

Cloud Brokerage Service, a right buying decision minimizes the risk of Hybrid Cloud

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Abstract— Digital Modernization of business is tempting most of the enterprises if not all to move their assets into cloud. Our digital business relies on an enormous growing portfolio of cloud platforms, creating a differentiator of client experience and end-user computing. The Cloud journey started predominantly with Infrastructure as a service (IaaS) and further advanced to Platform as a Service (PaaS) or Software as a Service (SaaS). Today, technology drove a mile ahead and now enterprise has a choice of various cloud options what we call it as Hybrid cloud. Since options increases, confusion is also increased among the buyers to choose their right cloud platform for the enterprise. Technology, agility, return on investment, market maturity, strategic alliance with business partners and several other factors come into play while choosing the right cloud platform for an enterprise. This article will address how to choose a right buyer and what are the various vehicle available to help the buying decision of the enterprise.

Index Terms—Cloud Computing, Brokerage, Hybrid Cloud, Cloud brokerage, Service Integration, Buy Cloud, Cloud Model, Cloud Service provider.

I. INTRODUCTION

Let us have a quick briefing on today’s most common cloud scenario of a large enterprise i.e. hybrid cloud. The concept of hybrid cloud came from a combination of private cloud and public cloud offering. In today’s market, there are numerous public cloud service providers, knowing your business to move your workload into their public cloud offerings. Many of the popular cloud providers such as Amazon Web Service (AWS), Google, Microsoft Azure, IBM Softlayer and other large providers are specialized in certain offerings and they are better over others with respect to specific capabilities. Public cloud are not something new and it’s in the market space for a while however it’s been into limelight recently after hybrid cloud concept got popular.

So hybrid cloud is a cloud platform which uses both on-premises, private cloud and third-party public cloud services with a common orchestration between the two platforms to communicate synonymously. The reason for it’s being popular so far is that none of the organizations want to take a risk of putting all their workload into public cloud due to their asset classification and compliance guidelines. Putting their bulk workload into a private cloud doesn’t make much sense from Return on Investment (ROI) perspective as public cloud is really cheaper compared maintaining a private cloud service within the organization. Industry has passed through the world of virtualization long time back hence millage for

hardware footprint reduction, elasticity, quick provisioning are no longer attractive for business to get a significant benefit. Hence real financial benefit comes when client moves their assets into public space without compromising the asset security. A hybrid is a go to options for most of the enterprises that started cloud journey since while with a private cloud and now spending their time and energy into public cloud through a careful asset classification process. Here the concept brokerage service comes into play. That helps client to choose their right cloud platform(s).

II. CONCEPT OF BROKERAGE SERVICE

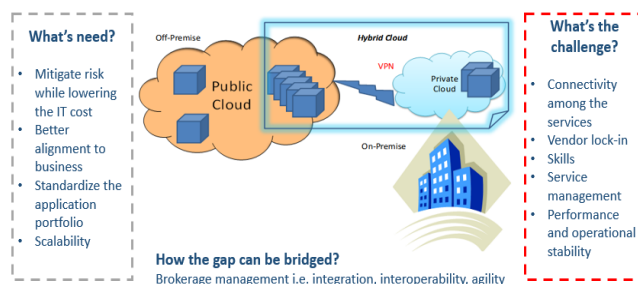


Fig 1. Need for hybrid cloud

Most of the clients have a mix of cloud and traditional IT deployment today, opening up the opportunities but increasing challenges as well. So the question on the table is that what the brokerage service offers here in an enterprise hybrid cloud environment.

As per Gartner, Cloud services brokerage (CSB) is an IT role and business model in which a company or other entity adds value to one or more (public or private) cloud services on behalf of one or more consumers of that service via three primary roles including aggregation, integration and customization brokerage. A CSB enabler provides technology to implement CSB, and a CSB provider offers combined technology, people and methodologies to implement and manage CSB related projects.

Another popular definition is from NIST i.e. a Cloud-Management Broker (CMB) “provides a cloud-user a unified and enhanced management interface to multiple cloud-providers.” The institute also identifies the essential features of a CMB as a unified interface, federated cloud-subscriber credentials for multiple cloud providers, and federated access to multiple cloud-provider programming interfaces.

In simple layman term, a brokerage service is an option

through which an enterprise can choose and manage various cloud platforms and their services such as assessment, planning, order placement, fulfillment and managing the enterprise workload across multiple service providers. Basically it balances the need of central IT with line of business.

Brokerage service provides a visibility to the end-to-end IT-as-a-Service supply chain and buying behavior of clients by providing a data driven insights to help an enterprise, enhancing their offerings and cross-sell and upsell additional services.

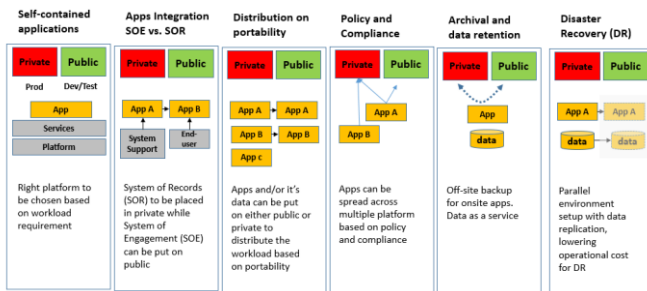


Fig 2. Cloud fitment model

We would also like to discuss the various deployment scenarios of the hybrid cloud platform as per figure B. Here we have outlined six pillars through which a set of workloads can be categorized. While placing the application workload following characteristics can be considered either individually or one can supersede other depending the priorities.

1. Self-contained application – low touch, low integration point, pretty much can run as a container like a self-sufficient app, the starting point is to keep the Dev/Test workload in public while their Prod should be placed in a Private before the enterprise gets familiarity on the hosted public cloud operations.
2. Application Integration: System of Engagement (SOE) vs. System of Records (SOR) – the most common pattern is to keep SOR in private while SOE can be deployed public with a right networking and security compliance guidelines.
3. Distribution on portability – anything and everything can't be moved to public cloud, an appropriate portability assessment needs to be made in terms of public cloud platform and their standardized middleware operations model e.g. WebSphere Application Server (WAS), IBM Http Server (HIS), DB2 or SQL Server database can be a standard public cloud operating model while a specialized workload e.g. running in Oracle RAC or Sybase database may not be a standardize common public cloud offering.
4. Policy and Compliance – application workload can be deployed into private or public based on compliance policy e.g. data security model, enterprise may not be interested to put the secured

customer sensitive information (credit card, SSN, Bank Account etc.) into public at the first go without proper security assessment and policy control.

5. Archival and data retention – now a days, a very common practice to keep archived data into public cloud while the live data within the enterprise. However proper data masking algorithm needs to be applied before it can be moved to off-sites depends on data sensitivity level.
6. Disaster Recovery (DR) and Business Continuity Plan (BCP) – this is getting increasingly popular to create a DR in public cloud for a Prod workload. This minimizes the cost of DR operations.

III. CLOUD ADOPTION SERVICE THROUGH BROKERAGE

At the conceptual level, there are primarily three entry points for adopting a brokerage service; plan, buy and manage. Following figure is a simple illustration of three adoption points.

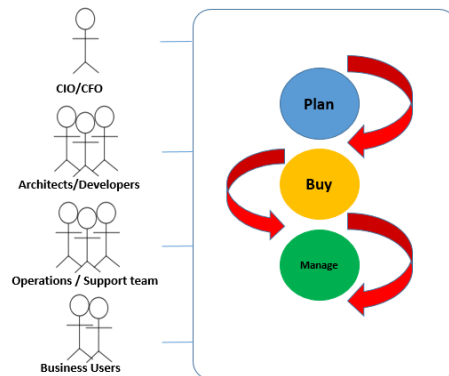


Fig 3. Cloud Brokerage features

Here it's important to note the various actors into the systems. The need for CIO/CFO, developers, architects or business users are different and hence their use cases are different in terms of consumption pattern into the brokerage service. Some of the common entry points are:

1. Shadow IT – get a quick stock of cloud assets and stock and control the assets accordingly.
2. Continuous delivery using DevOps – start building agile applications building for cloud e.g. born-in-a cloud or cloud native apps.
3. Application Migration and Modernization – Transition and transformation to the cloud environment. Identify quick wins.
4. Operation IT as a service – Rationalize IT environment for speed, scale and management for seamless network connectivity between off-premise vs. on-premise, standardize network, e.g. software defined network (SDN).

IV. UNDERSTAND YOUR STAKEHOLDERS

In order to understand the stakeholders, it's essential to draw a simple system context diagram to recognize the

various stakeholders influence the activities of the brokerage services such as plan, buy and manage.

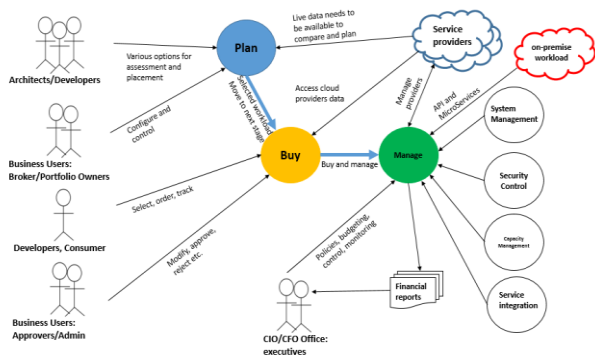


Fig 4. Various actors in Cloud brokerage service

The above figure D explains the various actors such as developers, consumer, CIO/CFO office and portfolio owner’s act on the system as shown above in three key brokerage components; Plan, Buy, Manage to execute various functions. The basic brokerage service also integrated with other key systems such as system management, capacity management, service integration, security control etc.

V. BROKERAGE REFERENCE ARCHITECTURE

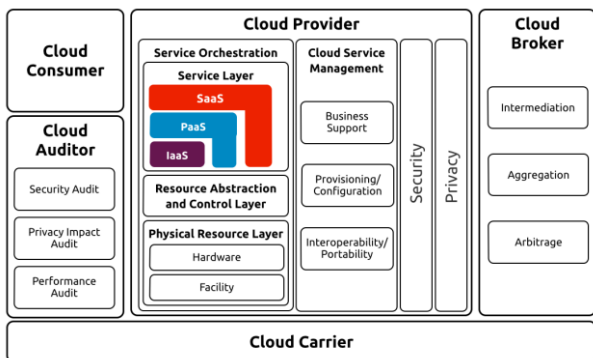


Fig 5. Brokerage reference architecture

Without getting into too technical, let us quickly explain brokerage reference architecture in simple terms. As shown in above figure E, most of the cloud brokerage service or software generally operates among the various service provides (shown in the center) such as AWS, Softlayer, Google, Azure etc. and it manages the various consumers such as CIO, CFO, developers, architects and IT ops guys etc. The middle portion is the services which essentially provides orchestration, order management, fulfillment and financial management.

VI. BROKERAGE SOFTWARE AND TAKEAWAY

When it comes to choose a brokerage services or software tool, there are quite a few however following are taking a lead in the market space.

Gravitant from IBM, AppDirect, RightScale, Jamcracker, and Ostrato primarily focus on the enterprise cloud brokerage service. Most of the vendors provides their unique

capabilities over other beyond a standard brokerage services.

Gravitant is recently taken over by IBM. Its a cloud-agnostic brokering software for accelerating and optimizing the technology delivery value chain, starting from assessment through comparison of various cloud providers, design, procurement, ordering and operations.

The AppDirect’s key component i.e. Private App Management (PAM) service is worth mentioning as it enables service providers and enterprises to build self-service cloud application portals and marketplaces. It can be consumed as SaaS and on-premises and packages cloud apps for scripted deployments to a broad range of cloud platforms.

Similarly The Right Scale Cloud Portfolio Management suite is a cloud-agnostic standalone hybrid cloud management solution that includes a self-service portal, a cloud management module, and a cloud analytics module. RightScale delivered one of the first independent cloud management solutions and targets both application and infrastructure cloud life-cycle management. The product includes a self-service portal with cost visibility and controls, automated provisioning, application and infrastructure templates, policy-based governance and workload life-cycle operations, change control auditing, and monitoring across a range of private and public cloud platforms.

However we are not here to compare tools or vendor brokerage products. We like to summarize here at the conceptual level. An enterprise will select an appropriate tool based on their business need and the capability, the tools offer. Our recommendation is that start with small, focus on IT challenges, determine the priorities and pain points. Choose the right brokerage service which suites your business requirement. There is no service which is perfect; it depends on how you adopt the services to meet your business model.

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