

Cloud Computing: It's In Your Future

What You Need
to Know about
Logicalis and
Cloud Computing



Cloud computing is a transition that is changing the way you will buy, build, operate and consume information, infrastructure and applications.



Cloud is something you can own as a private internal system, and something from which you can consume services delivered by a trusted service provider. Cloud computing will continue to mature, advancing the way organizations think about constructing and deploying their technology infrastructure and changing the way they consume and pay for technology services.

Cloud is a technology, a service and a strategy, and as one of the U.S.'s leading systems integrators, managed service providers and managed hosting providers, Logicalis brings the full potential of cloud computing to our customers, whether cloud is a private infrastructure you manage yourself or a set of services we deliver to you.

Logicalis can build private custom clouds, deliver a readymade cloud to your site or provide secure cloud services from our U.S.-based data centers, and because our cloud services come with a contracted service level agreement, you can start to consume cloud services with confidence.

How We View Cloud

Cloud is a flexible, secure and reliable infrastructure or service that can be used by organizations to support their strategic or tactical information technology (IT) delivery needs. If you are looking to accomplish any of the following, cloud should be considered an option:

- Make an internal IT infrastructure as efficient to own and operate as possible;
- Mitigate the cost of replacing an end-of-life data center;
- Move IT infrastructure provisioning to a trusted services partner; and
- Meet requirements for the externally provided Disaster Recovery (DR) services required to host core business applications, such as ERP or e-commerce sites that necessitate extra computer or storage capacity to manage business.

You're Bound to Have Questions

We believe cloud shouldn't be complex or confusing. But cloud is evolving fast, and if you're creating a strategy around cloud, there are many questions you will need answers to:

Where do I start with cloud?

Which parts of cloud are right for me?

Where is the cloud?

What does cloud cost?

What service levels can I expect?

What security measures are in place?

Where is my data?

Our belief is that we are uniquely positioned to answer all of these questions, and have the ability to demonstrate that cloud isn't something that represents a risk to your IT infrastructure or your business, but is a technology architecture, solution or service you can adopt and integrate with confidence.

Logicalis is uniquely positioned

Logicalis offers a unique portfolio of cloud solutions and services, ranging from private cloud to hosted cloud systems.

Logicalis cloud solutions are...

- Built with best practice expertise based on years of experience in providing virtual data center solutions.
- Enterprise-class and secure, rather than a service provided through the internet.
- Governed by SLAs and service contracts.
- Constructed around individual or community requirements.
- Built with enterprise-class technology infrastructure and software.

Logicalis: Design, Build, Manage and Host All of Your Cloud Needs

Private Cloud — This version of cloud offers highly virtualized and automated data center infrastructures managed either by your own IT department or our managed service experts. Our Cloud Architecture Reference Framework allows Logicalis consultants to assess your business requirements and needs. We examine your current infrastructure and skills investment and create a Private Cloud system designed to meet your specific needs and evolution timetable.

Infrastructure as a Service — The Logicalis Enterprise Cloud provides hosted, managed Infrastructure as a Service (IaaS) for network, computer and storage services charged by bandwidth, compute and storage consumption on a monthly operational cost basis. Built on a highly reliable and scalable infrastructure, Logicalis not only provides the compute resources required to support enterprise-class applications, but the day-to-day monitoring and management of the virtual server, including operating system patching, daily backups and a dedicated service-level manager.

Hybrid Cloud — This system provides private hybrid and hosted integrated cloud solutions for cloud burst, cloud DR, cloud application test and development and shared-service infrastructure.

Cloud Hosting — Cloud-based application hosting is available for individual organizations, like-minded communities leveraging shared services or independent software vendors looking to deliver their solution as an SaaS.

Logicalis Credentials

Building private clouds is in our DNA. As accredited expert data center partners of Cisco, HP, IBM, EMC, NetApp, VMware and Microsoft technologies, we can build private clouds based on all major server and storage platforms. And of course, we have virtualization experts on all major hypervisors and operating systems so we can provide cloud infrastructures from x86 to midrange computing systems.

Logicalis' Innovative Approach to Cloud Computing

We have developed the Logicalis Enterprise Cloud to be built based on an innovative solution called Virtual Compute Containers. The Compute Containers consist of a virtual pool of computing (Ghz & memory), storage and bandwidth that scales to meet our customers' unique computer requirements. The Compute Container provides elasticity and burstability into the Logicalis Enterprise Cloud shared resource pool while guaranteeing the presence of the computer resources required to support enterprise-class applications. The Compute Containers are built at the virtualization layer, enabling flexibility to shrink and grow based on a business' needs. In addition, the virtualization technology allows the Logicalis Enterprise Cloud to be integrated with a customer's private clouds, providing hybrid cloud options.

Transitioning to Cloud Doesn't Have to Be Risky

In the same way cloud shouldn't be complex or confusing, migrating to the cloud shouldn't be risky—in fact, removing risk through all stages of cloud adoption is something Logicalis Virtualization and Cloud Consultants take pride in.

Private Cloud – You Might Already Be There:

A highly virtualized data center built specifically for your needs that also utilizes your current infrastructure.

Our Virtualization Migration Risk Assessment (VMRA) service focuses on the migration from non-virtual infrastructure to private cloud and our Cloud Migration Risk Assessment (CMRA) takes customers from private cloud to hosted cloud. Both services set our customers on their journey to cloud technology, and offer a tried and tested methodology for producing a successful outcome every time.

What Can Logicalis Do for You?

Logicalis offers complete cloud engagement, and because we are a Systems Integrator, Managed Services Provider and Managed Hosting Provider, offering all major forms of cloud solutions and services, we are able to deliver cloud in a manner that meets your specific business and technology needs.

So Why Should I Build a Private Cloud?

Odds are that you may already be in the process of moving some of your IT infrastructure to something that resembles a cloud system. If you are virtualizing, then you're already on your way. Private Cloud isn't simply about putting a hypervisor on your servers, although that's a good start; it's really about taking all of the infrastructure components you already have, making them work more efficiently and then linking them, which means you can provision and manage them more simply. Linking virtualized servers, storage, network, security and management tools and converting them into a resource pool is the true definition of the term "cloud."

Logicalis Cloud: Architecture Reference Framework

Logicalis professionals know that building a custom cloud solution is not as easy as flipping a switch or buying a simple server or software product, but rather, is a holistic approach to delivering IT as a service, enabling IT optimization to align with business consumption.

We start by consulting with our clients to determine their business requirements and challenges. We then gather current server performance data and match that with the related support costs and business impact. This process delivers a clear understanding of the IT baseline cost and is instrumental in developing a customer's cloud strategy and eventual architecture.

We break the cloud components down into the following areas:

- Strategy and Operations (required at all stages, from start to finish)
- Abstraction of Infrastructure
- Resource Pooling and Democratization
- Services Catalog
- Security and Compliance
- Consumption Model
- Auto/Self-Provisioning
- Elasticity/Agility
- Capacity Monitoring/Planning
- Charge Back/Show Back

Based on business requirements and existing infrastructure investments, Logicalis develops private cloud architectures built on a virtualization foundation and leveraging technology solutions from our key partners, including HP, IBM, Cisco, NetApp, EMC and VMware. This approach allows clients to adapt cloud principles into their current operations in the most cost-effective and risk-averse manner.

Can I Obtain Private Cloud From Any IT Vendor?

Clouds are highly consolidated, efficient, operational pools of infrastructure resource and Logicalis is one of the few partners in the U.S. with the ability to deliver cloud solutions across all major server and storage platforms. We also have the capacity to deliver the operational and automation tools and experience that enable cloud to be run as one highly efficient IT business resource.

Why Should I Work With Logicalis?

Logicalis builds private clouds that are custom made to fit our customer's specific needs. We offer "cloud principles" for every corporate application and our tailored approach of integrating network, computer, storage and infrastructure automation offers an adaptable and powerful solution for all enterprise applications.

Infrastructure as a Service — The New Way of Thinking:

Readymade computer, storage and networking solutions built with enterprise-grade technology and delivered as an SLA-based, contractual service.

- Logicalis delivers a complete range of private, customer-owned cloud solutions.
- Our cloud skills cross all major vendors, including Cisco, IBM, HP, NetApp, EMC and VMware technologies.
- We have 20 years experience in computing, storage and networking, and are one of the few partners with the ability to create truly integrated private cloud solutions.
- Our tried and tested VMRA process helps customers plan and eliminate risk in moving to a highly virtualized private cloud system.
- We are able to create clouds that support all major technology platforms and operating systems, from Intel to Midrange.

Virtually Everything Is Virtual

Private clouds comprise the next generation of highly virtualized data centers, but in Logicalis cloud solutions, we strive to virtualize EVERYTHING — network, computing, storage, security and operational tools. Logicalis doesn't simply build virtual infrastructures; we architecture environments that enable the provision of new capacity and the movement of key business workloads.

Infrastructure as a Service (IaaS)

Logicalis provides IaaS solutions that include compute, storage and network components that are a perfect fit for all critical business requirements. As a Systems Integrator, we build private cloud infrastructures every day, and our IaaS services are designed to the same architectural and service standards that we have been delivering for over 10 years.

Our IaaS solutions provide a truly enterprise-class service, based on advanced technology that provides computing, storage and networking platforms available from leading vendors. Our highly secure, multi-tenant hosting platform is ideal for individual clients or communities of clients, and is a U.S.-based IaaS offering charged on a capacity basis over time in the form of a contracted model.

Enterprise-Grade Technology

Our cloud is the best there is because we deliver against a contracted SLA. So, though you might care about the platform it's built on, you will care even more about the quality of service it delivers. The Logicalis Enterprise Cloud Managed IaaS offer-

ings are truly enterprise class, built on recognized technology platforms and operated from our Tier 3+ Data Center.

We Believe in Working for You and With You

Unlike most "pay as you go" IaaS offerings, the Logicalis Cloud is designed to work for customers as a long-term IT infrastructure service and has the capacity to run mission-critical workloads. We provide not only an enterprise IaaS infrastructure, but a solution designed to be a "managed" IaaS, through which we provide managed services to support the virtual servers running in the cloud. These include 24 x7 monitoring and management of each Virtual Server, including OS patching and daily backups.

Managed IaaS is a service that our customers depend on. Service Level Agreements form the basis of our long-term contractual service delivery model, incorporating service and capacity flexibility and agility, based on a managed service contract.

We also work with leading technology providers. Logicalis uses VMware, Cisco, IBM and HP technologies for our Compute, Network and Storage as Service offerings, which means our IaaS services are built on the same technology that an enterprise would use — but to a scale and density that offers environmental efficiencies and cost reduction through technology consolidation. These efficiencies mean that using IaaS makes perfect business and technology sense.

Hybrid Cloud – Making the Pieces Work Together: Matched virtualization architecture that integrates private and hosted clouds, provides a single cloud service and delivers next-generation data center capacity.

So, how does it work? Customers can select a range of services, from simple capacity over time to flexible purchasing options that provide the elasticity many will need for specific times of year or for changing capacity requirements.

- Compute, Storage and Network Services
- Pay per consumption (compute, storage, bandwidth), contracted capacity over time
- Massive capacity capability/high density hosting
- SECURE platform, run in the U.S. by a trusted solutions and services provider
- SLA-based contractual model over 1, 3, 5 years
- Pre-provisioned and SLA-based burst capacity
- Logicalis' unique Virtual Compute Container (VCC) technology provides secure, virtual resources on a multi-tenant cloud
- Fixed, Flexible and Dedicated Compute
- Containers provide unique IaaS delivery structures designed to meet your specific cloud needs
- Hosted in a state-of-the-art, high-density, Tier 3 Data Center
- Accessible through private and closed connectivity networks

What is a Hybrid Cloud?

Logicalis' Hybrid Cloud is an integrated private and hosted cloud solution providing a single infrastructure "resource pool" with the freedom to move application services or data between a customer's private cloud infrastructure and the Logicalis Enterprise Cloud service. A Hybrid Cloud is ideal for customers looking to cap the size of their own IT cloud infrastructure or those who may have run out of power or space. It is also ideal for those who may need a representative infrastructure for DR or application test and development and need a trusted and integrated service they can use in the same way as their own.

How is it constructed? The Logicalis Enterprise Cloud can provide a highly integrated matched virtualization architecture solution, with private and hosted clouds working together to deliver a hybrid, secure, flexible and enterprise-class cloud offering. We partner with VMware to build a virtualization reference architecture for both the on-site and hosted clouds, offering full freedom of movement for applications or data. Both sides are constructed from the same virtualization technology architec-

tures, enabling the virtual server to integrate and move between clouds – and that makes this a true enterprise enabler.

What Are the Two Key Elements of Hybrid Cloud?

Customized On-Site Private Cloud services built on a virtualized framework and the Logicalis Enterprise Cloud's Compute Container, built on VMware technology, enabling a "hybrid cloud" to be matched with customers' private clouds.

What is the technology behind it? The Logicalis Enterprise Cloud is based on Cisco's Unified Computing System (UCS) stateless computing technology, coupled with virtualization technologies from VMware. We have partnered with VMware to provide the virtualization fabric between our public cloud offering and our client's private cloud solutions.

Our architecture is designed to deliver enterprise-class services and you can choose to run part of the cloud as a non-hypervisor resource for applications or operating systems that cannot or should not be supported through virtual technologies. It offers a truly made-to-measure environment.

This powerful feature means the Hybrid Cloud is ideal for supporting any enterprise application workload, making it a highly efficient choice for on-site cloud services.

How can the Hybrid Cloud help? We build our client's private cloud infrastructure with enough compute, storage and network capacity to meet the expected local demand and local capacity capability. Additional future capacity — in the form of DR services or burst capacity, for example — is provided by the Logicalis Enterprise Cloud, with client-specific capacity availability provided over the long term. The customer simply sees one set of infrastructure. This is a highly integrated solution providing maximum flexibility and scope for innovative capacity provisioning.

Hosted Cloud— Providing the Foundation You Need:

Secure, reliable,
made-to-measure
private cloud hosting
for enterprise
applications,
e-commerce
systems and
Independent
Software Vendors.

Examples of How it Works

The Logicalis Enterprise Cloud can provide full HA/DR services for the on-site private cloud. So, if your DR data center is running out of steam, you can move all DR services directly onto our cloud.

Or if, at certain times of the year, an on-site application needs more capacity, you can simply “move” a local workload back onto our cloud to free up room as and when it is needed. Once the “burst” requirement has been met, you can move workloads back to your local private cloud. The Compute Container you used in the Logicalis Enterprise Cloud could have been your DR reserved capacity, so you can burst into your own DR reserve capacity to access the significant cost savings afforded by optimizing your cloud/IT investments.

The great benefit of the Logicalis Enterprise Cloud and Hybrid Cloud is that with matched virtualization architecture designed for enterprise-class services, you can move applications from your site to our host site with ease. It is a packaged on-site cloud connected to a packaged hosted cloud, giving you a single, seamless, packaged solution. The Logicalis Cooperative Cloud offers customers or communities of customers a straightforward route to cloud adoption.

An Ideal Environment

Many commercial and public sector organizations and Independent Software Vendors (ISVs) need a secure and reliable environment in which they can host their core business applications, e-commerce sites or deliver services to a group of customers as an SaaS. Logicalis Cloud Hosting offers an ideal environment for all of these requirements.

Putting You on the Map

We host your applications and services in our Tier 3 Data Center. We provide high bandwidth internet services that are already available and we have interconnects to major internet exchanges and other networks. Cloud capacity and storage is all U.S.-based and the service is managed from a U.S. service center, as well. This is especially important to industries for which information security is paramount. Customers can be assured that cloud hosting with Logicalis meets the highest security and operational standards.

Get it Exactly Right With Us

Logicalis Cloud Hosting is a made-to-measure solution for any size requirement. Customers work with us to design and select a custom environment. Our cloud operations and architecture team ensure that we work to your specific hosting requirements.

Our managed services team can also help you manage your operating system or hypervisor technologies, removing a layer of management and ensuring that you truly are in a cloud hosting environment that is enterprise class.

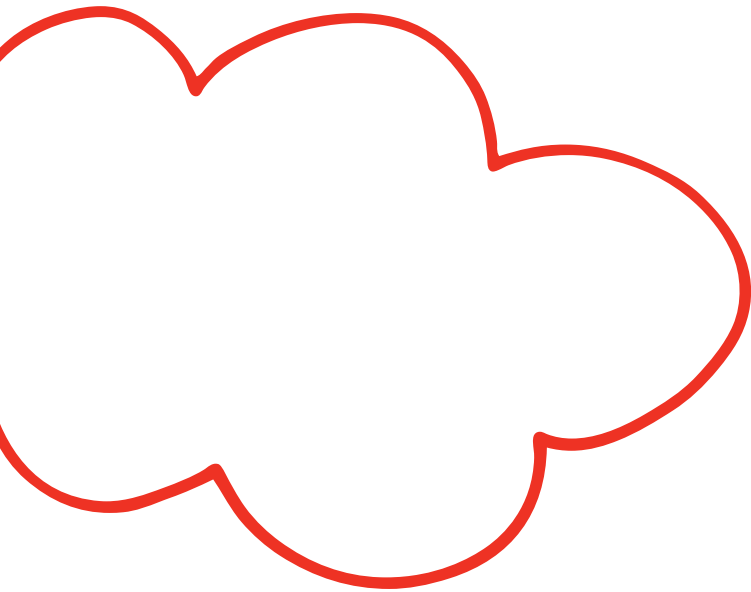
Innovation Through Consultation

Logicalis Cloud Hosting is designed for fast access. The process of bringing your application on board is managed by our dedicated engineers, who will help you adjust your size and scope. Logicalis use its innovative Virtual Compute Container technology to create a specific virtual cloud where customers can deploy their operating system and application stack of choice.

The Host With the Most

- U.S. hosting environment
- Tier 3 Data Center
- Flexible costing based on Network, Compute and Storage as a Service
- Highly efficient hosting environment based on enterprise-class technology platforms
- Virtual Compute Containers to deliver a single hosted virtual environment
- High bandwidth internet connectivity available on request
- Managed services to help run your operating environment
- Connectivity to major internet exchanges.

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What can we do for your organization?

Contact Logicalis to learn how we can help.

Visit
www.us.logicalis.com

Call
866.456.4422

About Logicalis

Logicalis is an international provider of integrated information and communications technology (ICT) solutions and services founded on a superior breadth of knowledge and expertise in communications & collaboration; data center; and professional and managed services.

Logicalis Group employs over 1,900 people worldwide, including highly trained service specialists who design, specify, deploy and manage complex ICT infrastructures to meet the needs of over 5,000 corporate and public sector customers. To achieve this, Logicalis maintains strong partnerships with technology leaders such as Cisco, HP, IBM and Microsoft.

The Logicalis Group has annualized revenues of \$1 billion, from operations in the UK, US, Germany, South America and Asia Pacific, and is fast establishing itself as one of the leading IT and Communications solution integrators, specializing in the areas of advanced technologies and services.

The Logicalis Group is a division of Datatec Limited, listed on the Johannesburg and London AIM Stock Exchanges, with revenues in excess of \$4 billion.