



## Cloud Carib

### Cloud Carib Propels Performance, Productivity, and Growth with VMware Virtual SAN Solution

Cloud Carib was rapidly growing its customer base as a cloud service provider (CSP) and was eyeing new markets. The company had to increase storage capacity and performance—but at a lower cost and with less complexity. Continuing to add external storage was unsustainable. When Cloud Carib converted to the VMware Virtual SAN™ solution, the company reined in the costs and complexity of expanding, and accelerated its growth with new services and revenue.

Founded in 2011, Cloud Carib is a privately held offshore cloud solution provider based in Nassau, Bahamas. The company specializes in providing government agencies and financial and professional services companies in the Caribbean and Latin America with solutions that drive innovation and improve efficiency, reliability, and agility. Cloud Carib also offers global data protection unavailable from U.S. hosts. Its two business units—infrastructure virtualization services and cloud computing services—have 30 employees around the world and serve more than 13,000 users.

#### The Challenge

With company revenues doubling annually, Cloud Carib's 15-person IT team had to expand its data center capacity and compute performance without a corresponding increase in costs and complexity.

"Expanding by adding external hybrid storage arrays to our network was not working well," says Stelios Xeroudakis, Cloud Carib founder and managing director. "Each addition was a big hit to our budget and team's productivity. It always meant big increases in CapEx and the OpEx for energy, rack space, and IT staff resources. And despite all those upfront and ongoing expenses, it was difficult to meet service levels because we couldn't predict bottlenecks. Even if we added solid state drive [SSD] arrays, we still couldn't fully integrate the storage with the cloud stack."

The Cloud Carib data center was a traditional SSD and hard disk drive (HDD) storage environment based on NAS and SAN. It included a Juniper EX-Series switch network, Cisco UCS server hardware, a few hundred virtual machines (VMs), and VMware vSphere® 5 and VMware vCloud® Director® 5.1 with VMware vCloud Networking and Security™ that ran a variety of customer workloads.

For Cloud Carib to maintain its competitive position and continue growing, the IT team had to:

- **Increase performance:** IO bottlenecks and "noisy neighbors" caused latency issues and delays in customers' application launch times.
- **Scale capacity:** Limits on the number of VMs that could run on any specific storage system and the inability of the systems to scale storage capacity and performance linearly with compute performance were swelling the data center's footprint.

#### INDUSTRY

IT Professional Services and Cloud Service Provider

#### LOCATION

Nassau, Bahamas

#### KEY CHALLENGES

- Lack of effective capacity scaling
- Inconsistent performance
- Barriers to improve productivity
- Increasing complexity was driving up CapEx and OpEx

#### SOLUTION

Cloud Carib implemented the VMware Virtual SAN Software-Defined Data Center solution to radically simplify its storage and its customers' on-demand access to enterprise-class hosted infrastructure.

#### BUSINESS BENEFITS

- Higher company revenues with improved scalability
- Increased client application performance by 50%
- Reduced upfront CapEx for storage by 65%
- Decreased incremental CapEx for storage by 2-4X
- Reduced deployment cost
- Decreased storage OpEx

**“Our customers are surprised by the speed and responsiveness of their applications. Cloud Carib now has the ability to host any demanding application a customer wants to run.”**

- Stelios Xeroudakis,  
Founder and Managing Director,  
Cloud Carib

## VMWARE FOOTPRINT

- VMware Virtual SAN
- VMware vSphere
- VMware vCloud Director

## APPLICATIONS VIRTUALIZED

- Oracle Database, other databases
- Microsoft SQL Server, Microsoft Exchange Server
- ERP systems, global customer support systems, and many other customer business applications

## PLATFORM

- Cisco UCS C220 M3 servers

## VMWARE PARTNER CERTIFICATIONS

- VMware Enterprise Solution Provider
- VMware Hybrid Cloud Powered
- VMware Infrastructure Virtualization
- VMware Cloud Infrastructure

- **Improve productivity:** Each external storage system required specialized expertise and training for provisioning and ongoing management, and customers' mixed and unpredictable workloads exacerbated the issues.
- **Lower the costs of growth:** Both the CapEx and OpEx needed to decrease.

“These challenges led us to look into hyper-converged storage,” says Xeroudakis.

## The Solution

Cloud Carib considered all-flash storage systems, Xeroudakis says, “but we decided not to invest in a converged infrastructure architecture because we'd already invested in Cisco UCS hardware.”

The IT team also didn't want to inhibit business growth by postponing the adoption of Software-Defined Storage technology. IT staff began evaluating Virtual SAN vendors and collecting feedback from technical peers and Cloud Carib customers. “We also set up a test Virtual SAN cluster with three hosts to test failure scenarios—network failure, host failure, and disk failure,” adds Xeroudakis.

In the end, the top reasons that Cloud Carib chose VMware Virtual SAN were its:

- **High reliability and availability:** “It's software-based hyper-convergence technology from a proven vendor, and passed with flying colors in our tests,” says Xeroudakis.
- **Deep integration with vSphere:** Eliminates the need for extra management software.
- **Optimization of rackspace:** Cloud Carib uses Cisco UCS Ready Nodes as hosts to lower footprint and energy costs
- **Linear, fine-grained scalability:** Adding a single server increases both performance and capacity.
- **Extraordinary customer support:** “When you have an issue, you get rapid, knowledgeable troubleshooting,” says Xeroudakis. “And VMware is the single-source resource. There's no finger-pointing among vendors.”

Additional the top reasons that Cloud Carib chose VMware Virtual SAN were its:

- **Hosts:** Cisco UCS C220 M3 servers; 6 hosts per Virtual SAN cluster
- **SSD and HDD storage in hosts:** Each group comprises 1x 400GB Samsung Enterprise SSD and 3x Seagate 1.2 TB 10K magnetic disks; 2 disk groups per host
- **VMs:** 150-200 per cluster
- **Raw storage per Virtual SAN Cluster:** 43TB
- **Network capacity:** Brocade VCS Fabric with VDX6740T switches
- **Customer applications on the Virtual SAN:** ERP systems, global customer support systems, databases, SQL Servers, etc.

“We now have 100 percent virtualized storage,” says Xeroudakis.

The Cloud Carib IT team did the deployment themselves. “We wanted to develop our ability to advise clients on hyper-converged infrastructure, and gain the expertise and hands-on experience to design and provision VMware Virtual SAN solutions well,” notes Xeroudakis.

“At the outset, Virtual SAN was very new technology for us. But it took just over a week for four of our engineers to install, test, and have our Virtual SAN in full production. Here's a direct comparison of deployment complexity. On a 1 to 10 scale, where 1 is ‘anyone could do it’ and 10 is the most complex: the external hybrid SAN is 8 or 9, and the Virtual SAN is 2 or 3. Essentially, Virtual SAN is as simple as storage can get.”

## Business Results & Benefits

“Virtual SAN is bringing big benefits to both our CSP and professional services businesses,” Xeroudakis says. Both BUs are already growing more rapidly: Cloud Carib is opening a second data center, as well as building a Virtual SAN-based private cloud on-premises for a large customer.

“Performance is faster. Latency and application launch times are at least 50 percent lower”, asserts Xeroudakis. “Our customers are surprised by the speed and responsiveness of their applications. They tell us that the performance resembles all-flash. Cloud Carib now has the ability to host any demanding application a customer wants to run.”

“The scalability of Virtual SAN gives us a competitive advantage too,” says Xeroudakis, “because we no longer have to scale our storage capacity independently of our compute capacity. We now treat everything as a big ‘hyper-converged’ pool of resources, a true Software-Defined Data Center.”

Cloud Carib can increase compute and storage capacity and performance at the same time simply by adding more Cisco UCS hosts. The IT team also values the freedom to choose its hardware.

Virtual SAN dramatically simplifies provisioning and ongoing management for the IT team. Unlike other solutions, it does not require additional software to be installed. Administrators use the same VMware vSphere Web Client dashboard that provisions and monitors VMs. It integrates with the VMware stack, applies storage policies on a per-VM basis, and provides advanced performance monitoring, troubleshooting, and capacity planning.

“The simplicity of administration is very important to us. Our VMware administrators ‘get’ Virtual SAN and could immediately start using it,” says Xeroudakis.

“Whenever we need more performance for a customer workload, we can define a new policy on a virtual machine level, without manually configuring volumes and datastores. It makes a huge productivity difference in the day-to-day operation of our datacenter.”

All in all, the bottom-line business benefits of the Virtual SAN solution to Cloud Carib include:

- Growing the revenues of its CSP BU by expanding the types of customer applications and number of users its data center can support, and adding a second Virtual SAN data center.
- Growing the revenues of its professional services BU by providing Software-Defined Storage solutions to customers with on-premises storage. Cloud Carib is currently migrating a government agency’s storage to a Virtual SAN 6 private cloud environment that will support 75TB of storage in two on-premise data centers.
- Lowering its upfront CapEx for a storage solution by more than 65 percent.
- Lowering its incremental CapEx for adding flash from about \$9.00 per GB to about \$3.50 per GB.
- Lowering its combined SSD and HDD CapEx costs per GB of usable storage by 2x to 4x.
- Reducing its storage system deployment cost by eliminating \$20,000 of external vendor engineering services and saving approximately \$32,000 of Cloud Carib IT labor, which can be reassigned to customer projects.

### Looking Ahead

Cloud Carib is well underway on the two courses it has charted for Virtual SAN—growing both business unit’s competitiveness and profits. Xeroudakis notes “Standardizing on the Virtual SAN architecture is instrumental to our IT mission and company growth.”

It has also begun testing VMware NSX®, which it expects will replace VMware vCloud Networking and Security in its data centers. “We really like the functionality and features of NSX,” says Xeroudakis. “In particular, its Layer 2 VPNs will be very useful in enabling our CSP BU to provide hybrid clouds, which opens lots of new customer possibilities for us.”

