NetAbstraction

If they can't find you, they can't attack you!™

NetAssured – Stay connected in the event of a cyber incident or natural disaster

EXECUTIVE SUMMARY – THE PROBLEM WE SOLVE

Enterprise level cyber-attacks continue to increase dramatically and natural disaster can happen at any time. In today's fast-paced, connected environment, it is essential for executives and business units to be prepared to respond and quickly recover critical business functions. Beyond protecting their systems, business executives must communicate securely as they investigate, remediate and continue operations during cyber incidents, natural disasters or other unexpected business disruptions.

Regulated industries and US Government have a clear and growing need for protected, out-of-band communications. The financial services industy has a new and urgent regulatory requirement for banks to re-establish critical business funtions within two hours of a cyber incident or crisis event. The White House has also suggested that all critical USG functions and US critical infrastructure have backup communications during emergencies.

NetAbstraction's Enterprise Emergency Communications Network solution, NetAssured, builds upon our flagship offering, NetAbstraction, to provide unique and patented methods for protecting your systems and helping you stay connected during any emergency situation. With NetAssured your organization's communications are safeguarded by our resilient emergency communications network and our customers look to us to outsource the administrative complexity of acquiring and managing their emergency communications and ensure they are properly maintained.

NetAbstraction's NetAssured solution offers unique and patented methods for protecting your systems and helping you stay connected in the event of a cyber incident, major catastrophe or natural disaster.

NETASSURED

When your organization's network and systems are affected during a cyber incident, major catastrophe or natural disaster it is essential to move critical communications away from your compromised infrastructure and services to continue operations. Specific capabilities include:

Acquisition of IT Infrastructure & Services
Discreet acquisition of domestic and global IT Infrastructure and services to include: Virtual Private Servers, Bandwidth, Cloud Hosting, Phone Services, Email, Text, Chat and File Sharing.

Access Management & Mobile Support
Ensure your key personnel have access to uncompromised communications capabilities. Support for multiple connection methods to include mobile devices.

Equipment & Procurement Support
Equipment and procurement support to meet customer requirements. We can assist your organization with any procurement actions to provide you with resilient capabilities on an end-to-end basis.

Identity Protected Communications
NetAssured utilizes our patented NetAbstraction service to obscure and vary your organization's network. We disguise and protect your identity, location, and provide additional security protections so you can communicate with confidence.

KEY DIFFERENTIATORS

* ❋ Highly resilient, completely out-of-band communications network so you can stay connected even if your infrastructure is unavailable or compromised
* ❋ Leverages tier 1 service provider first-responder networks so that communications are always available even during crisis events
* ❋ Highly scalable — surge from supporting small teams to thousands of users effortlessly

NetAssured is unique in the following areas:

* ❋ Provides highly redundant, high availability private network with mobile acces and global reach
* ❋ Scalable architecture to support large surge operations
* ❋ Leverages NetAbstraction shared service and dedicated infrastructure to compartment user communications activities
* ❋ Extensive operational protections and identity management tradecraft
* ❋ Superior network performance, industry application and domain expertise

NETABSTRACTION INTRODUCTION

Cloud computing is the latest phase of information technology innovation. It is an evolution that provides infrastructure, software, and communication networks as a service.   Cloud computing changes the dynamic of static, user-owned, technology into a metered use and outsourced model. Commercial cloud providers provide shared, low cost, and technologically evolving capabilities on a "pay as you go" basis. Most consumers, including the U.S. Government, are attracted to this cost effective, state of the art capability that can flexibly evolve as technology continues to advance.

The primary impediment to migration to the cloud has been the concern over security. Most organizations have requirements to protect their most sensitive, mission-critical data through the implementation of isolated enclaves that have gone through rigorous security review processes and are then placed completely within their control.

NetAbstraction's patented network design is unique in the market place. Based on the philosophy: *"if they can't find you, they can't attack you™"*, NetAbstraction lowers your cyber attack profile and traceability.

As a cloud-based Privacy as a Service offering, NetAbstraction's focus is on protecting your physical network and communications infrastructure, keeping you safe from threats that arise from using commercial network providers (the information grid or "Internet"). NetAbstraction provides a secure, dispersed, Software Defined Network (SDN) on top of commercial provider's infrastructure. This shields you from vulnerablities within commercial infrastructure, making the NetAbstraction network impenetrable to malicious actors. And NetAbstraction does all of this while meeting or exceeding carrier-class performance.

NetAbstraction's extensive expertise is rooted within the Intellgence Community. Our backgrounds are in: offensive and defensive cyber; protection of user identities; and innovative engineering, implementing networks to support clandestine communications. Building from a deep understanding of the current state-of-the-art technologies, we innovate and provide the next generation of privacy, identity protection, and security capabilities.

We understand, first hand, the challenges our customers face when meeting today's cyber and privacy needs.

NETABSTRACTION OVERVIEW

NetAbstraction is a carrier class Privacy as a Service that protects your identity and provides additional security for your communications on the Internet. NetAbstraction's patented design obscures and varies network pathways while protecting

customer identities and systems via implementation of SDN virtualization across multiple cloud providers. NetAbstraction provides secure, varied, and non-apparent network connectivity, a range of identity management and persona attribution options to alter or reduce the cyber attack profile, and system designs to help control customer information held within commercial cloud provider databases. In addition, NetAbstraction augments the multi-layered security capabilities provided by the commercial cloud providers, to include implementing dynamic security policies to help ensure that malicious traffic is not allowed to enter the network.

Some specific benefits provided by the NetAbstraction network implementation:

- We disguise your network communications pathways – if they can't find you, they can't target you!

- We dynamically shift your network – it is hard to identify or hit a moving target. We shift our customers' communications on a regular basis or dynamically in response to a perceived cyber threat.

- We use a new tunneling protocol that is misidentified as normal TCP traffic, enabling the tunnels to hide, (become lost), within the traffic of the commercial provider networks.

- We use multiple providers/technologies and geographic locations to disperse and layer your points of possible attack.

- By controlling the routing through our network, we are able to protect our customer's identity and location, optimize the path and improve overall performance.

- We protect your identity by providing alternate subscriber information, which is exposed in commercial providers' databases.

- We logically isolate each customers' communications on top of our physical infrastructure, hiding the customer network topology from any external scrutiny.

- By creating a virtualized network, we decouple the logical network from the commercial provider's physical network. The logical decoupling of virtual servers from the physical network reduces the opportunity for attackers to reach resources connected to the network. It also isolates the logical network from vulnerabilities inherent in the physical network infrastructure.

- We regularly rotate and exchange the infrastructure that we use to establish our physical infrastructure.

NetAbstraction Overview
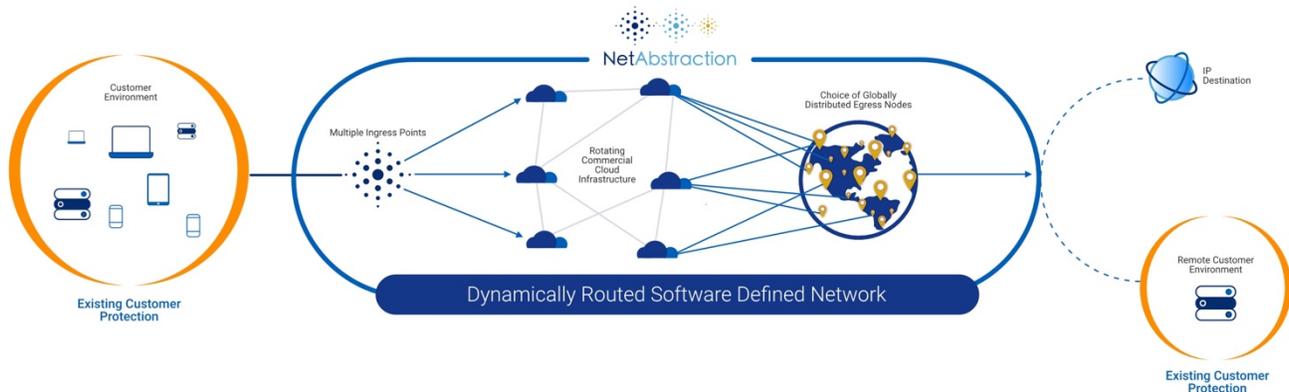
Cloud infrastructure is acquired using identity management domain expertise NetAbstraction leadership gained through our background in the Intelligence Community. We are cloud agnostic and always implement our network communications pathways across at least two different cloud provider networks.

We add an additional layer of virtualization in the acquired infrastructure using containers. We then deploy the components of our SDN software to create the Software Defined Network Layer 2 overlay across the commercial providers' Layer 3 fabric.

We automate the tunneling and provisioning of the network to dynamically shift and adjust communications pathways on the fly, in real-time, without impacting our customer's communications.

Our patented ability to control the network routing protects our customers' identities and locations, enhances performance, and creates isolated channels of communications.

The NetAbstraction network is based on VMware's NSX product is a distributed software suite that creates scalable, fully featured, virtual networks that are completely decoupled and independent from the physical network.

Security Features

NetAbstraction augments the security capabilities of commercial cloud providers by:

- Dynamically shifting the network on the fly, without impacting our customer's communications;

- Rotating and replacing the commercial cloud infrastructure and identities on a frequent basis;

- Implementing independently controlled end-to-end logically separated tunnels for each of our customers as well as end-to-end encryption, as required;

- Adding an additional layer of virtualization within the commercial cloud providers' infrastructure to provide an independent layer of protection for our servers;

- Use of a new tunneling protocol that is misidentified as normal TCP traffic enabling the tunnels to hide, (become lost), within the traffic of the commercial provider networks.

- Implementing SDN virtualization to decouple the logical network from the physical network. Advantages include:

  - SDN allows us to efficiently manage the complexity of establishing and maintaining the network supporting the NetAbstraction service. Our patented design establishes a logical Layer 2 network across the physical infrastructure and the ability to quickly (in real time) shift the network to mitigate any threats.

  - The logical decoupling of virtual servers from the physical network reduces the opportunity to attack resources connected to the network. It also protects the overall network from exploitation by a malicious actor. Because network virtualization decouples the logical network space from the physical, the actual network topology is also hidden from the end-points. Thus, attack efforts cannot take advantage of weaknesses of the physical network to further attacks, such as overloading a choke point or evade network security devices.

ABOUT US

NetAbstraction, Inc. is an Internet and cyber security firm that offers services that lower your organization's systems "visibility" as a target on the Internet. Our management comes from backgrounds working for the federal government, enabling capabilities to support several Intelligence Community missions.

With substantial experience in offensive cyber operations and in designing, creating, and implementing non-traditional, non-attributable, telecommunications networks, we have a deep understanding of the current state of the art technologies. We are innovating and providing the next generation of privacy and identity protection capabilities while understanding, first hand, the challenges our customers face when meeting today's cyber and privacy needs.

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