How to Cloud Enable Your Software
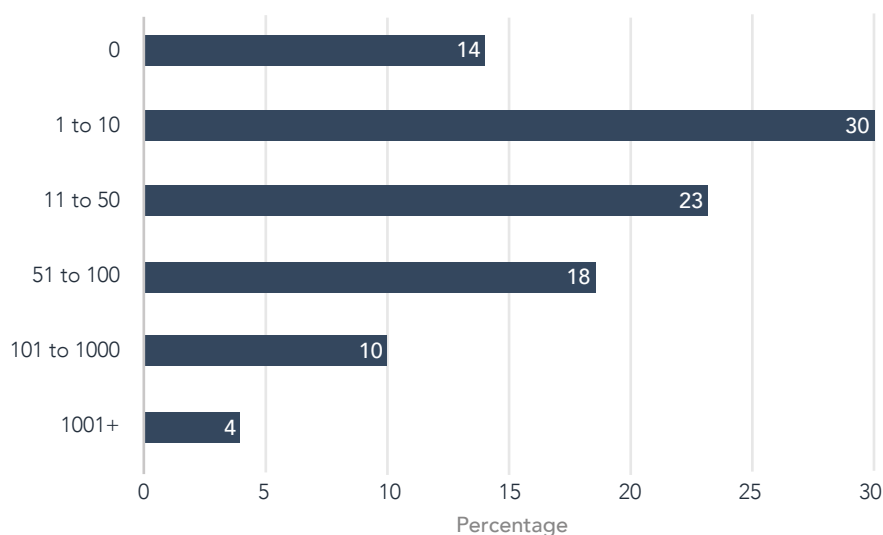
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Executive Summary

We all know that cloud computing is exploding, and analysts have the numbers to prove it. In a recent Gigaom survey of Fortune 500 companies, the most interesting data points are the number of instances that currently run within enterprises.

Most organizations have 1 to 50 public cloud instances running on any given day, with 4 percent of respondents reporting more than 1,000 daily cloud instances.

Today there are thousands of ISVs that are losing market share because they haven't moved to the cloud

How many public cloud machine instances do you have in production on any given day?

Gigaom Research

The pattern shown here is one of acceptance and adoption of public clouds. While it is not surprising that the largest block of enterprises are running 1-10 instances, it is certainly a surprise that many are running far more. A few (4%) are cloud "super users" running over 1,000 cloud instances on any given day and this number is growing quickly.

The number of instances that reflect the true use of the cloud is rather impressive, relative to what we've seen in the past. Enterprises are putting more systems and applications into production on public clouds, and thus spinning up more and more instances to support their increasing processing and storage loads.

While the cloud market growth numbers are compelling, it's critical to note that most of the existing ISVs (independent software vendors) don't have true cloud offerings. Instead, ISVs continue to struggle in a market where software solutions that are delivered using the public cloud model have a clear "leg up" on those that don't.

Although ISVs are working to enable cloud-based versions of their software, many have not found the right path to get to the cloud. That path includes seeking assistance to understand what they have, what needs to change, and the best plan of action to provide a true public cloud offering.

At Cloud Technology Partners, we help ISV and large enterprises move technology portfolios to the cloud at the lowest cost and with minimal risk. Our dedicated team of cloud architects, software engineers, data specialists, and leading market analysts are collectively known as CTP Labs.

What's an ISV to do?

If the cloud is exploding, then what should you do to take advantage of the changing market? The kneejerk reaction is to push ISV offerings to the cloud, no matter if they should go there or not. 10 years ago, when the SaaS explosion occurred, many ISVs declared themselves SaaS providers. While some did okay within the shifting tides of software consumption, many did not, and many exited the market entirely.

Today, there are thousands of ISVs that have not yet made the journey to the cloud. Some may have previously attempted the move, but quickly failed. Many of the still thriving businesses were waiting to see the "cloud fad" go away. Now ISVs must face the fact that cloud computing is here to stay. These firms need to find a way to adapt, or watch their market collapse.

Key issues driving this market change include:

The software cost pressures that exist within most enterprise IT shops.

While budgets are improving, CIOs are being asked to do much more with much less. The notion of paying another hundred thousand dollars to many millions of dollars in software licensing costs is out of the question for many enterprises. As one CIO told us: "We want Saleforce.com versions of everything."
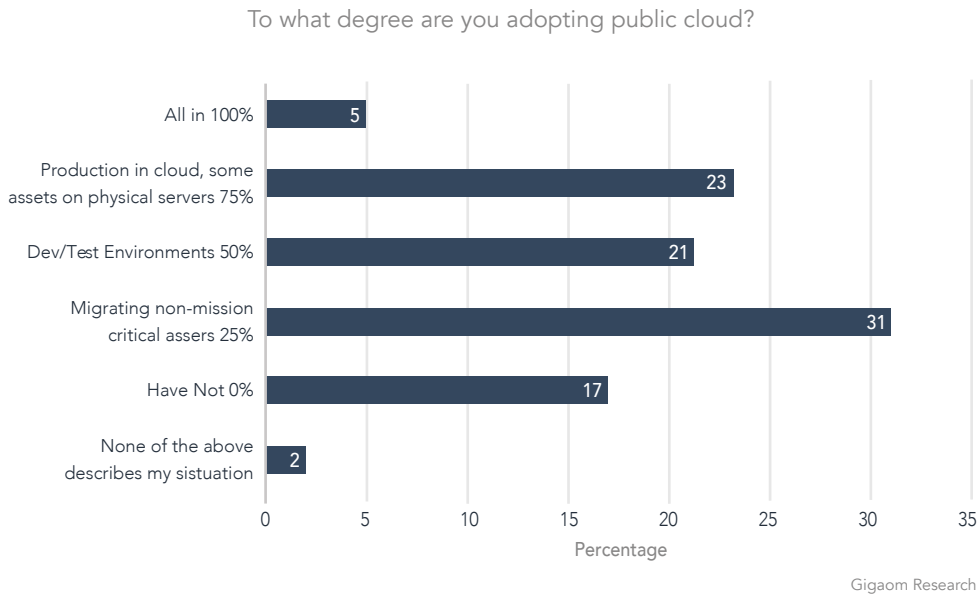
"We want salesforce.com versions of everything"

The movement away from capital expenditures.

While the value of cloud computing around opex versus capex is well known, this is getting pounded home with the number of enterprise data center projects that are queued up and awaiting funding. Managers in those companies now question the need to build or rent more data center space, and they are pushing back on CIOs that are looking for cloud-based applications to replace many local applications.

The demise of the "Cloud Computing Chicken Littles."

The maturity of cloud adoption has moved away from the experimental and skeptical stage, to sound acceptance of the technology. Those who once pushed back on cloud computing due to security and reliability issues have not seen these issues rise up as real concerns, even now that most enterprises are well into their 2nd or 3rd implementations. A recent Gigaom study supports these findings.

To what degree are you adopting public cloud?

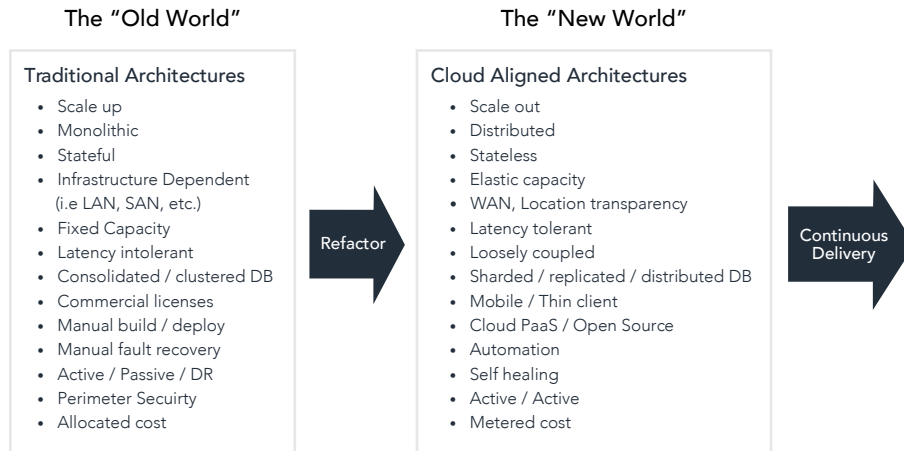| Category	Value
All in 100%	5
Production in cloud, some assets on physical servers 75%	23
Dev/Test Environments 50%	21
Migrating non-mission critical assers 25%	31
Have Not 0%	17
None of the above describes my sistuation	2

Percentage

Gigaom Research

Not only is the market demand returning to ISVs and asking for their ability to redo their software as cloud services, but their existing customers are doing the same. Most ISVs have been looking at cloud-enablement over the years, and perhaps have even stood up some pilot projects, only to balk at the cost and the risks associated with building a true cloud-based offering.

Some ISVs made half-baked attempts, but never got beyond single-tenancy offerings, which were just too costly to place into production. This includes offerings that were basically single physical servers that were matched to single users, and passed off as a true cloud-based solution. The users eventually figured out the limitations, and the projects went on the back burners.

As you can see from the figure below, the way in which we approach application development and deployment is changing around the use of cloud computing. The "Old World" traditional architecture and approaches to application development and deployment had limitations. The "New World" offers more advantages, but those advantages are only realized after

a significant amount of careful planning, architecture review, and technology selection has occurred. Most ISVs fail to move to the "New World" due to lack of experience in deploying these types of solutions.

The "Old World"   The "New World"

Traditional Architectures
- Scale up
- Monolithic
- Stateful
- Infrastructure Dependent (i.e LAN, SAN, etc.)
- Fixed Capacity
- Latency intolerant
- Consolidated / clustered DB
- Commercial licenses
- Manual build / deploy
- Manual fault recovery
- Active / Passive / DR
- Perimeter Secuirty
- Allocated cost

Refactor →

Cloud Aligned Architectures
- Scale out
- Distributed
- Stateless
- Elastic capacity
- WAN, Location transparency
- Latency tolerant
- Loosely coupled
- Sharded / replicated / distributed DB
- Mobile / Thin client
- Cloud PaaS / Open Source
- Automation
- Self healing
- Active / Active
- Metered cost

Continuous Delivery →

The time to move is now.

For many ISVs, cloud-based offerings are a hit to profits that most won't accept, including the smaller ISVs that maintain still smaller margins. Given the fact that many ISVs have taken a beating from their cloud-based competitors, some may not have the resources needed to create a cloud solution that's competitive in the marketplace.

That being said, for the most part, ISVs have very little choice. ISVs that have been waiting to jump into cloud can wait no longer. Considering that it may take a year or more to get the right cloud solution into production, the required date to begin moving to the cloud is rapidly approaching for most ISVs.

However, there still should be work done on the front-end to determine the actual value of the move. While most will benefit, and indeed have to move to stay in the market, there are a few that should stay put. You need to figure out what you are and which category your ISV falls into before you toss money at this issue. Not every software system should exist in the cloud, for many different reasons, however, most should. That should send you to do some quick research, and find out the potential value that a cloud-based offering can bring, and perhaps how to avoid bankruptcy-by-cloud. To sum things up:

ISVs seek:

- The ability to rapidly adapt to new market opportunities

- Speed and agility to deliver new functionality and features

- Dynamic global scalability

- Capture long-tail of market -- cost of delivering application on traditional infrastructure is too high for SMB customers

- Lower TCO – avoid low utilization of over-provisioned existing infrastructure

- Faster customer on-boarding

ISV Customers seek:

- More flexible pricing and delivery models

- Configurable services -- one size does not fit all

- Lower maintenance -- effort and cost

How to move to the cloud

ISVs moving to the cloud have a great deal of work to do to actually create public cloud-based offerings that are competitive. Competitive products include the ability to:

- Deal with tenancy issues

- Provide web scale features

- Provide usage-based accounting

- Provide client management

- Provide data integration and migration solutions

- Provide "cloud native" performance

The path to get to these "cloudy" features can be rather simple with software systems that have been well designed, maintained, and implemented. However, most ISVs that have been around more than a few years are typically dealing with older legacy code and databases, or layer upon layer of code on top of code that was supposed to be fixed, but never was. The ability to get to the cloud could mean a massive amount of rewriting and re-architecting, perhaps leading to more risk and cost than any value that cloud-enablement could bring.

The core question is not if ISVs can cloud-enable their systems; they certainly can with enough money. The big question in the conferences rooms of most older software players is, "will our investments in providing a SaaS solution that the market and customers expect be worth the added risk and cost?"

After you deal with the "if we should cloud," it's time for "how do we cloud." The figure below depicts one approach to cloud-enablement, working from the initial vision to the operations of the cloud solution. This includes defining the target market for the SaaS cloud, which leads to the core requirements. From there, define any changes to the architecture and enabling technology, move to development, testing, and deployment, typically leveraging Agile and DevOps best practices and technologies. Next, move to the market, and define all aspects of operations around the new cloud service or services.

Create the Vision	Define the Solution	Devlop Solution	Go to Market	Operations
• Market Definition • Market Alignment • Define Success	• Architecture • Technology • Dev Planning	• Physical Architecture • Technology Selection • Dev & Testing • Deployment	• Messaging & Demand Creation • Thought Leadership • Sales Process • Implementation Planning • Product / Services Management	• Operations Planning • Operations Processes • Management • Security • Governance

As a general rule, you're going to spend about 10 to 20 percent of your yearly software revenue to move a typical software system to a cloud-based solution. So, if your ISV makes $500 million dollars, you're going to spend about $50 to $100 million on the refactoring, re-architecture, and redevelopment to get to the right cloud offering.

How can we cloud-enable your software?

Cloud Technology Partners is dedicated to transforming existing software and enterprise systems into multi-tenant, auto-scaling cloud services. For developers and enterprises looking to port their existing on-premise software to the software-as-a-service (SaaS) model, we provide market analysis and business modeling, as well as product planning and development.

The figure below outlines the types of deliverables that emerge from a typical engagement. The list includes items delivered around the Concept, Viable Plan, Dev/Test, and Launch, as well as Operations and Continuous Improvement.

Create the Vision	Viable Plan	Lean Dev / Test	Lean Launch	Operate & Improve
• Brainstorming with experts • Business need / benefits • Viable solution boundaries • Scope boundaries • Budget • Timeline • Globalization parameters • Ecosystem discovery • Process & data discovery • Stakeholder identification • Organizational impact • Capability assessment • Risk management • Board level presentation to request funds for next phase	• Functional & non-functional requirements • Demand forecasting • Distribution, availability and scalability model • Metrics identification • High level architecture and technology selection • Story and epic development for initial Minimum Viable Product (MVP) release • Wireframe prototype and arch POC on target cloud • Governance model • Org, skill sets & resources • Release strategy • Infrastructure and operational reqs for DevOps • Operational Model • Business enablement • Financial / licensing / chargeback model • Implementation estimate and plan • Critical path, risk burn down strategy • High-level business case with TCO • Board presentation for next phase funding request	• Release scope management • Prioritize user stories and test scenarios • Prove the hardest stuff first with agile architecture "stories" for risk based arch spikes such as capacity and scaling • Cloud-Native SDLC deployment architecture • Lean software development for minimal viable product • Agile function, scalability, and resiliency testing • DevOps automation • TestOps and automation • Platform development • Security and compliance • Data management • Integration and API management • Application operations and monitoring • Defense-in-depth security	• MVP Pilot • Metrics analysis • Feedback loops • Acceptance testing • Performance and scalability testing • Resiliency and availability testing • Business Continuity testing • User on-boarding • Support on-boarding • Operations on-boarding • ProdOps	• Growth & global expansion • Phase 2-N development • Continuous integration • Continuous development • Refactoring automation • Operational automation

Through CTP Labs, Cloud Technology Partners provides developers and enterprises looking to cloud-enable their applications with "pre-packaged and proven approaches, methods, frameworks and toolsets" to help shift traditional software to the cloud. This includes:

• A proven approach to defining, architecting, building, testing and deploying cloud services designed for both ISVs and enterprises.

• Access to experienced analysts, architects and developers with business-critical delivery experience working with enterprises and ISVs.

• The ability to provide advice on emerging cloud market trends to address specific market opportunities.

Pricing is on a per-project basis, and typical engagements range from three months to one year.

Experience is key – Here's where to start.

If you're an ISV who has not moved to the cloud, or one that moved to the cloud and failed, you understand the importance of selecting a trusted partner for your project.

You'll need guidance in terms of where you are, where you need to begin, and directions toward the architectural paths you need to take, the processes you need to change, the development practices that need augmentation, and, finally, how to get your software operationally successful in the cloud. Experience is the key, and Cloud Technology Partners provides the guidance and development services you need to get your technology portfolio to the cloud, at the lowest cost and with the least risk.

Get in touch to arrange for your free consultation. We would love to understand your cloud challenges, and provide you with the expertise you'll need to get your cloud implementation and deployment right the first time.

Learn more

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