Hybrid: The Next Generation Cloud
Interviews Among CIOs of the Fortune 1000 and Inc. 5000

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EXECUTIVE SUMMARY: Hybrid – The Next Generation Cloud

Most Chief Information & Technology Officers interviewed for this report have joined the cloud revolution – and they're not looking back. They are adopting new cloud technologies, overcoming obstacles, and seeing the benefits. As one CIO put it, right now, cloud technology gives us a competitive advantage, but in three to five years it will be a "table starter" – meaning, it will be the minimum required just to get in the game.

Compared to conventional cloud solutions, the hybrid cloud approach promises even greater benefits by reducing costs and increasing flexibility – a winning combination in any business environment. Perhaps this explains why, among the cloud users interviewed, most have also adopted hybrid tools. The hybrid approach is viewed as an agile business application – but one that is still evolving. Says the CIO of a Fortune 1000 information technology company when asked about the importance of hybrid cloud tools, "at the end of the day, I just need flexibility."

"I really view it as a new way of doing business. It's a paradigm shift." CIO, Fortune 1000

"I think it's gotten to the point now that it's real." CIO, Fortune 1000

"When everyone does what they say, it makes it go smoothly, in terms of external delivery, holding dates, and having things ready to go." CIO, Fortune 1000

This research supports a range of benefits that CIOs have experienced from the hybrid cloud.

- **Hybrid solutions simplify IT processes.** Among hybrid users, 75% feel IT processes are **less** complex after migrating to hybrid cloud services.
- **Even non-hybrid users appreciate the advantages of the hybrid cloud.** Among non-hybrid users, 50% feel cloud and hybrid cloud solutions are better suited than on-premise solutions for their business needs.

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- **When done correctly, hybrid cloud applications answer this need for flexibility with a seamless combination of on-premise and cloud resources.** Sounds good, but like a winning doubles tennis team, hybrid cloud computing requires skill, strategy, and most of all – constant communication. **CIOs readily admit when the team breaks down, the game is lost.**

As they move to combine platforms, CIOs are working hard to reconcile the advantages of cloud offerings with their concerns. **While each company's hybrid story is as unique as the goals of their organization, most CIOs interviewed feel migrating services to a hybrid cloud increases security risks.**

"Each cloud provider is different. That said, I'll always believe I can provide greater security myself." CIO, Inc. 5000

While hybrid cloud computing holds benefits for enterprises**, this study uncovers what many CIOs feel are the primary barriers to adoption.**

- **Institutional barriers are prominent.** 75% of non-hybrid cloud CIOs feel there is resistance within their companies to implementing hybrid cloud services.
- **Security continues to be an issue.** Security is the top concern among companies which have **not** implemented hybrid cloud solutions.
- **On-premise solutions are still believed to be more secure than hybrid solutions.** Most CIOs (52%) feel on-premise products remain **more** secure than cloud-based.

Looking to the future, CIOs expect the quality and variety of hybrid cloud offerings to trend upward. As with any technology, hybrid cloud computing continues to change. Even the definition can vary, depending on who you talk to. For this report, we define hybrid cloud resources as those hosted both on-premise and externally on the cloud. The survey explored which cloud tools companies are currently using, why hybrid cloud solutions are gaining momentum, and why some CIOs are still reluctant to deploy hybrid tools.

"When you go between multiple locations it is very difficult to properly plan and design. That's the trickiest part." CIO, Inc. 5000

Methodology

In April 2013, Wakefield Research carried out a survey of 52 CIOs using in-depth telephone interviews to explore attitudes about the hybrid cloud. Among the 52 CIOs, 22 respondents were from Fortune 1000 companies, and 30 respondents were from companies in the Inc. 5000 Fastest Growing Companies in America.

Business Velocity: A Mix of the Right Technologies
Survey: Majority of CIOs on the Cloud

"When you need to expand a service quickly, we say let's put them in a cloud location." CIO, Inc. 5000

For several years the cloud has been the darling of the tech industry. But cloud computing isn't hype – it's a reality. **A majority of CIOs interviewed (81%) are solidly invested in cloud solutions.** Most take a mix-and-match approach to the cloud: a balance between on-premise and cloud solutions is valued by many organizations. 87% of CIOs feel that cloud solutions are important to their business. Nearly as many CIOs (83%) assign similar importance to on-premise solutions – a finding that suggests a bright future for hybrid cloud technologies.

CIOs that use the cloud say the most utilized cloud application is customer relationship management (76%), followed by sales and marketing processes (60%), employee or client

Top Cloud Services
(Among Cloud Users)

CRM	Sales & Marketing	Employee/Client Communication	Human Resources
76%	60%	57%	55%

communication (57%), and human resources (55%).

Among CIOs using cloud applications, most (67%) have already adopted some hybrid tools. **CIOs expect the shift to a hybrid cloud configuration to accelerate as more applications become available to meet their needs.**

Mobile hybrid tools, in particular, are gaining steam. CIOs report the hybrid approach allows employees who work off-site to access data, a solution suited to outside sales and other remote workers. Employees who are on the road or work from home can benefit the most. Hybrid tools help track billable hours and speed up day-to-day processes.

"It's easier for remote workers to access the data from the cloud. They're able to use their own equipment. That's a huge benefit right there." CIO, Fortune 1000

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This helps explain why **CIOs that use the cloud report that data management (29%) and sales and marketing (29%) are the resources most often hosted in a hybrid configuration,** followed by project management (26%) and human resources (24%).
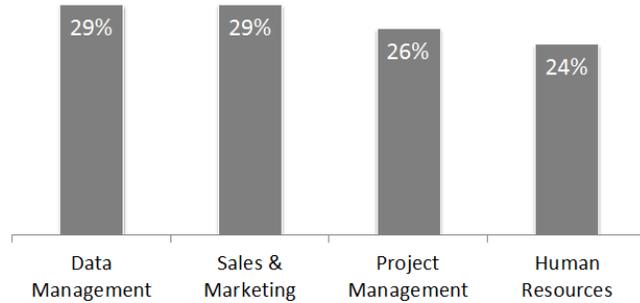
Working with a hybrid cloud vendor gives companies capacity exactly when and where they need it – as long as the vendor follows through on the services promised. Otherwise, it can be a disaster. "When we started we tried to cover every point, but we missed a lot of things," says a CIO, when asked about integrating hybrid solutions. The flawed planning led to missed deadlines at his Fortune 1000 company.

Top *Hybrid* Cloud Services
(Among Cloud Users)

Data Management	Sales & Marketing	Project Management	Human Resources
29%	29%	26%	24%

Fortune 1000 & Inc. 5000

By definition, startups are engines of innovation. It's often easier for smaller organizations to be nimble as they shift functions to the hybrid cloud environment. This was further validated during this study. In interviews, CIOs from the Fortune 1000 were more likely than Inc. 5000 CIOs to express concerns about hybrid cloud integration and security. The barriers to change were taller than what was facing Inc. 5000 CIOs generally.

"When we have to send the data to the cloud, the compliance issues and security clearance are the challenges that we face. Once we overcome these, then things will go smoothly."
CIO, Fortune 1000

On-Premise Solutions are the Most Important
(Average Ranking on a Scale of 0-10)

On-Premise Solutions	Cloud Solutions	Mobile and Smartphone Solutions	Social Networking Tools
8	7	7	5

There's no simple solution for everything. Like today's tech savvy consumer, organizations utilize a variety of tech tools: a mix of cloud solutions, mobile and smartphone solutions, and social networking tools. The mix works, when everything works together for the end-user.

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Integration: Slow is a Problem
CIOs Report Full Integration Takes Months

While early hybrid cloud adopters believe the mix-and-match approach is here to stay – more than a quarter of CIOs report problems which can slow operations down. **Among hybrid cloud users, more than 1 in 4 (29%) feel the process of integrating services in a hybrid cloud has run behind schedule.** It takes, on average, six months to achieve full integration – meaning the company is able to offer a seamless experience to the end-user.

"At the start of the project, undefined requirements needed for migration caused delays."
CIO, Inc. 5000

Integration Process
(Among Hybrid Cloud Users)

29% Behind Schedule

71% On Schedule

To optimize the integration process, **CIOs say a defined partnership between internal staff and vendors is critical**. "We have a clear relationship with the vendors, and we have folks who provide the training ahead of the project execution," says a CIO of a Fortune 1000 banking company. "The vendors must understand our requirements."

When integration gets behind schedule, the source of the delays can often be traced to flawed planning. Requirements for migration to the cloud need to be defined. **Internal staff and vendors must understand exactly what to do when confronted with technical problems.**

"Once we provided data, it took a lot of time determining what was accurate. For example, determining who last touched certain data, and whether they're still with the company." CIO, Fortune 1000

For a successful relationship between a hybrid cloud service provider and a company to last, the vendor must understand an organization's environment and goals.
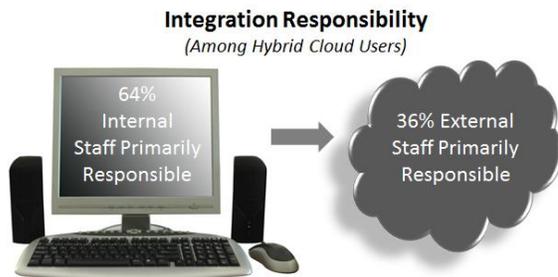
"If we don't know what requirements we need before we start the project, then that's our problem, but also the vendor's problem for not asking the questions up front," says a CIO for an Inc. 5000 communications company.

No matter how much you plan, unanticipated technical issues can come up during hybrid cloud integration projects. It's tough to anticipate how well a hybrid application will perform, according to many CIOs. Sometimes, design work is done post-migration. Applications can work without any issue in a non-cloud environment, but then run into issues during integration. This makes vetting the cloud vendor even more important.

"Integration went smoothly because we had detailed knowledge of the internal piece, and familiarity with the external piece. The vendor provided clear understanding and documentation of how to make both pieces work well together." CIO, Inc. 5000

"It took longer for us than we thought. We ran into trouble when we didn't know where the problem was coming from. Was it in the integration process?" CIO, Fortune 1000

"It's ultimately up to the end-user to say if the application is working right. Usually, it may perform the proper function but it won't work at the proper level." CIO, Inc. 5000

Integration Responsibility
(Among Hybrid Cloud Users)

64% Internal Staff Primarily Responsible

36% External Staff Primarily Responsible

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Top Priority: Engaging People to Execute Together in the Right Direction
Survey: IT Takes the Lead

Planning and communication are important when integrating hybrid cloud solutions, but who takes the lead? For most companies, when it's time to jump on board the hybrid cloud, it's the IT staff. **64% of CIOs that use the hybrid cloud say internal IT is primarily responsible for integrating hybrid cloud services.** IT staff have earned the respect and trust of their organizations, and their involvement is required to protect sensitive company data. "With sensitive areas in HR systems, we need to make sure we are in control of that information and protect our systems and our data," says a Fortune 1000 CIO.

"Internal people have the first exposure and can flag things that might cause concerns down the road, especially for the initial phases." CIO, Fortune 1000

However, that same CIO recognizes that trust is also required for working with their external partners. "We must have confidentiality systems with our providers."

Sure, companies may value internal knowledge and trust their IT teams – but they continue to seek the agility cloud vendors provide. What's more, when external staff is responsible for integrating services, company resources can be focused on other areas, like new product development. **But letting go isn't easy. Often resistance to change comes from the top.**

"We feel our internal staff knows our applications best." CIO, Inc. 5000

"Our staff has a proven track record with these kinds of deals. We trust them to do it faster and more efficiently." CIO, Fortune 1000

Resistance to Hybrid Cloud
(Among Non-Hybrid Cloud Users)

75%
Have Experienced
Resistance

25%
Have Not
Experienced
Resistance

This may explain why, among non-hybrid users, **75% of CIOs report resistance within their companies to implementing hybrid cloud services. This resistance likely stems from company culture, rather than from a lack of familiarity with hybrid cloud services: in these companies, IT staff (42%) and other C-level executives (42%) are equally resistant to implementing new hybrid cloud services.** In contrast, just 17% of non-hybrid cloud CIOs report that potential end-users, such as sales and marketing, have created resistance to implementing hybrid cloud services.

When hybrid cloud computing is out of an organization's comfort zone, CIOs often take the lead confronting concerns: **IT staff may worry about security and control, end-users about how it will work, and executives about how hybrid cloud solutions will look to clients.** "I need to demonstrate that hybrid applications are a viable solution," explains one Inc. 5000 CIO. "It really is our future."

As with every aspect of business, who is responsible for problem solving has a substantial impact on whether the problem is actually solved. Among cloud users, nearly half (48%) say when there's a problem with a cloud service, IT staff are most likely to work with a third party vendor to resolve it. **Among cloud users, nearly all (98%) feel IT staff understand who is responsible for problem solving when there's an issue with a cloud service.** Confusion is common when the entire organization isn't up to speed on integration. "Right now, just our IT staff has the full understanding of the integration," says the CIO of an Inc. 5000 construction firm. "The end-users don't really know how the process works."

"We end up problem solving because they don't know where the responsibilities are. Sometimes it's just faster for us to do it ourselves." CIO, Inc. 5000

"You need to make sure that your internal folks know how to work with the external folks. If you don't understand that, you'll be calling up the wrong people." CIO, Fortune 1000

Understanding Problem Solving Issues With the Cloud
(Among Cloud Users)

98% Understand Well

2% Don't Understand Well
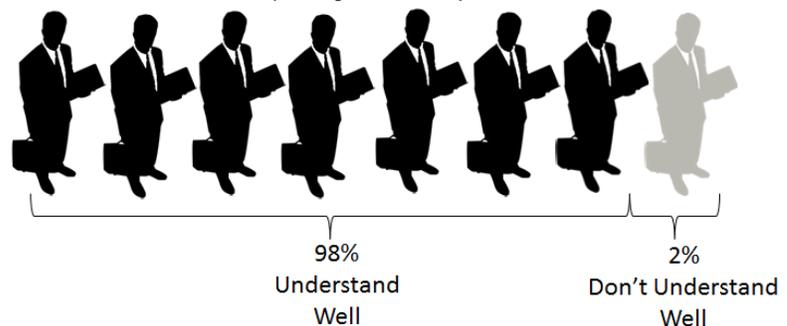
Executing at Speed and Scale Equals Efficiency
Survey: Hybrid Tools Can Free Up Resources

Ideally, hybrid cloud solutions speed up business development. But legacy data management systems can be an obstacle in this effort. Like co-workers, legacy systems that can't communicate with cloud tools slow work down and inhibit growth.

75% of CIOs interviewed see their company's data management systems as an asset when helping project teams respond quickly to client demands. Still, platforms put in place a long time ago can struggle to keep pace with CIO expectations. "I think some of the data that we would like to be able to leverage to help our project teams do research and analysis are still locked away in legacy systems, making them difficult to manipulate," explains a CIO for a Fortune 1000 financial institution with cloud applications in place.

Along with speed, scale is important. A hybrid tool needs to fit the needs of an enterprise. Hybrid cloud solutions can free staff to focus on core business functions. One Fortune 1000 CIO's explanation of why, is representative of how many CIOs feel: "Hybrid cloud tools deliver quicker response time. There's no delay in receiving the information." Another Fortune 1000 CIO put it differently. "By migrating to the cloud, we have less hardware on-site. We spend more on dealing with customers."

Data Management Systems

75%
Asset

25%
Obstacle

A hybrid cloud approach can trim administrative functions, such as adding or deleting end-users, patching or adding software, and user-provisioning for new employees. It can also help to consolidate entire departments. "We were able to downsize our HR department because many things are now handled by our third party provider," explains a CIO for a Fortune 1000 media company.

"The amount of administration and the underlying infrastructure and architecture is now less complex because it's handled by the vendor." CIO, Inc. 5000

Cloud tools are easy to scale up or down depending on the

volume of the data. This makes cloud computing attractive to both startups and major corporations.

Efficiency is a goal for businesses of all sizes.
Migrating to hybrid cloud services takes planning and patience – but it can ultimately simplify operations. **75% of hybrid users interviewed feel their company's IT processes are less complex after migration.**

Hybrid cloud computing can free up resources, but organizational adjustments are often needed to win efficiencies when companies transition from on-premise to hybrid cloud products. CIOs are less concerned with physical asset issues like storage, and more focused on the cloud application. "Now we keep just two resources for operating and monitoring data, so it's simpler," explains a Fortune 1000 CIO who has implemented hybrid cloud solutions.

Sometimes the biggest adjustment needed is in attitude. "**Convincing the organization to use hybrid services, and getting through the cultural dynamic so we can let go – that has been one area of learning**," according to one Inc. 5000 CIO.

Complexity After Migration
(Among Hybrid Cloud Users)

75%
Less
Complex

25%
More
Complex

"We had solutions in-house but it was a little disjointed. A lot of the solutions were pieced together from various sources. With hybrid we were able to get solutions that more closely fit our needs." CIO, Inc. 5000

Security Risks and Barriers to Adoption
Survey: Reality Check from CIOs

There are many benefits to a mixed IT environment – and potential vulnerabilities. **More than half of all CIOs interviewed feel, in general, on-premise solutions (52%) remain more secure than cloud-based solutions. However, nearly as many (48%) feel cloud-based solutions are equally secure or more secure than on-premise solutions.** With any application effort, cloud providers gain the confidence of organizations considering

"Security and complexity have created resistance to implementing hybrid cloud services." CIO, Inc. 5000

a cloud migration by following through on a proven security plan. Simply put, CIOs express the need to have every nitty-gritty data security

"We make sure that when we deploy a cloud-based solution it has the same security as on-premise, or we wouldn't use it."
CIO, Fortune 1000

"There's a question of ownership, when hosted externally. Who has access to data? What controls are in place? Things like that are very important to understand." CIO, Fortune 1000

detail spelled out at project start. That's especially true for financial institutions. "Any time we buy a cloud service we have a fairly extensive security risk assessment that we need to do," says the CIO of a Fortune 1000 financial institution. "Security is the biggest issue with cloud-based providers."

Interviews with CIOs reveal where hybrid cloud computing vendors are vulnerable. When asked specifically whether migrating their services to a hybrid cloud increases security risks or reduces them, **a majority of the CIOs (64%) claim it generally increases security risks.** As hybrid cloud computing continues to evolve, there is work to be done to win over CIOs who may be concerned about compromising data with hybrid cloud applications. Among the CIOs interviewed, security (40%) is a bigger concern than integration (31%). Less than 1 in 5 (17%) listed cost as their biggest concern.

CIOs Feel On-Premise is Most Secure

Cloud-Based — 17%

Equally Secure — 31%

On-Premise — 52%
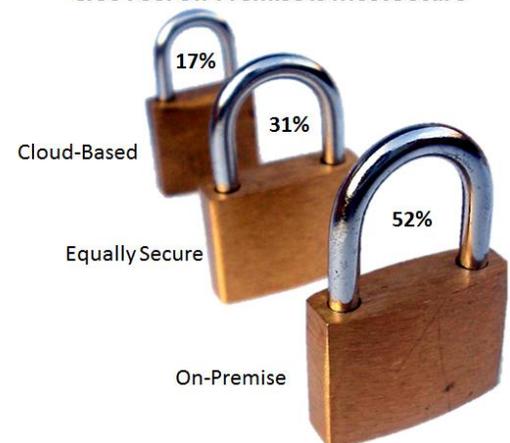
Many CIOs said focusing exclusively on cost may leave their organization open to compromised data down the road. On the other hand, a smart cost-saving move is maintaining smooth and secure integration when adopting hybrid solutions. As one Fortune 1000 CIO explains, "If you can't ensure security, it doesn't matter how cost effective the solution is."

Biggest Concern When Implementing Hybrid Cloud Solutions

Security	Integration	Costs
40%	31%	17%

While security concerns and resistance from staff and executives will need to be addressed, for many CIOs, they feel these issues are manageable, as evidenced by the popularity of hybrid cloud solutions among this group. "If I have to do everything in-house, I have to order all these parts. I can do everything in a week if I do it on the cloud," says a Fortune 1000 CIO – and fan of hybrid cloud tools.
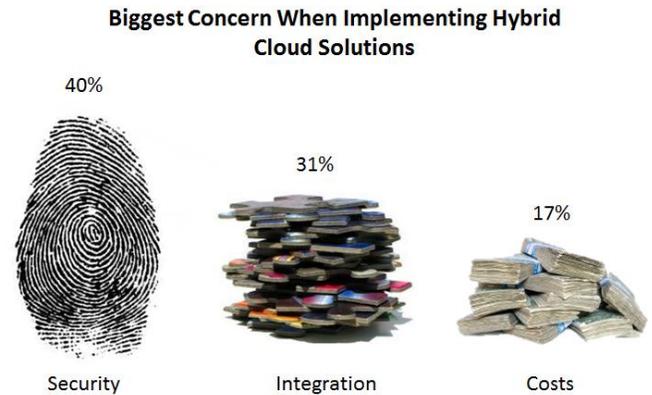
Conclusion: Hybrid Cloud Considerations

Deciding whether or not to jump on board the hybrid cloud takes a clear understanding of an organization's goals – and its capacity to change.

As the in-depth interviews with CIOs reveal – there are many benefits to hybrid cloud computing. When migration runs smoothly, hybrid applications can simplify IT processes, and improve the end-user experience. Even non-hybrid users interviewed for this study appreciate the advantages of hybrid tools. But there continues to be barriers to adoption.

Most CIOs interviewed feel migrating services to a hybrid cloud configuration will increase security risks. What's more, 75% of CIOs using non-hybrid solutions feel there is some resistance within their companies to hybrid tool adoption. Both security concerns and institutional barriers will need to be overcome in order for hybrid cloud applications to continue to evolve and gain wider acceptance.

Companies don't need to figure this all out by themselves. Partnering with a vendor can help CIOs realize the promise of hybrid cloud solutions for their particular company. The right vendor not only provides a cloud service, but helps internal teams continue to manage hybrid cloud tools. As they move to the future, this can give an organization, no matter what the size, the flexibility today's evolving business climate demands.

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