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Is Your Colocation Provider Cloud-Enabling or a Cloud Impediment?

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Many enterprises are looking to colocation as a first step in the journey toward a hybrid cloud future. Unfortunately, the choice of a colocation provider can either enable or restrict the cloud options and architecture available. We provide a context and framework for the questions to ask.

Key Challenges

- While colocation's connectivity options can enable uniquely synergistic hybrid cloud models, selecting a colocation provider without understanding its cloud stance can actually hinder such architectures.
- Moving to colocation as a first step off-premises toward cloud computing requires knowledge of what types of cloud computing are likely to be deployed by the enterprise over the next three to five years. We find this knowledge is often lacking during an initial colocation planning effort.
- Understanding the strengths and weaknesses of colocation providers' differing cloud options is critical to planning hybrid colocation to cloud models.

Recommendations

- Document current enterprise cloud plans, including software as a service (SaaS), platform as a service (PaaS) and infrastructure as a service (IaaS), and any requirements for hybrid connectivity to proposed colocated applications and data.
- Determine whether the colocation effort or the cloud effort is leading the pool of options.
- Map the planned cloud requirements to the capabilities of the proposed colocation solutions.

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Introduction

What Is the Opportunity?

Colocation can provide a unique blueprint on which to build hybrid applications, due to proximity of the colocated enterprise assets to hosted and cloud-based resources (see Note 1). Such connections can be as direct as a fiber connection from an enterprise router to a hosting or cloud provider router, with only a cross-connect in the middle. On a simple basis, a lower-latency, higher-speed connection directly to a provider with assets in the same facility drives latency and costs out of the connection, saves the enterprise money, increases performance, and keeps sensitive traffic off the public Internet. In a more complex configuration, such connections may allow for colocation asset-to-cloud or cloud-to-cloud applications to be created that were previously infeasible due to the delay of Internet connections.

What Types of Cloud Enablement Can Colocation Providers Offer?

- A private or public IaaS solution hosted directly by the colocation provider
  - In this case, the colocation provider has implemented its own IaaS cloud solution, often based on VMware or OpenStack technology, and provides the service as an optional additional service to the colocation. This is commonly offered by smaller regional and local colocation companies that cater to small or midsize businesses, as well as by those carriers with a broad portfolio targeting the largest enterprises.
- Direct connection to a third-party private cloud solution or hosting environment hosted within the facility

    - In this case, the private cloud provider or hosting provider is also a colocation customer, and the colocation provider enables a direct connection between the enterprise and service offering. This is more common in the largest retail colocation providers and some wholesale providers, which initially may have offered space to the hosting providers with no expectations of hybrid configurations.

- Direct connection to a public cloud IaaS provider, with assets located within the facility
    - This option is often referred to as a "direct connect" or an "onramp," and it consists of a fiber connection from the customer router to cloud provider router and assets. Much as colocation providers have provided interconnection between tenants and carriers, or between tenants in a specific vertical industry, such as financial services, this is simply interconnection between tenants and public cloud providers, which are also tenants. This allows higher-speed, lowest-latency connections from colocated assets directly to "the cloud," while avoiding any Internet transit, and it is growing in popularity as a means to connect with Amazon Web Services (AWS) and Microsoft Azure.
- Direct connection to a SaaS provider, with assets located within the facility or via a network connection
    - This emerging option allows direct connection via fiber between the colocated assets of the SaaS provider and an enterprise in the same facility.
- Connection to a carrier-based cloud onramp
    - This option allows for colocated assets to be interconnected with a carrier-based network-to-cloud connection, such as AT&T's NetBond.

Upcoming research will detail these options further.

What Are the First Key Questions to Ask?

- "Does my colocation implementation need to be done in concert with a cloud strategy, and if so, what do I need to know?"
- "What is my enterprise cloud strategy and roadmap?"
- "How do I assess colocation providers in light of a longer-term cloud strategy?"

What Information Do We Need to Plan Properly?

From a high level, the planner needs to know the enterprise's:

- Cloud stance
- General architectural plans for cloud
- Likelihood of involving colocated applications in a hybrid cloud model

What Happens If We Do This Wrong?

Colocation cloud-enabling services vary widely in breadth and capability, covering a continuum of use cases, as highlighted above. **If the offering cloud model is not in line with the enterprise cloud goals, colocation with that provider is somewhat of a trap**. The lack of proper available solutions may strand the colocated applications, wasting time and money, and holding the business back from achieving its goals. Unlike cloud contracts, with the expectation of "pay as you go" and little long-term commitment, colocation contracts are often written for three to five years or longer; a mismatch can cause a significant delay in pursuing an optimal hybrid implementation.

In this document, we introduce a framework and process to dig deeper and build some context for making a decision. In upcoming research, we will provide a Toolkit that discusses colocation cloud offering types, as well as attributes to analyze their capabilities and fit.

Analysis

Determine If the Applications in the Colocation Deployment Are Likely to Be Elements in a Hybrid Cloud Strategy Over the Next Three to Five Years

The first key consideration is not whether the enterprise as a whole may deploy hybrid applications, but whether the applications being deployed in the colocation center themselves are expected to be included in a hybrid implementation over the planning period. In other words, if the applications being colocated have no cloud interactions that are foreseeable or likely, the colocation provider's cloud stance isn't particularly relevant.

Document Current Enterprise Cloud Plans, Including SaaS, PaaS and IaaS, and Any Requirements for Hybrid Connectivity to Proposed Colocated Applications and Data

What is the enterprise's cloud strategy? What are the elements? Do any of them depend on or impact hybrid colocation cloud designs? What we are primarily concerned about in a colocation cloud configuration are IaaS implementations, unless the SaaS provider supports some type of direct connection, such as Microsoft's recently announced Office 365 ExpressRoute.

Determine Whether the Colocation Effort or the Cloud Effort Is Leading the Pool of Options

In forecasting the enterprise's needs, it is important to understand whether the likely solution is **composed of colocation with some need for dynamic infrastructure, or if it is a strategic public IaaS plan that will be connected with colocation-based resources.** For example, if a solution is already predicated on Amazon AWS or Microsoft Azure, and the solution calls for connection to a colocated asset, it may be prudent to narrow the pool of potential providers down to those that offer direct connection, or even just those providers that implement hybrid solutions on a regular basis. If the solution is centered on colocated applications, with a generic desire for elasticity and scalability in the future, then IaaS offered by the colocation provider may suffice.

Determine Whether These Cloud Plans Depend on Private or Public Cloud Deployment

While some colocation providers may offer options for public or private cloud, many currently tend to focus on one approach over the other.

Map the Planned Cloud Requirements to the Capabilities of the Proposed Colocation Providers

How you implement the four recommendations above will go a long way to narrowing down the likely colocation candidates that can support the types of cloud enablement we outlined at the beginning of this document. In many cases, a firm need for hybrid solutions may not have been established, but it is prudent to make colocation decisions with an eye toward future possibilities. We urge planners to include a specific RFI/RFP section focusing on cloud-enablement capabilities when issuing an RFI/RFP.

Gartner Recommended Reading

Some documents may not be available as part of your current Gartner subscription.

"Use Colocation Networking to Provide New Connectivity Paradigms and Drive Business Transformation"

"Critical Capabilities for Public Cloud Infrastructure as a Service"

"Toolkit: Comparison Matrix for Cloud Infrastructure-as-a-Service Providers, 2014"

"Toolkit: Preparing Colocation RFPs and Comparing RFP Responses"

Note 1 Just What Is Hybrid?

Gartner defines hybrid cloud computing as the coordinated use of cloud services across isolation and provider boundaries among public, private and community service providers, or between internal and external cloud services.

What Is a Hybrid Application?

An application can derive the benefit of cloud's elasticity, scalability and agility, without necessarily mandating the presence of both public and private clouds. For example, an application that uses on-premises or colocated data and application elements in conjunction with a public cloud front end may exploit the unique benefits of both environments, but not be truly "hybrid cloud computing."

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