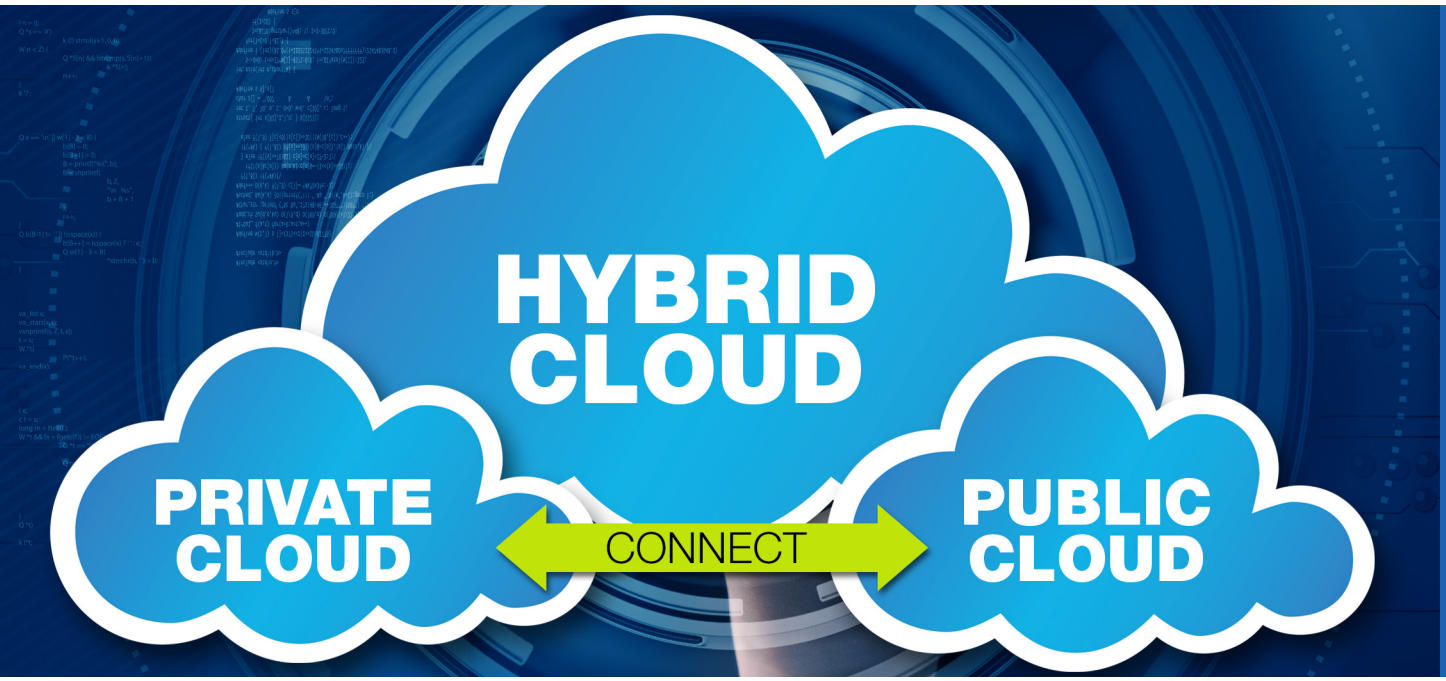
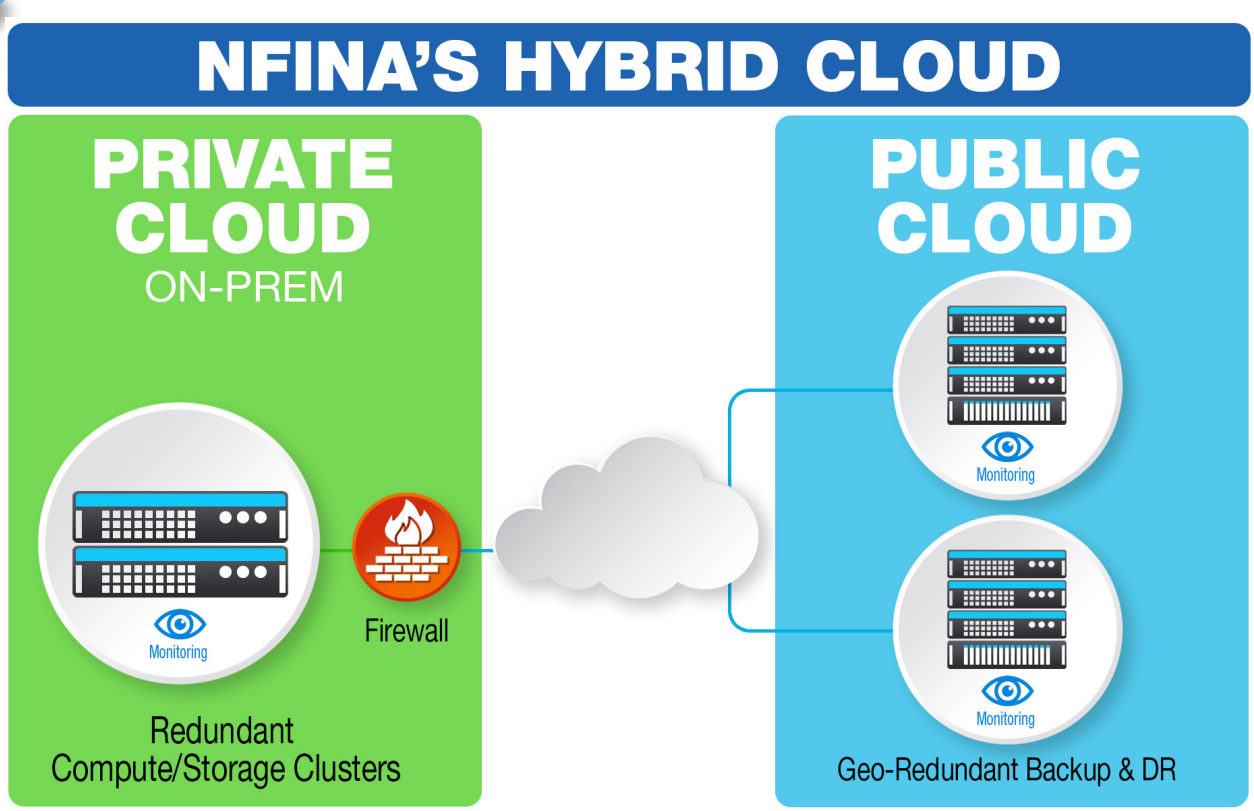
WHAT IS HYBRID CLOUD?



Hybrid Cloud is a cloud computing solution as a service that consists of:

1. A private cloud that resides on-prem, colocation and/or at the edge.
2. A public cloud that resides in a different geographic location (creating geo-redundancy)
3. An orchestration and administrative application that manages workloads between the private and public clouds, for ease of use from a single dashboard.

n-fina HYBRID CLOUD SOLUTIONS



The Nfina Hybrid Cloud example: compute and storage cluster replicating to public facing cloud.

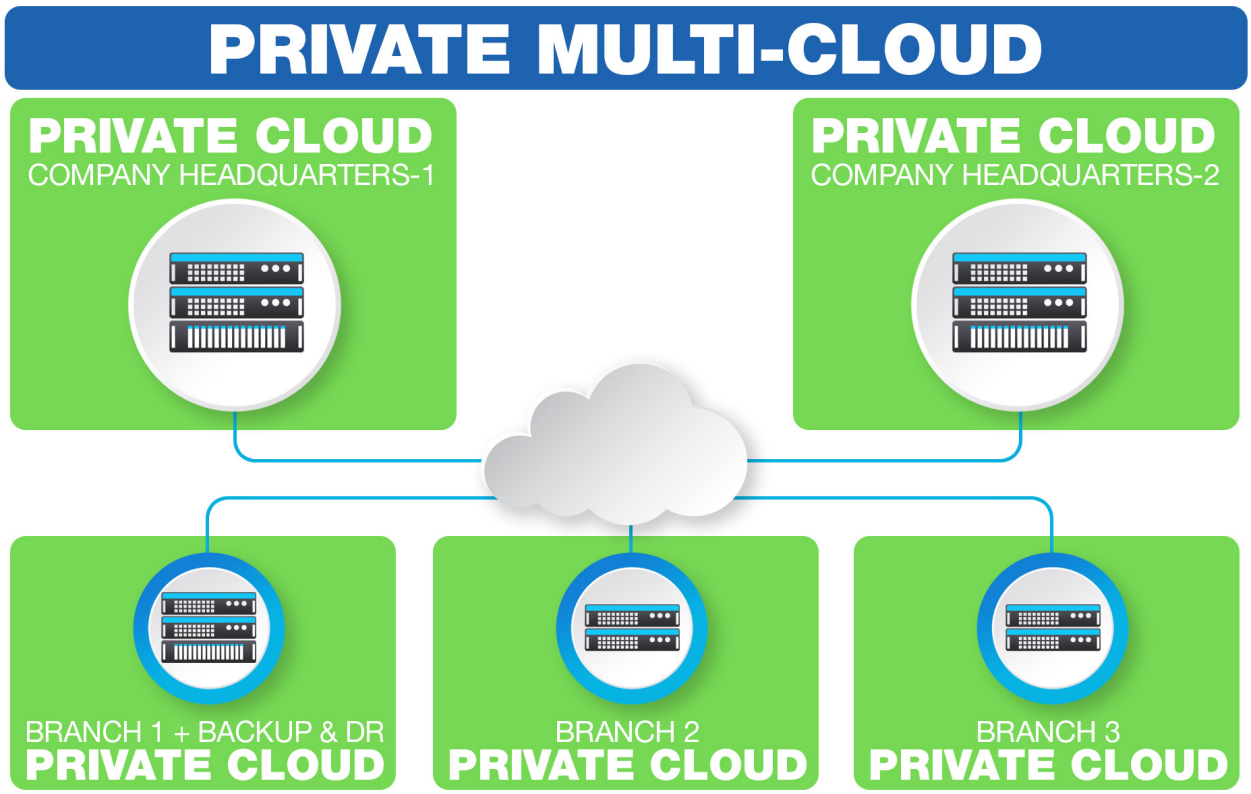
WHAT ARE THE BENEFITS OF THE HYBRID CLOUD?

There are many benefits of the Hybrid Cloud over traditional Cloud Computing or stand-alone private cloud. These include:

1. **Workload agility:**
   a. Allows for *Seamless Migration* between sites as the business needs change.
   b. *Incremental Migration and Application Modernization* allow you to move to the cloud at your pace.
   c. *Geographic Redundancy* is built into the architecture.
   d. *Higher Performance* allows you to put the apps requiring lower latency in the private cloud.
   e. *Cost Savings* allows the user to shift workloads to the most cost-effective site.
   f. *Scalability* allows for rapid cloud expansion if necessary.
2. **Security** - Allows for multiple copies in geo-redundant locations. It also allows well-vetted cybersecurity solutions to be hosted on-premise as required for very sensitive data and certain regulated industries.
3. **Data Protection and Disaster Recovery** - Most Hybrid Cloud implementations will include geo-redundant data backup and disaster recovery options however geo-redundant computing options vary by vendor. Immutable snapshots ensure ransomware protection.

IS HYBRID CLOUD THE SAME AS MULTI-CLOUD?

They are closely related but not exactly the same. Hybrid Cloud, by definition, has a shared public-facing cloud component. Multi-Cloud can include public cloud but usually refers to multiple private clouds (shown below) operating together to form a distributed IT Ecosystem that can orchestrate the benefits of Hybrid Cloud but done privately. It is highly desirable for users to have the same orchestration application capable of managing both Multi-Cloud and Hybrid Cloud implementations. A Multi-Cloud implementation may be preferred by some users, especially if they have multiple edge campuses that can't afford downtime. Perhaps the best of both worlds is the Private Multi-Cloud solution show below.



WHAT IS HYPERSCALE CLOUD?

Hyperscale cloud is a form of public cloud that has been designed using object-oriented storage that can scale geo-redundantly (horizontally) and dynamically based on-demand. This scale on demand feature is known as Elasticity. Elasticity uses docker containers (app and services bundled in a lightweight manner along with their dependencies and configuration) and Kubernetes (orchestration software designed to manage those containers and when and where they run). While this feature can reduce the expense of Enterprise or SaaS web hosting when the demand is very high (say millions of geographically diverse users), most small and mid-sized business infrastructures won't need this capability. Therefore, even the experts agree that not everyone belongs in the public Hyperscale Cloud. If users have a fixed-sized infrastructure with a limited number of users, they will be paying for features they will never use or need in the hyperscale cloud implementations. Examples of Hyperscale cloud implementation include Azure, AWS, and Google clouds.

MIGRATION VIA SNAPSHOTS

There are migration factors to consider when choosing a Hybrid Cloud or Multi-Cloud Vendor. Since workload agility is paramount, it must be easy and fast to move between on-site and off-site environments. Snapshot technology that can flow both ways (between public and private clouds) is required to ensure performance and re-synchronization are not impacted. Users don't want to use traditional backup and restore functionality because snapshots should run frequently and be non-intrusive on the production computing. Furthermore, the snapshot technology used should be immutable (read-only) and encrypted (for cybersecurity reasons).

HARDWARE

When thinking about the cloud, users aren't particularly thinking about the underlying hardware, firmware, and updates. That's someone else's problem, right? Not necessarily. In today's Cybersecurity target-rich environments, security updates are essential. Keeping firmware and drivers up to date with changes to the OS, hard drives, Motherboard, BIOS, PCIe boards, adapters, firewalls, switches, RAID Cards, Network Adapters, etc., can be a daunting task if you are not an OEM or a Computer Engineer. These issues come into play when considering Hybrid Cloud and Multi-Cloud solutions.

NFINA'S HYBRID CLOUD AND MULTI-CLOUD OFFERINGS

Nfina offers both Hybrid Cloud and private Multi-Cloud solutions, as well as a white glove turnkey implementation that includes: rack and stack, setup, validation, migration, and support, patch management, and remediation for the duration of the contract. Since Nfina is an OEM, our world-class support staff will keep our Private Cloud and Public Cloud offerings running the latest firmware and Cyber-Security patches.

All Nfina public and private multi-cloud solutions support immutable snapshots for ultimate data protection from cybersecurity attacks, e.g. Ransomware.

The Nfina-View™ software is a SaaS orchestration application included in the solution that facilitates seamless management and migration of virtual computing environments for both Hybrid-Cloud and Multi-Cloud implementations. Nfina offers both private cloud and public cloud solutions that can provide significant savings for customers that don't want to pay the premium of the Hyperscale Cloud.

More information is available at: https://nfina.com/solutions/nfina-hybrid-cloud/

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