PIQUE SOLUTIONS

Oracle Integration Cloud Service vs. MuleSoft CloudHub

Customer Perspectives on Simplifying Application Integration

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Contents

Executive Summary

Enterprises everywhere add services for customers and extend their businesses by integrating legacy on-premises applications with cloud-based applications and services. For example, a human resources department improves its recruiting and hiring process by connecting its human resources management system to cloud-based services such as Taleo and LinkedIn. Another common scenario ties together different systems in various locations to a central cloud-based application. These organizations see the need to connect their business by integrating new modern cloud applications with other cloud services or with existing on-premises applications and systems. The right integration solution can ease the process of modernizing a business into a digitally connected business.

Pique Solutions researched and evaluated two leading enterprise application integration cloud offerings—Oracle Integration Cloud Service (Oracle ICS) and MuleSoft CloudHub—to understand the differences in cost of ownership involving both initial-solution costs and longer-term operational costs. The study undertook a cost comparison and activity-based data collection from development managers, IT managers, and directors experienced in buying, implementing, and managing cloud integration platforms.

Based on data collected from customers, the absolute benefits of a business-friendly solution such as Oracle ICS compared to a technically-oriented approach such as CloudHub include lower cost, more agility, and less complexity.

Figure 1. Three-Year Cost Comparison of Oracle ICS and MuleSoft CloudHub
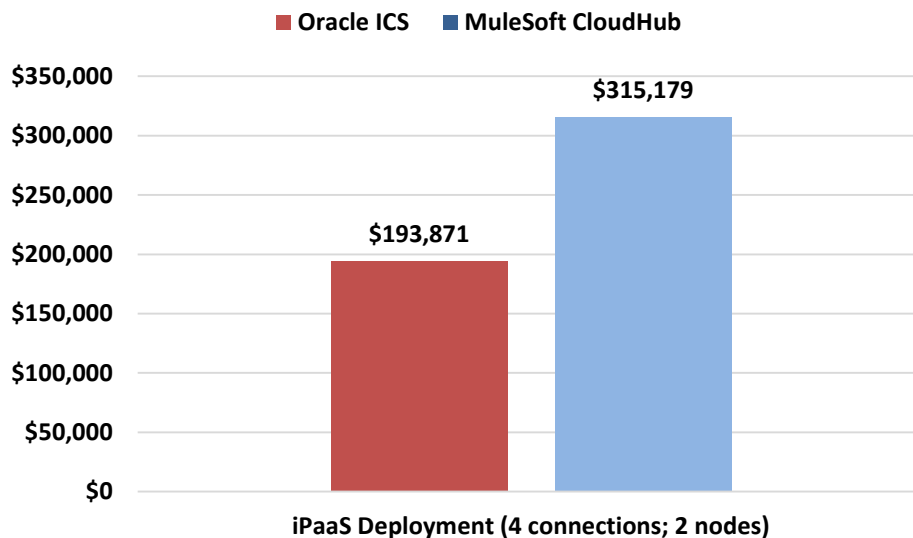
Figure 1 summarizes the following study results:

- ⊕ **Cost:** In a common deployment scenario of four integration connections described by customers in the study, *Oracle ICS is 39% less costly than MuleSoft CloudHub over three years* due to lower costs in each of the four categories investigated—subscription cost, setup, development, and management.

- ⊕ **Agility:** Companies participating in our research cited integration project cycle time as critical to achieving business objectives*, requiring different approaches to connect* legacy systems, public and private cloud applications, the Industrial Internet, mobile apps, and the Internet of Things (IoT). ICS was found to be significantly more agile than CloudHub, particularly in deployment scenarios with low to moderate complexity primarily due to the focus on business users and the removal of the need for business-to-IT requirements gathering and collaboration.

⊕ **Complexity:** Based on the feedback from customers, *ICS is simpler to use and requires little technical expertise, while CloudHub needs extensive coding*. On a complexity rating scale of 1 to 5, with 1 equal to low complexity and 5 equal to high, ICS participants' ratings across all activities was only 1.5 whereas CloudHub rated a full point higher at 2.5.

Because developers could be contractors and leave after integration starts, the integration code could be difficult to understand and maintain, leaving a fragile and error-prone integration. However, Oracle customers state they are provided with simplified cloud, mobile, on-premises, and IoT integration capabilities, all within a single platform. This decreases time-to-integration, improves productivity, lowers TCO, and provides additional tactical and strategic benefits presented in this whitepaper.

"Oracle ICS has a high wow factor – it was much easier to use and implement than we expected."

Principal

Technology Services Provider

Based on the study results and what customers told us, *ICS is more cost effective and less risky than CloudHub for many business users.* This is because of the ease of integration using ICS without maintaining custom coding. Using CloudHub requires more technical development.

Introduction

Driven by digital business and the proliferation of mobile computing devices, the continuing deployment of cloud-based applications can speed time-to-market, lower TCO, and support real-time digital business requirements. But implementers face a pressing need to support *cloud and mobile ecosystems and the emerging IoT* with lean, lightweight, and easy-to-use integration services. Integration services such as Oracle ICS provide what is needed for business users to connect their systems without deep technical know-how.

> "Our clients are asking for business friendly integrations that don't need a tech engineer."
>
> **Senior Integration Specialist**
>
> European Government Services

As enterprises seek to connect to accelerate business innovation and keep up with competition, *simplicity and agility in IT are essential*. A unified and comprehensive solution for application integration is critical for enterprises undergoing transformation to digital business. The change agents operate on a web of digital connectivity. Major trends in cloud services, mobile computing, Big Data, advanced analytics, and IoT connectivity provide more opportunities for enterprises to engage their employees, partners, suppliers and customers. Better services to all constituents are possible when enterprises use the right data, in the right place, at the right time—wherever it resides. But integration using traditional tools usually involves laborious coding, configuration, testing, and deployment. The result can be slower project implementation and difficulty changing course.

What is needed is a simplified application integration environment with these benefits:

- ⊕ Faster time-to-market for integrations means more revenues.
- ⊕ Lower TCO results in higher profits.
- ⊕ Low ratio of services expenses to subscription fees means few hidden costs.
- ⊕ Faster integration for digital business leads to improved competitive position.
- ⊕ Flexible integration means being more agile to business shifts.

While Oracle ICS and MuleSoft CloudHub do not completely overlap technically, many enterprises are deciding between the more traditional custom-code approach of a toolset such as CloudHub and a *business-focused* solution such as ICS. ICS offers a high-productivity approach with prebuilt integration and intuitive visual designer. By contrast, CloudHub requires deep technical expertise and more hand coding. Note that use cases from interviews conducted for this study reflect those covered by both ICS and CloudHub.

Study Approach

Pique Solutions' approach to cost of ownership highlights major cost areas, focusing on the substantive differences among cloud integration platforms. For cost-of-ownership comparisons, Pique uses a proven framework based on many studies in this field. The framework includes key cost categories that are relevant over the life cycle of an application platform deployment that should be considered by application development and operations teams, IT managers, and executives.

Methodology

The primary research phase consisted of an in-depth data collection and multiphase interview process. Pique identified and qualified ten customers and partners involved in implementations inside medium and large organizations. These experts provided detailed primary research and data.

The research process involved an initial screening to find out the interviewees' usage of the relevant Oracle and MuleSoft products as well as their ability to answer cost and business value questions. For companies that passed the screening, we conducted telephone interviews to capture the nature and size of the deployments, the number and types of integrations, solution costs, and the sizes of the development and administration staffs. The interviews also delved into how integration addresses specific business issues and connected applications, product and support experiences, and other business and technical benefits.

The roles of the interviewees included integration architects, Service Oriented Architecture (SOA) and Enterprise Service Bus (ESB) developers, and service provider managers. The companies interviewed represented integration projects in a wide range of industries, including business services, higher education, packaged foods production, pharmaceutical, retail home decor, and government. Interviews also spanned the globe, including North America, Latin America, and Europe.

Besides participating in the interviews, each respondent answered a detailed data-collection instrument, which contained 40 unique, quantitative data elements along with a provision for qualitative descriptions of the responses. Pique also reviewed publicly available information and secondary research about Oracle ICS and MuleSoft CloudHub, use cases, and key value drivers.

To establish a cost-comparison framework requires a reasonable deployment scenario to use in the context of both solutions and also that can be based on published pricing in the case of service subscription fees. Based on the median deployment from our research, the integration scenario is based on a deployment of four unique connections to on-premises and cloud-based applications and a two-node deployment. One node is for staging and testing and one is for production. From a project staffing perspective, the number of FTE developers for this deployment is 2.75. Again, this is based on the most common staffing profile from the study participants.

Pique developed the cost/value model based on the customer data for the primary research as well as publicly available secondary research. Lastly, we crafted this whitepaper to present the research findings.

For subscription costs, Pique calculated the total three-year subscription cost using the published monthly subscription pricing on each vendor's website. For setup costs, development cost in the first year, and management cost, we used average developer salary and compensation information and applied it to the average effort data.

Research Participants

Some of the research participants have experience with either ICS or CloudHub, while others have experience with both. The participants indicated a variety of types and scopes of deployments, as shown in **Table 1**.

Table 1. Study Research Participants			
Role	**Industry**	**Represented Deployment**	**ICS, CloudHub, or Both**
Lead Developer	Large U.S. Hosting Services Provider	Integrate silos for single customer data repository	CloudHub
Integration Developer – Service Provider	Large Global Pharmaceutical Company	CRM on premises to HR in the cloud	CloudHub
Integration Developer	Small U.S.-Based Retail and Online Home Decor Company	ERP on premises to e-commerce on cloud	CloudHub
ESB Developer/Architect	Large U.S. Higher Education Institution	Campuses to central office	CloudHub
Enterprise Solutions Architect	Various	Cloud to cloud, on premises to cloud	CloudHub
Enterprise Integration Architect	U.S.-Based Packaged Foods Manufacturer	Connect on premises to partner systems	ICS
Principal – Technology Services Provider	Various	Cloud to cloud	ICS
Senior Integration Specialist	European Government Services	Inter-government integration	ICS
SOA Architect	Latin American Companies	HR on premises to talent management in the cloud	Both
Principal Architect for Global Service Provider	Large Global Enterprises	On premises ERP systems to cloud and mobile	Both

A Framework for iPaaS Cost of Ownership

The Pique Solutions framework for evaluating cloud integration platforms and application integration complexity uses the main functions and activities involved in an application integration implementation:

- ⊕ **Subscription Cost:** The initial and ongoing cost to acquire and use the solution.
- ⊕ **Setup:** Installation and configuration of the integration platform as a service (iPaaS) and adapters.
- ⊕ **Development:** The effort to develop new adapters and integrations, stage and deploy, and change endpoints.
- ⊕ **Management:** The work to set up a common management environment and/or tools and manage integrations and performance.

Cloud Integration Adoption Life Cycle

There are many activities for which we collected quantitative data from study participants to determine if activities were performed by the platform provider or the customer staff. We also evaluated the frequency, level of effort, skill level required, and tools used to complete each task.

1. Learn the products.
2. Set up initial iPaaS.
3. Provision initial iPaaS.
4. Set up and configuring adapters.
5. Develop new adapters.
6. Develop integration.
7. Stage integration.
8. Deploy integration.
9. Change endpoints.
10. Setup and configure management console.
11. Manage integration.
12. Monitor business activity.
13. Monitor and manage performance.
14. Maintain service-level agreements.

If the deployment involves a move from on-premises to cloud, add the following:

- ⊕ Move integration code to cloud.
- ⊕ Replicate data to cloud.

The framework includes two parameters for complexity:

- ⊕ Number of products and level of integration.
- ⊕ The time and effort involved in application integration activities.

Each activity receives a rating of activity complexity and skill level required, rated on a scale of Low, Medium, and High and normalized to a 5-point complexity score in which Low equals 1, Medium equals 3, and High equals 5.

Study Results

General Analysis

The study uncovered some interesting information and perspectives from people with hands-on integration experience using either ICS, CloudHub, or both. Pique explored many aspects of each solution as currently deployed. This research finds that there are certain advantages to using ICS to:

⊕ Connect on-premises applications to cloud applications.

⊕ Connect cloud applications to each other.

Advantages are in several areas, but core to all reasons is *simplicity*. CloudHub requires hand coding and additional technical expertise that ICS does not seem to need based on interviews conducted with users. Whereas some developers prefer the ability to get under the hood and tweak the engine, most businesses need to get the car driving immediately. But simplicity doesn't mean a lack of capability. Instead, those interviewed about ICS told us that much is already packed into the offering and Oracle is constantly adding more features in response to customer and industry ideas. For example, one large integrator foresees using ICS for connecting very large systems running applications such as SAP, Oracle, and JD Edwards to mobile apps. In another scenario, the integration involves centralizing the data from disparate government districts into one datacenter.

> "CloudHub's Swiss Army knife approach means you need the right skills on the team, especially Java."
>
> **ESB Developer/Architect**
>
> U.S. Higher Education Institution

Those interviewed also cited that Oracle strongly backs ICS, with especially easy implementation for existing Oracle clients because of common interfaces and automatic discovery of Oracle applications. Developers told us that MuleSoft's long market presence and experience was a factor in its selection but, for enterprise scalability and long-term accountability, the customers who have experience with both services consistently said that ICS is superior to CloudHub in these regards. Service providers who had experience with both vendors also clearly favored Oracle as a partner, believing they could deliver higher levels of satisfaction using ICS. MuleSoft appears to drive most decisions around its solutions and directions toward technical audience, with fewer features that serve non-technical business users.

A Composite Integration Scenario

Based on the composite integration scenario, Pique modeled the three-year cost across the categories of subscription cost, setup, development, and management. The study shows that CloudHub costs more than ICS across all these categories. The results of the cost-of-ownership analysis are shown in **Figure 2**.

Figure 2. Three-Year Cost of Ownership by Category
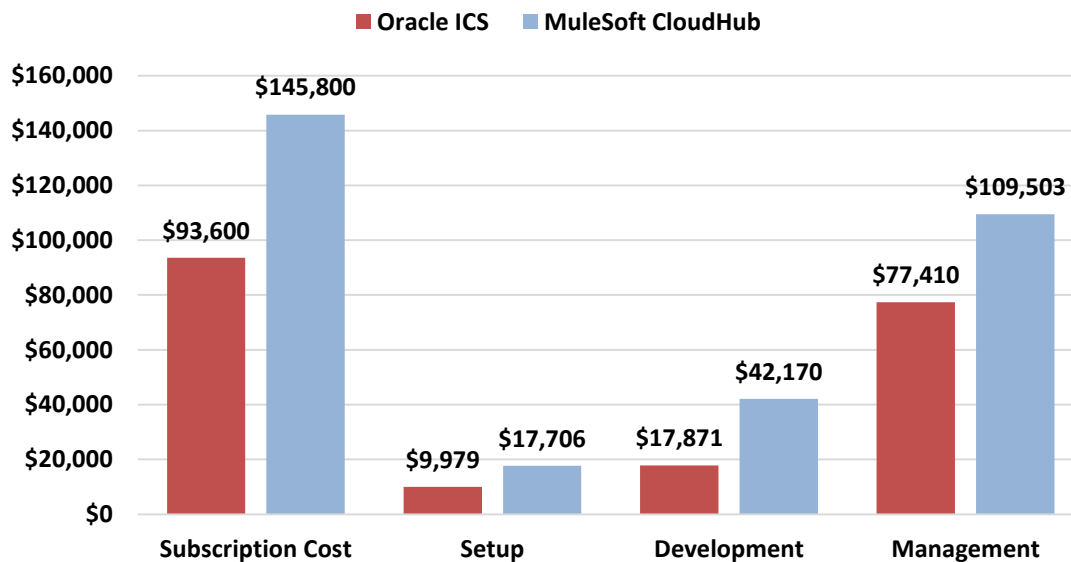
Subscription Cost: ICS Is 36% Less Costly than CloudHub over Three Years

Based on the common deployment scenario, we compared subscription pricing for:

⊕ Oracle Integration Cloud Service for a non-metered hosted connection with a total of four connections.

⊕ MuleSoft CloudHub Professional Edition, which is configured with two vCores (known generically as nodes).

The totals were $93,600 for ICS and $145,800 for CloudHub, with a substantially lower cost of 36% over three years for ICS. One integration architect we interviewed pointed out that the predictability of Oracle's ICS subscription fee model is appreciated. Two CloudHub customers, the lead architect of a large integrator and the integration consultant of the home decor company, thought there were too many unexpected costs in their CloudHub deployments.

Setup: ICS Is 44% Less Costly than CloudHub

The setup phase involved three activities:

1. Initial iPaaS setup.
2. Initial iPaaS provisioning.
3. Adapter setup and configuration.

Customers said the iPaaS setup and provisioning for ICS was very streamlined, requiring less than a day of effort, whereas companies using CloudHub experienced several days to a week to complete the setup. Lastly, setup and configuration of integration adapters was found easier and requiring less effort in ICS.

For the scenario with four unique connections to on-premises and cloud-based applications and a two-node deployment, the totals were $9,979 for ICS and $17,706 for CloudHub, with a substantially lower cost for ICS of 44% as compared to CloudHub. The average complexity for ICS across the setup activities was 1.1 versus a complexity score of 2.2 for CloudHub. The initial iPaaS setup had the highest average complexity rating for CloudHub, with an average score of 2.5.

Customer survey results told us that Oracle ICS is easier to set up than MuleSoft CloudHub. In addition to the data collected, CloudHub and ICS users reported rapid setup – with nothing to install for cloud-to-cloud integrations – just establishing the connections. Hybrid integrations involving cloud-to-on-premises connections require additional setup and configuration steps in CloudHub for a virtual private network via a virtual private cloud. Meanwhile, the Agent feature within ICS eliminates common security and complexity issues previously associated with integrating on-premises applications from outside the firewall.

> "Oracle ICS can also be great for small and middle size companies because of the low startup costs."
>
> **Senior Integration Specialist**
>
> European Government Services

Oracle clients very much appreciate the automatic discovery of existing Oracle SaaS applications by ICS. The straightforward user interface is easy to learn, so training is short. Plus, Oracle's track record in connecting the silos that are typical in enterprises, using integration and SOA, gives its customers a high level of confidence.

That said, CloudHub developers like the Event Driven Architecture that provides the ability to change configurations at a granular level so it does exactly what they want. One CloudHub developer said the project requirements for integrating custom systems with a Salesforce backend across multiple locations were so unique that he needed that granularity.

Development: ICS Is 63% Less Costly than CloudHub

The development category involved four activities:

1. Develop integrations.
2. Develop new adapters.
3. Stage integrations, or move integrations from development to testing or other preproduction environments.
4. Deploy integrations.

Our research shows that the most significant difference for customers was in terms of effort and complexity for developing integrations. Integration complexity varies between deployments, so developers like the granularity and extensibility of CloudHub. But customers told us that developing integrations using MuleSoft tools is difficult without the proper training and coding expertise. Business users, on the other hand, prefer the simplicity of ICS. They found that developing basic integrations was in the range of a few days to two weeks, whereas their CloudHub counterparts measured their integration efforts in terms of weeks to months.

Moving from development to testing in ICS only requires a change in configuration and then the import of that configuration. REST APIs in ICS also help automate deployments with flexibility. Existing Oracle customers reported recognizing the common concepts between ICS and Oracle on-premises solutions, such as how SSL connectivity works. Using ICS, projects are completed in a few weeks or less.

> "Speed-to-market, simplicity, and lower cost are the main benefits of ICS."
>
> **Principal Architect**
>
> Global Service Provider

Because CloudHub requires coding, its implementations can be slower to deploy than ICS. But most found CloudHub deployment speeds adequate and appreciated access to source code. Also, CloudHub developers told us they need Java, RAML, and XML programming experience, which is a

disadvantage for businesses lacking the needed technical expertise. As a result, many CloudHub implementations engage outside consulting services to cover that gap even though that means higher risk when developers exit or systems change. By contrast, ICS is geared to business users, and one integration specialist told us he just needs a short introduction to the user interface and has only needed technical assistance once or twice.

Interviewees also reported difficulty in finding experienced CloudHub developers, so organizations were forced to wait for trained resources or repurpose other resources to learn the product. The skills shortage leads to slower project completion.

The total development costs were $17,871 for ICS and $42,170 for CloudHub, with a substantially lower cost for ICS of 63% as compared to CloudHub. The average complexity for ICS across the development activities was 2.2 versus a complexity score of 2.9 for CloudHub. Developing new adapters was by far deemed the most complex activity for both ICS and CloudHub customers, with average ratings of 3.7 and 5, respectively. Developing integrations and moving them to test or other preproduction environments and eventually deploying integrations in production was found far less complex in ICS environments than in CloudHub. The average rating for ICS customers for these three activities was 1.4 compared to a rating of 2.7 for CloudHub.

Management: ICS Is 29% Less Costly than CloudHub over Three Years

The management category involved a number of initial and on-going administrative activities:

1. Setup and configuration of management environment and/or related tools.
2. Change endpoints.
3. Manage integrations.
4. Monitor and manage performance.
5. Maintain service-level agreements.

For ICS there was no effort required in setup or configuration of management consoles whereas there was some effort with CloudHub. The most significant difference is the effort and complexity for managing integrations. ICS customers found that managing integrations was roughly four hours per week, whereas their CloudHub counterparts measured their efforts roughly six hours per week on average (i.e., 50% more effort).

> "In my experience, MuleSoft support is showing growing pains, and Oracle support is better."
>
> **Principal Architect**
>
> Global Service Provider

For monitoring, users consider both solutions adequate. Monitoring and managing performance was also found far less complex in ICS environments versus CloudHub. The average rating for ICS customers for these two activities was 1.0 compared to a rating of 2.0 for CloudHub. But there are differences in the solutions between monitoring and managing performance. The effort for monitoring performance was roughly the same for ICS and CloudHub. Managing performance, however, was easier with ICS, with participants spending roughly 25% less time and effort on a monthly basis versus their CloudHub counterparts. An area of difference we heard about from both CloudHub and ICS system integrators is the visibility of log files for error correction. While responsive Oracle support services back ICS, CloudHub customers told us that they can see what is going wrong and can try to fix it themselves. But with CloudHub running on Amazon Web Services, it can sometimes take more time to resolve issues found in monitoring. Also, MuleSoft relies on partners for visualization and analytics while Oracle does not.

On the other hand, ICS users appreciate that it requires minimal administration. Because it is cloud-based, most maintenance issues are handled by Oracle. Oracle cloud services result in higher availability, with the comfort of being managed around-the-clock by Oracle.

The most significant maintenance issue for CloudHub developers is the frequency of releases. While MuleSoft aggressively adds new features, developers told us that releases are sometimes "buggy". MuleSoft customers reported falling behind on implementing the new releases because of the effort involved; then they reach a deadline when they must upgrade to support their implementation. This requires extensive work to catch up to the current release.

In addition, customers indicated that MuleSoft places priority on some connectors over others, meaning some become outdated. MuleSoft-supported connectors are listed on its Connector Exchange. There are several levels of connectors—depending on how hands-on MuleSoft is with each connector. Most connectors are "community" connectors maintained by the community (or by third-party companies sponsored by MuleSoft). The community connectors' source code is available for download from GitHub and is only sporadically maintained.

The totals for management were $77,410 for ICS and $109,543 for CloudHub, with a substantially lower cost for ICS of 29% over three years as compared to CloudHub. The average complexity for ICS across the management activities was 1.1 versus a complexity score of 1.8 for CloudHub. Managing integrations was an area of significant complexity difference between ICS and CloudHub with ratings of 1.5 and 2.3, respectively.

Oracle has a single level of enterprise support, and its ICS customers told us they received fast turnaround on issues, getting answers within hours. MuleSoft, by contrast, offers multiple support levels. CloudHub customers reported adequate support, but those having experience with both companies thought Oracle support was superior in terms of meeting service-level agreements (SLAs) and quickly resolving issues.

> "ICS is the way to go when an enterprise can't or doesn't want to actively manage the infrastructure."
>
> **Senior Integration Specialist**
> Global Service Provider

Several study participants commented on the security of the two solutions. ICS uses design-time and runtime security to ensure that only authorized users can access the web console at design time or invoke ICS integrations at runtime. Plus, all Oracle Cloud services provide a highly secure environment for physical security, operating system and virtualization layer security, and tenant isolation. Oracle Cloud also enforces strong password policies, including a minimum password length and password complexity, challenge questions, and regular password changes. Lastly, ICS integrations can work with services protected by security policies such as HTTP Basic or WS-Security–based authentication. Users also told us they don't have to understand the complexities and nuances of the security configuration for ICS to use them.

By contrast, some CloudHub developers have concerns about security. According to those developers we interviewed, MuleSoft is abstracting security away by using high-level policies outside the application. An integration consultant for a home decor company connecting multiple systems for real-time pricing information for order management told us that he found vulnerabilities in CloudHub security, with changing encryption certificates. He also said that two-way SSL is not supported by MuleSoft, which was problematic to their deployment. One integrator on a project for a global pharmaceutical company connecting and syncing Marketo to Salesforce and NetSuite CRM for mass notifications reported CloudHub requiring unanticipated effort to set up the virtual private network connection.

Finally, several interviewees using CloudHub painted a common scenario of contractors building integrations and then a new group of contractors maintaining them, which is doubly problematic given the difficulty in finding CloudHub expertise.

Conclusions and Key Takeaways

Effective application integration between on-premises and the cloud is essential for enabling digital business. The complexities in connecting legacy applications with the cloud, mobile apps, and the emerging IoT are daunting, yet many enterprises cannot afford lengthy modernization or custom integration projects. As time-to-market has become one of the key factors in competitive advantage, companies are pressured to continually increase speed and agility.

iPaaS solutions provide an easier path to connecting applications so that enterprises can embrace digital business. They deliver fast integrations and compelling TCO with easier learning, setup, development, and maintenance.

Based on our multiphase interviews with customers, integration consultants, and developers with experience with Oracle ICS and MuleSoft CloudHub, the key takeaways in comparing the two cloud-based integration solutions are as follows:

- ⊕ **Lower Cost:** Oracle ICS is less costly than MuleSoft CloudHub over three years because of lower costs of subscription, setup, development, and management.
- ⊕ **Better Agility:** Oracle ICS supports agility better than MuleSoft CloudHub with faster deployment, more adaptive to change, and more flexible pricing.
- ⊕ **Less Complexity:** Oracle ICS is simpler to use and requires little technical expertise, whereas MuleSoft CloudHub is relatively more complex and needs extensive coding.

Options for cloud integration services share some common features and approaches, but there are significant differences among them. Those differences are not only related to subscription costs, but also to the expectation of the technical abilities of the users of these solutions.

Based on our research and analysis, Oracle ICS is a simpler to use solution and offers significantly higher business agility and cost advantages as compared to MuleSoft CloudHub. At a high level, the choice is between a business-friendly solution and a technically-oriented toolset. The result of this study shows that for every main comparison area, ICS leads CloudHub, with a lower TCO:

> "We're looking at using ICS to get into self-service integration where typically our development team has been doing the work. We're trying to set that up such that it's so simple the business can do it"
>
> **Enterprise Integration Architect**
>
> U.S.-Based Foods Manufacturer

- ⊕ **For the common integration scenario measured—Oracle ICS overall cost over three years is 39% lower than CloudHub.** The key factors are lower subscription fees, easier learning and setup, much less time in development activities, and simpler management. The differences break out as follows:

  - ▪ **Subscription:** 36% lower cost for Oracle ICS.

  - ▪ **Setup:** 44% lower cost for Oracle ICS.

  - ▪ **Development:** 63% lower cost for Oracle ICS.

  - ▪ **Management:** 29% lower cost for Oracle ICS.

- ⊕ **Customers prefer simplicity when working to enable digital business on the cloud.** Many businesses prefer to tackle integration without highly technical development. They want integration solutions that their business people can understand, implement, and use. These customers found that Oracle ICS makes it not only easier with its business-focused tooling but also offers lower barriers to entry. In general, ICS is a more attractive alternative to technically-oriented solutions such as MuleSoft CloudHub for many implementations.

⊕ **Oracle offers a more stable solution with superior support.** MuleSoft's growth combined with focus on adding features means releases have problems. Developers told us that the releases are frequent and "buggy". Also, some CloudHub connectors are not updated as needed, leaving developers to fend for themselves. In contrast, Oracle ICS customers didn't report any significant problems with new releases and praised Oracle's support and overall responsiveness.

Those seeking to integrate cloud-based applications with each other or with on-premises applications should consider the differences of the business user friendly approach of Oracle ICS compared with the technically-oriented approach of MuleSoft CloudHub. While direct-coding solutions might give granular capabilities, they come at a cost. Customers found that not only are costs lower for implementations using ICS but also that the solution enables faster time-to-market and easier maintenance over time.

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