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## WHITE PAPER

# Cloud is More Than Just Compute

Enable your business without the typical  
infrastructure costs, complexities and constraints

## EXECUTIVE SUMMARY

Cloud computing is not just about harnessing flexible, scalable compute power. The cloud enables businesses of any size to afford enterprise-class apps, computing, storage, security, or networking without the cost, complexity and constraints one would normally expect from traditional infrastructure. Businesses enjoy benefits such as rapid deployment, easy administration, pay-as-you-go subscription pricing, built-in scalability and redundancy, anywhere access and capital expenditure (CAPEX) reductions.

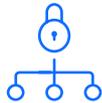


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# Choose the Best Security Team

When relocating to the cloud, there's a lot to consider. Privacy concerns, like data access and third-party data sharing, need management. To ensure authentication, integrity and confidentiality of your data and communications, you'll need to include disclosures in the service level agreement (SLA) and ameliorate unwarranted access to data with cryptography, such as Public Key Infrastructure operating in concert with SSO and LDAP.

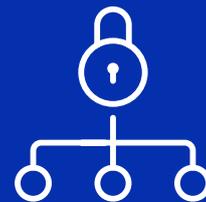
But the advantages of cloud-provided security outweigh the risks. Although security complexities are increased when managing more devices in the cloud, data security is significantly improved when data is centralised within an observable locus of the cloud infrastructure. With dedicated cloud resources, security is often as good as, if not better than in-house security systems.

Cloud providers provide a wider range of security options, from physical and operational security to network, system, application and data security. Cloud customers have choices between the most basic firewall and application security packages to an iron-clad, multi-tiered security portfolio encompassing the physical, network and application tiers coupled with robust security software, dedicated hardware firewalls and gateway appliances and SSL certificate management capabilities.

As the volume, complexity and sophistication of attacks on IT infrastructure increase, choosing a cloud service provider that offers an additional level of security is crucial.

## Intel Trusted Execution Technology (Intel TXT) as an added cloud security service

Intel TXT, a hardware-assisted security service, ensures the authenticity of a platform and its operating system. It defends against software-based attacks, like those aimed at stealing sensitive information by corrupting system or BIOS code or those seeking to modify the platform's configuration.



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# Control Many Storage Systems, Not Just One

Businesses also benefit from cloud storage services that offer features such as elasticity, scalability, multi-tenancy and metered resources. Cloud storage is comprised of many distributed resources but functions as a single, federated storage cloud with the benefits of high-tolerance through redundancy and distribution of data. Cloud storage also facilitates the creation of versioned copies, making it a highly durable solution.

IBM® Cloud delivers block and file storage with mass servers, backup options and a selection of public object storage approaches that work for you and with your virtual and dedicated servers.

Some types of storage are customised for specific IT tasks. For instance, an Network File System (NFS) based storage solution provisioned in formatted file shares on a networked storage device and deployed in a Network-attached storage (NAS) environment is easy-to-use file-level storage and readily compatible with most popular operating systems. As the name implies, file-level storage supports massive file storage and retrieval. On the other hand, an iSCSI-based block-level storage solution provisioned in

raw volumes of unformatted blocks and deployed in a Storage-area network (SAN) environment is ideal for databases, virtual server deployments and big data analytics. IBM Cloud Object Storage delivers access to your unstructured data via a self-service portal from anywhere in the world with RESTful Open Stack Swift and S3-compatible APIs via IBM SecureSlice technology. You can store frequently accessed unstructured data across three zones for geographic resiliency and availability from geo-dispersed endpoints. Choose a storage class for frequently accessed data, occasionally accessed data and long-term data retention with Standard, Vault and Cold Vault deployment options. Or choose Flex deployment for dynamic data-access needs that fluctuate monthly.

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**STORE. SCALE. SECURE.**  
Manage your data in the cloud.



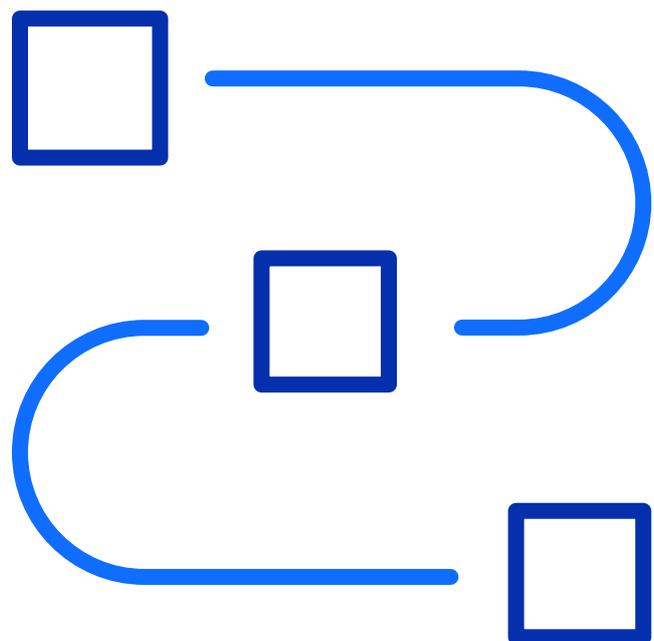
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# Maximise Existing Networks

The emergence of ultra-broadband, low-latency connections and high performance processing power gives rise to a new networking paradigm for building and managing secure private networks over the public Internet, better known as cloud networking. In cloud networking, traditional network functions and services like connectivity, security, management and control are pushed to the cloud and delivered as a service.

Businesses have the option to move management and other control aspects, such as network policy, into the cloud. This option is available even while businesses retain on-site connectivity and packet-mode functions, such as routing, switching and security services. To take it one step further, businesses may choose to move all core networking functions into the cloud, including addressing and packet paths. This eliminates the need for any local hardware (besides the hardware that provides the Internet connection), permitting the business to enjoy the full benefits of cloud networking, also known as the Network-as-a-Service (NaaS) model.

In the NaaS model, businesses securely connect to the private virtual cloud network over SSL, PPTP, or IPSEC VPN gateways to access and manage their server infrastructure. The IBM Cloud VPN solution even enables its customers to access servers at the hardware level, independently of the operating system by using out-of-band IPMI connectivity to improve performance and security.



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# SDN and NFV for Next-Gen Networking

Further advances in technology enable a new generation of cloud-based NaaS players using software defined networking (SDN) and virtualisation technologies like NFV to provide an elastic and resilient NaaS. Because cloud networks are multi-tenant private virtual cloud networks overlaid on the Internet, each virtual cloud network functions like a borderless LAN and provides fully switched, any-to-any connectivity. These technologies combined enable the cloud network provider to maintain all operational aspects of building and managing a VPN, such as topology, traffic engineering, capacity planning, high-availability and the network operation center (NOC), traditionally performed by the customer.

Cloud-based networks operate over any physical infrastructure, only require the hardware for an Internet connection and employ per-user or per-device subscription pricing. Now businesses can operate distributed enterprise networks with enterprise-class network capabilities around the globe through a highly resilient, multi-tenant application. The greatest benefit to businesses is that there is no capital investment. For a subscription-based service, businesses can deploy worldwide in minutes and operate distributed networks via a cloud-based application while maintaining centralised control and network visibility.



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# Close the Gap Between Your Customer and Your Business

Businesses today use content and rich media to inform, interact, transact and expand their operations. The customer's user experience is paramount. By pairing object storage with content delivery nodes (CDNs) around the world, businesses reduce latency and improve the speed of content delivery. Multiple, geographically-diverse nodes avoid potential network jams and optimise overall cloud performance, reducing the distance between the end user and the business. The lowest latency and the

highest speeds are key to an exceptional end user experience.

Transitioning applications and services to the cloud may not be simple and painless, but the benefits provided by the cloud make it a valuable proposition for immediate business growth and gaining a competitive edge over the longer term.



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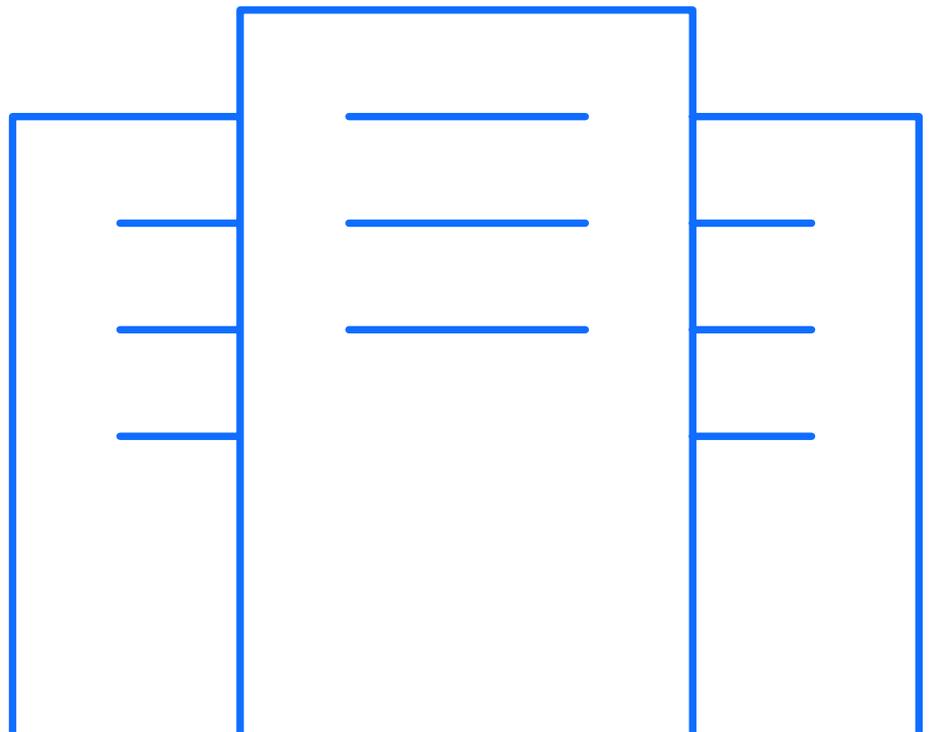
In an era where the **customer is king**, businesses must **rethink their strategies** and **harness the best available technology** to win loyalty. Where the cloud succeeded in **bringing businesses closer to their customers**, it has proven to be a **worthwhile investment**.

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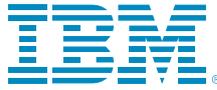
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