

WHAT CIOs NEED TO KNOW TO CAPITALIZE ON **HYBRID CLOUD**





DAVID GOULDEN, CEO
EMC INFORMATION INFRASTRUCTURE

A CONVERSATION WITH DAVID GOULDEN

Hybrid clouds are rapidly coming of age as the platforms for managing the extended computing environments of innovative enterprises.

To explore the business opportunities and technological capabilities, we discussed hybrid cloud with David Goulden, CEO of EMC Information Infrastructure. David has 30 years of technology industry experience, and at EMC his roles have included leading new business development and worldwide customer operations, as well as serving as CFO.

Let's start with the basics — what is a “hybrid cloud”?

DG: A hybrid cloud incorporates — not just bridges between — public and private clouds. It incorporates public clouds for access to a wide array of applications and services, and private clouds for reliable performance and security for critical business applications. Hybrid cloud brings together the best of both worlds by enabling businesses and their IT organizations unprecedented flexibility in where they host their many and varied workloads. It also increases business agility — the flexibility to use a variety of services, the scalability to keep pace with business volume, the efficiency to keep costs to a minimum, and, of course, the ability to protect data and other technology assets.

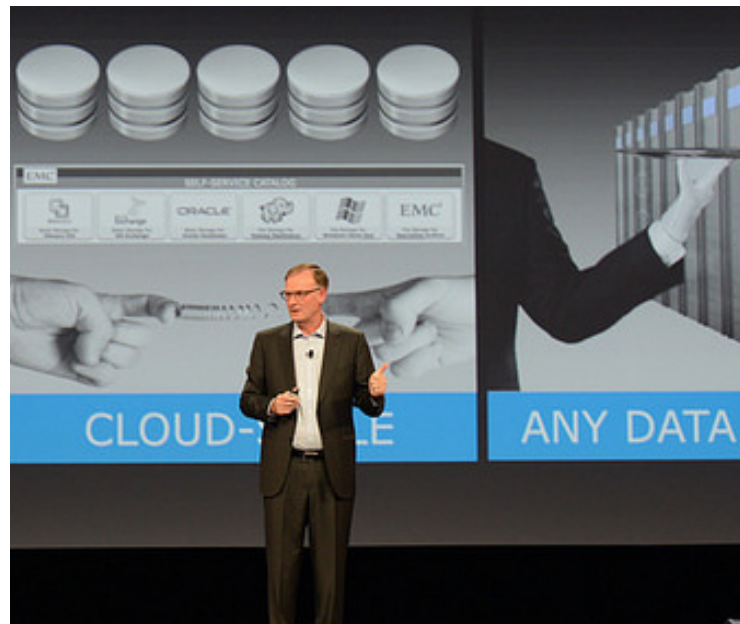
Here's a more rigorous definition: hybrid cloud is an integrated, automated, scalable and secure platform for provisioning and consuming business applications, datasets and other technology services that originate either inside or outside an enterprise. Now, that's not yet the universal definition of hybrid cloud, mainly because it sets a standard that can be difficult to meet. But we've put a lot of effort into implementations based on that definition because that's the capability businesses need today. No contemporary corporation should settle for less.

Please say more about the business drivers behind hybrid cloud and why it's so important to businesses today.

DG: The main business driver is the imperative to participate effectively in a highly mobile, networked and data-intensive marketplace. Things were simpler — but not as productive — when the focus was on enterprise systems, the enterprise supplied the technology, and IT did most of the work. But today we have a wide array of mobile devices running a wider array of consumer-oriented applications. Businesses are tapping new data sources, including both structured data from sensors and unstructured data from social media. They're relying more on agile and automated technology services, many of them cloud-based and self-service. And IT has to build and manage more market-facing applications.

You can't draw a clean boundary around enterprise computing anymore. Businesses need the platform to encompass all those external resources, and they often need the old world of enterprise applications and databases to work together with the new world of mobile, social media and big data. Hybrid cloud makes that happen seamlessly and securely.

“HYBRID CLOUD IS THE BEST PLATFORM FOR DRIVING BUSINESS INNOVATION AND COMPETITIVE ADVANTAGE.”



Most traditional business activities have been standardized, commoditized and automated with software packages. Businesses today are connecting with customers in new ways, and people inside and outside the enterprise are collaborating on new business solutions. Innovation is happening at the intersections with the marketplace, and hybrid cloud is the best platform for driving business innovation and competitive advantage.

Many CIOs are trying to transform their delivery models to provide “IT as a Service.” How does hybrid cloud enable that transition?

DG: Everyone’s familiar with the concept of IT as a Service (ITaaS), even though not many organizations have become thoroughly services-based. With ITaaS, the outputs of IT that are visible to and consumed by the business are structured as clearly defined and easily managed services. Examples would include everything from processing customer orders to onboarding new employees to backup and recovery of business applications. ITaaS entails major changes on both sides of the ledger:

- **PROVISIONING.** A growing number of services are sourced from or performed by third parties. From the business standpoint, a service is a service regardless of origin. So in addition to restructuring its own offerings, IT has to play the role of services broker on behalf of the business, present an integrated catalog of inside and outside service offerings, and manage that diverse services set.
- **CONSUMING.** ITaaS also drives new roles and responsibilities on the business side: help define services and set service levels, access them directly via self-service, monitor and manage consumption levels, and in many cases pay according to actual consumption. This more direct business involvement in the consumption process is good all around for managing performance, capacity and cost.

As I already suggested, hybrid cloud is the best platform for provisioning an ever-changing mix of internal and external services. With hybrid cloud, you have flexibility in sourcing services, scalability to adjust to changing business demand, the customer experience of a browser-type interface, and the transparency into usage that’s essential for managing consumption and automated billing. It’s the best fit for ITaaS.

What’s in it for the IT organization? What are some of the advantages of hybrid cloud for IT operations and management?

DG: Hybrid cloud gives IT much greater flexibility to determine where to run individual workloads including applications and services — in-house, with service providers, or in the public cloud. That in turn makes it much easier to “replatform” applications by migrating them to more current and robust technology.

Hybrid cloud also provides IT with a richer set of automated monitoring and management tools for a better integrated computing environment. With mundane tasks automated and management simplified, IT is better able to control and optimize the platform while improving infrastructure performance and cost.

Back to ITaaS for a moment: hybrid cloud makes it easier for IT to provision and manage business services. Some services may be primarily for IT, such as the rapid and on-demand spin-up of test-and-development environments. So IT benefits as a consumer of services as well.

It's no secret that security concerns have been the number-one barrier to using public cloud services and hybrid clouds for enterprise applications. How do you address those concerns?

DG: IT security is an area of extraordinary innovation and transformation these days. I like to start the discussion with three realities:

1. Mobile devices, social media and big data all increase demands on security. Yet they're part of the extended environment and here to stay.
2. Traditional perimeter defenses must be redefined and supplemented to have any chance against the growing onslaught of cyber-intrusions. You can't build a hard shell around the enterprise when your employees and customers can be anywhere anytime.
3. Securing sensitive business assets in the public cloud has turned out to be a serious pain point. You have to negotiate how to map and recreate your security apparatus to fit into an external service-level agreement. It's laborious and the results have not inspired confidence. Companies lose data and transactions in public cloud failures. Public cloud security issues have limited the business flexibility that cloud is meant to deliver.

“WE’VE BROUGHT BOTH THE TECHNOLOGIES AND THE IMPLEMENTATION PROCESS TO THE POINT WHERE A HYBRID CLOUD CAN BE DEPLOYED WITH SURPRISING SPEED AND EASE.”



Given those realities, enterprises need more attentive and adaptive approaches to security. We see hybrid cloud as an important part of the solution. Hybrid cloud enables enterprises to leverage public cloud services while maintaining the trust of their customers and ensuring consistent enforcement of security policies and compliance with regulations.

EMC's implementation of hybrid cloud uses technology from VMware vCloud® Suite to automate the porting of existing enterprise security mechanisms to public cloud. We do the legwork so the customer can proceed with confidence. Internal enterprise security mechanisms like encryption and auditing remain in place, and management tools implement policy as well as monitor and control operations. Hybrid cloud can be a big step up for security capabilities in most companies.

If scalability and flexibility are key characteristics of hybrid cloud, it must have roles to play in big data and analytics. What's your perspective?

DG: One of the immediate and significant opportunities relates back to security. An added dimension to security today is real-time analysis of what's happening across all of an enterprise's networks. No one can prevent all intrusions, so it is increasingly vital to detect attacks and reduce their "dwell time." Data analytics help recognize anomalies quickly, isolate problems, and take remedial actions. This is analogous to the non-stop, high-volume fraud detection applications used by credit card companies. It requires assembling, scanning and analyzing vast quantities of granular and diverse data. Security has become a big data problem. Hybrid cloud can provide a scalable, efficient and manageable platform for these new "data lakes" for security analysis.

More generally, hybrid cloud can provide companies with a more capable and expandable platform for big data: accessing more external data sources, gathering more data together for analysis, doing high-volume and compute-intensive analytics processing, and incorporating any big data and analytics appliances in use. When getting started with big data, many enterprises look to public cloud services whose extreme scale minimizes cost. Hybrid cloud incorporates that option while making it easier and more secure to work on internal and external data together.

“HYBRID CLOUD SHOULD BE PART OF THE BUSINESS DISCUSSION TODAY AND THE BUSINESS CAPABILITY TOMORROW. THE CIO SHOULD BE LEADING THAT DISCUSSION.”



People tend to assume that a hybrid cloud must be complex, difficult and time-consuming to configure. How long does it really take to stand up a hybrid cloud?

DG: We like to practice what we preach, so as a demonstration at EMC World we configured a hybrid cloud from scratch. We started with converged infrastructure — three Vblocks™ from VCE that integrate computing, storage and networking. We used VMware vCloud® Automation Center™ to enable self-provisioning of on-premise or off-premise resources, including cloud service providers. We deployed a variety of workloads, as well as essential data services like backup and recovery. It took two days.

A realistic estimate for a business with a strong foundation and up-front planning would be more like a week. What constitutes a strong foundation? A high level of virtualization, strong connectivity standards, and experience with private cloud. But the number-one accelerator is converged infrastructure, where the basic components are already integrated, tested and automated, yet still modular and scalable. If I were building or rebuilding a data center today, converged infrastructure and hybrid cloud architecture would be the only way to go.

While we recommend using Vblock for hybrid cloud, EMC supports it on other infrastructures as well, including the customer's servers and other network equipment and storage arrays from EMC and its partner providers. Either way, we've brought both the technologies and the implementation process to the point where a hybrid cloud can be deployed with surprising speed and ease.

What are the key insights that CIOs should keep in mind about hybrid cloud?

DG: Not to put too sharp an edge on it, but if CIOs and their IT organizations want to maintain their business relevance — and be in position to expand their business contribution — they must do the things we've been discussing. Leverage mobile and social and new technologies and services for business innovation and advantage. Complete the shift to a services-based provisioning and consumption model. Enable the business to put big data and analytics to work. Maintain security and business continuity in an extended-platform world. And, of course, manage a high-performing infrastructure at reasonable cost. All those roads lead to hybrid cloud and with it greater business agility.

CIOs know that their most important role isn't provisioning and running the computing environment, essential as those activities are. It's to encourage and enable the business to use technology strategically. That includes both implementing business strategy and formulating it in the first place. The capabilities of hybrid cloud create new strategic options for businesses. Hybrid cloud should be part of the business discussion today and the business capability tomorrow. The CIO should be leading that discussion.

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