# OPTIMIZING YOUR NETWORK FOR THE HYBRID CLOUD TRANSITION

At a recent symposium in Orlando Florida, Gartner declared, "The data center is not the center of the world anymore." This declaration was part of a presentation in which Gartner described their vision of the Top Technology Trends of 2016 and their impact on the coming year. The top ranked technology trend—The Disappearing Data Center. "IT shops are realizing that as we move more work off-premise, it makes the job more complex," said David Cappuccio, the Gartner analyst who develops the research firm's annual list.

Anyone who has managed the transition of relocating a data center knows firsthand the planning and organization that is required for such an enormous endeavor. The conversionary process from an on premise environment to a hybrid model demands the same level of preparation to ensure a successful implementation. The location of your company's resources is irrelevant to your users so if resources aren't available for your end users, then it is your local network that will be blamed.

Surveys have shown that 70% of organizations admit to changing their network infrastructure to support the cloud. No matter how optimal your local data center performs, it is not inherently designed for the cloud. Therefore, it is important to have a thorough understanding of the preliminary steps that are required to see this transition through.

BANDWIDTH AND WAN OPTIMIZATION

The most important thing to remember is that the cloud is merely an extension of your existing network. Users will expect the same level of access and performance they have come grown accustomed within the local network. Issues such as latency, congestion and downtime are as important as ever.
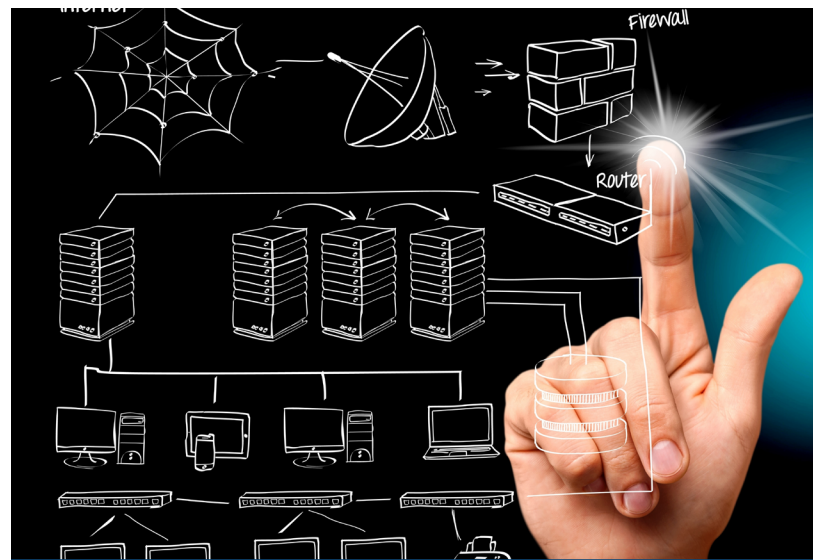
Anyone who has managed the transition of relocating a data center knows firsthand the planning and organization that is required for such an enormous endeavor.

However if you plan on accessing your cloud extension, you need to upgrade your WAN's pipe. Even if you currently can't take full advantage of it, a 10 GB connection should be implemented between your data center and your cloud provider. This requires that any switches, web content

filters and firewalls must have 10 GB interfaces in order to accommodate this level of bandwidth.

Many organizations choose to utilize their public Internet service to access their cloud resources. Although this is a popular choice from both a cost perspective and design simplicity, it isn't the most reliable, secure or efficient option. A public Internet connection is in fact, public, inferring that data transfers will have to compete with the traffic of others, which conjures up security concerns for any confidential data that is regularly transferred.

It is for this reason that some organizations choose to utilize a direct connection between themselves and a cloud provider. These direct connections are typically provided by a telecommunications provider. Many of the major cloud providers such as Amazon Web Services, Microsoft Azure and VMware already offer these types of private connections through a partnership with a national provider. Another option is an Internet Exchange Point, a high-speed link between the two independent networks. Redundancy should always be considered in any network topology and the hybrid cloud is no different. Whether you choose to connect to your cloud resources through your ISP's connection or a dedicated connection, you should establish a second connection as well. Your cloud provider may also provide a VPN connection that can be utilized as a backup link in case of failure.

VIRTUAL FABRIC INFRASTRUCTURE

Whether you are hosting servers in the cloud for resource load balancing, burst computing, application hosting or disaster recovery, you will be working with virtual environments. You should already have a virtual private cloud on premise and if at all possible, you should choose a cloud provider that supports similar virtual configuration types in order to make the migration and management processes as smooth as possible. You should also utilize a Hypervisor Management console to manage all of your

servers at all locations from a single pane of glass. You can then group and manage your computer resources by location and create host groups to manage workloads with similar workload, resource, and service quality requirements.

STORAGE MANAGEMENT

Nothing is more critical than your data. It is imperative to decide which types of data will remain on premise and which will reside in the cloud. This means that you will need to go about the cumbersome but necessary step of classifying your data. Confidential data should not be hosted in a multi-tenant environment and some data may have to stay on premise regardless due to compliancy regulations.

Latency is a big factor in designing storage architecture within a hybrid environment. Data that must be accessed both publicly and internally means that potential large data volumes may incur transfer delays. To prevent this, a series of WAN optimization tools may be required such as:

- **Caching** – This operates in the same manner as a proxy server in which large files such as images and videos are cached on premise in order to be delivered locally and save bandwidth. You can also utilize a smart storage gateway appliance which will retain frequently accessed files locally while keeping less utilized data in the cloud. As demand for this data changes over time, so will the storage location.

- **Deduplication** – If you are utilizing a hybrid cloud for your backups and disaster recovery, deduplication will remove a great deal of unnecessary traffic during the backup process. It does this by performing only a single full backup of a file and then processing only the modified portions of that file over time.

- **Compression** – This reduces the bandwidth demands of your data transfers by utilizing a number of techniques to reduce the size of your files, even removing unnecessary portions of designated files.

USER MANAGEMENT AND AUTHENTICATION

If you are utilizing a hybrid cloud model, chances are you are managing your user database such as active directory on premise while retaining a copy in the cloud. This will require a server to manage the synchronization process in order to modify user objects and change passwords in the cloud. You should have some type of password write back so users can modify their passwords in the cloud when they are off-site.

If you are hosting applications and resources in the public cloud, you will need some sort of Identity Management and Access management system to allow users to use the same identification data to obtain access to the networks of all enterprises in the hybrid conglomerate. A classic example of this is Active Directory Federated Services or ADFS. Another option that is quickly growing in popularity is Identity Management as a Service or IDaaS which provides authentication and access controls as well as Single Sign-on (SSO) capabilities so that users can carry their password across multiple networks and resources.

SUMMARY

As its name indicates, 'hybrid' denotes the merging of two or more standards, in this case the traditional standard of the cloud and the new standards being defined by the cloud. Proper planning and the implementation of the necessary equipment and tools will make your hybrid cloud perform as efficiently as a single geographical network.

TALK TO WEI TODAY

The cloud experts at WEI have the experience and certifications to help guide your hybrid cloud strategy, design, and implementation. Contact us today to get started.

ABOUT WEI

WEI is an innovative, full service, customer centric IT solutions provider.

Why WEI? Because we care. *Because we go further.*

At WEI, we're passionate about solving your technology problems and helping you drive your desired business outcomes. We believe in challenging the status quo and thinking differently. There are a lot of companies that can take today's technology and create a great IT solution for you. But we do more. We go further. And we have the customer, vendor and industry awards to prove it. WEI is a premier technology partner, who always puts our customers first while providing the most innovative solutions for over 25 years.