assets, these integration solutions are called “hybrid.”

With the location diversity represented by the CloudView-survey responses in this InfoBrief, hybrid integration is required for agility.
Take These Steps:

**Hybrid Integration Business Plan**
- Hybrid integration product strategy
- Benefits
- Costs
- **NOW**

**Develop Methodology & Best Practices**
- Developer Teams
- IT Operations
- Business Sponsors
- **+6 MONTHS**

**Establish Common Catalog**
- Services
- Data
- Roles
- Rights
- **+9-12 MONTHS**

**Refactor/Replace**
- Adjust existing integration tools to support central needs
- Replace non-conforming tools
- **+12 MONTHS**
How Red Hat Stacks Up

Red Hat received high recommendation scores from IT and business senior management, as well as from non-management. Red Hat OpenShift is a container platform offered across multiple clouds and in a traditional datacenter. Red Hat’s integration portfolio is implemented on top of its container platform, offering the same portability benefits.

How Likely Are You to Recommend to Colleagues and Business Acquaintances

<table>
<thead>
<tr>
<th>Company</th>
<th>Top IT</th>
<th>Top Business</th>
<th>IT Non-Mgmt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red Hat</td>
<td>63%</td>
<td>54%</td>
<td>91%</td>
</tr>
<tr>
<td>IBM</td>
<td>61%</td>
<td>31%</td>
<td>71%</td>
</tr>
<tr>
<td>Amazon</td>
<td>51%</td>
<td>45%</td>
<td>61%</td>
</tr>
<tr>
<td>Microsoft</td>
<td>52%</td>
<td>28%</td>
<td>64%</td>
</tr>
<tr>
<td>Oracle</td>
<td>62%</td>
<td>48%</td>
<td>29%</td>
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