

## Service Provider Offers Cloud Computing as Service



### Executive Summary

#### Logicalis U.S.

- Systems Integrator and Service Provider
- Farmington Hills, Michigan
- 555 Employees

#### Challenge

- Meet customer demand for computing infrastructure without capital outlay
- Charge based on actual usage
- Scale easily as business grows

#### Solution

- Multitenant hosted platform based on Cisco Unified Computing System
- Virtualized resources for switching, load balancing, and firewalls

#### Results

- Increased throughput and response time by 40 percent in benchmark
- Significantly reduced customers' capital and operational expense
- Lowered cost of growth

Logicalis U.S. launched Enterprise Cloud on Unified Computing System, providing flexibility and peace of mind.

### Challenge

Logicalis is an international provider of integrated information and communications technology solutions and services. The company's U.S. division serves more than 3000 customers in a range of industries, most with annual revenues over US\$250 million. The company has earned the Cisco® Data Center Unified Computing Advanced Technology Program specialization, Cisco Powered Computing designation, and membership in the Cisco Managed Services Masters Program.

Logicalis has been offering hosted services in its Cincinnati, Ohio data center since 2000. Popular customer needs include application test and development and disaster recovery.

When the compute infrastructure outgrew available space and power capacity, the company began looking for a new platform that would support new types of services. The company's customers wanted innovative ways to do more with less and respond more quickly to changing business dynamics. "Our customers had begun asking for us to provide compute resources differently, as an operational expense, so that they could expand their computing infrastructures despite tight budgets," says Kevin Gruneisen, vice president of data center solutions for Logicalis.

Logicalis heard a similar request from a healthcare software partner. Previously, the partner purchased hardware from Logicalis, installed its own software applications, and then provided the servers to hospitals as a turnkey solution. The partner and Logicalis determined that delivering the application as a service for a monthly fee would lower customer costs while also increasing the partner's profitability with annuity revenue.

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– **Mike Martin**  
Practice Director,  
Cloud Computing  
Logicalis

The company realized that it could meet the needs of its direct customers as well as independent software vendors by providing infrastructure as a service (IaaS). “A public cloud infrastructure was a natural extension of our existing managed services,” Gruneisen says. “Instead of managing our customers’ servers, we wanted to provide cloud computing over the Internet, as a service.”

## Solution

Logicalis found its multitenant hosting platform in the Cisco Unified Computing System™. “The main advantage of the Cisco Unified Computing System for our business is ease of growth, because it combines compute, networking, storage access, and virtualization in a single entity,” says Mike Martin, practice director, cloud computing for Logicalis. “We expect the Logicalis Enterprise Cloud service to grow rapidly, and the Cisco Unified Computing System in combination with high-density Cisco Nexus 7000 Switches gives us the flexibility and scalability to quickly ramp up to meet expected demand.”

Logicalis designed its data center in modular building blocks. Each module contains a rack that holds four Cisco Unified Computing System chassis, containing up to 32 Cisco UCS B200 M2 Blade Servers. Logicalis started with one module. The servers operate VMware vSphere, and can support a variable number of virtual servers to match the customer’s workload. Currently, the environment supports Windows and Linux operating systems.

Each Logicalis Enterprise Cloud customer is given a virtual compute container that includes processing, memory, storage, and bandwidth. A customer whose business needs change will be able to use a web-based service catalogue to increase or decrease the size of the container, and Logicalis will fulfill the request using third-party automation and orchestration tools. “If a customer experiences a temporary spike in demand for compute resources, the Cisco Unified Computing System automatically meets that demand,” says Martin. “Customers pay for these temporary bursts by the gigahertz, and only for the time they need the resources.” The Cisco Nexus® 1000V Switch enables accurate chargeback by keeping track of virtual machines as they move between servers.

After meeting with a new customer to assess the business and technology requirements, Logicalis might recommend a private cloud on the customer premise, or a hybrid approach combining a private cloud with the Logicalis Enterprise Cloud. Logicalis builds and operates private clouds with the same Cisco solutions used in the Logicalis data center. Some customers have their own Cisco Unified Computing System and use the Logicalis Enterprise Cloud as their business continuity and disaster recovery solution.

Logicalis also has a Cisco Unified Computing System C200 Server in the data center, used to demonstrate Cisco Unified Communications and collaboration capabilities to customers. When Logicalis begins offering a Cisco Unified Communications managed service, customers will be able to choose whether to host the applications on premise or in the Logicalis data center.



## Results

### Appealing Value Proposition for Cost-Conscious Customers

Logicalis Enterprise Cloud customers appreciate being able to purchase virtual compute containers that are the right size for their current business needs. Logicalis bills based on usage: compute by the gigahertz, and memory and storage by the gigabyte. The hospital software provider credits the Logicalis Enterprise Cloud with making its software more competitive. "Using the application as a service is more economical for our customer's customers than paying for software licenses and servers," says Martin.

Customers that engage Logicalis to implement and operate a Cisco Unified Computing System on their own premise also experience significant capital and operational cost savings. Lower power and cooling consumption reduce energy bills while also supporting customers' green initiatives. Customers that engage Logicalis to build an on-premise cloud also gain business agility, because Cisco UCS Manager service profiles and virtualization enable new server provisioning in minutes instead of days. "Automating server provisioning lets customers shift their focus from IT maintenance to IT innovation," says Bob Hankins, vice president of Cisco solutions for Logicalis.

### High Performance and Availability

In a benchmark measuring performance of the healthcare application, throughput and response time were 40 percent faster on the Logicalis Enterprise Cloud than they were on dedicated servers. "In fact, application performance was so fast on the Cisco Unified Computing System that we had to double the number of transaction-generators to keep the application busy enough for an accurate performance measurement," Martin says.

In addition to delivering high performance, the Cisco Unified Computing System enables Logicalis to quickly recover from hardware failures to help ensure business continuity for customers. If a server needs repair, Logicalis can provision any available blade server in minutes by applying a service profile, and then use VMware vMotion to move applications to the new server.

### Simplified Disaster Recovery

Many Logicalis customers are interested in using the Logicalis Enterprise Cloud for disaster recovery. Instead of transporting tapes to an offsite location, these customers simply replicate their virtual machines and data over the network to the cloud. "Virtual servers and a high-performance storage infrastructure enable Logicalis to restore customer environments more quickly than customers could with tapes, minimizing the business impact of outages," says Martin. "And customers who use the service don't need to procure and manage a duplicate computing infrastructure." Logicalis plans to use the Nexus 7000 Overlay Transport Virtualization (OTV) to connect its two data centers, creating a flexible cloud infrastructure.

### Ease of Expansion

As customer demand for the cloud service increases, Logicalis can scale to meet the need by adding more Cisco UCS chassis. All blades in the chassis connect through the same redundant pair of Cisco 6120 Fabric Interconnects, saving the time and expense of individually connecting each new server to data and storage networks.

## Product List

### Data Center

- Cisco Unified Computing System
  - Cisco UCS 5108 Blade Server Chassis
  - Cisco UCS B200 M2 Blade Servers
  - Cisco UCS C200 M1 Server
  - Cisco 6120 Fabric Interconnects
- Cisco Nexus 7000 Switches
- Cisco Nexus 1000V Switch
- Cisco MDS Multilayer Director 9513
- Cisco ACE Application Control Engine 4710
- Cisco ASA Adaptive Security Appliance 5540

## Next Steps

Logicalis plans to increase the return on investment from the cloud platform by using it to deliver new types of services. One possibility is offering storage as a service for backup and recovery, taking advantage of the Cisco MDS Multilayer Director 9513. Another idea is using Cisco Unified Computing System C-Series rack servers for encryption, for healthcare and retail customers that need to comply with the Healthcare Insurance Portability and Accountability Act (HIPAA) and Payment Card Industry (PCI) standard.

“Working with Cisco through the Managed Services Channel Program and Managed Services Masters Program gives us a trusted advisor as we expand our cloud computing offerings,” says Hankins.

## Technical Implementation

In the Logicalis data center, all servers connect to the data network and storage through a single pair of Cisco UCS 6120 Fabric Interconnects, making it unnecessary to individually cable new servers as the platform grows. These fabric interconnects, in turn, connect to Cisco Nexus 7000 Switches at the core, and to IBM XIV Storage and encryption devices by way of a Cisco MDS 9513 Multilayer Switch. Logicalis configured the Cisco Nexus 7000 Switch with two virtual device contexts (VDCs), making it act like separate logical switches for the cloud environment and the traditional managed services environment.

Four pairs of Cisco ACE Application Control Engines provide SSL encryption and load balancing for requests flowing into the Logicalis Private Cloud. Each customer is assigned a private virtual context on the Cisco ACE appliance.

## For More Information

To find out more about Cisco Unified Computing System, visit:

[www.cisco.com/go/ucs](http://www.cisco.com/go/ucs).

To find out more about Cisco Data Center Business Advantage solutions, visit:

[www.cisco.com/go/dc](http://www.cisco.com/go/dc).

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