Infrastructure-as-a-service

Jason Connolly, from Next Generation IT, looks at the benefits of the next evolution of cloud computing

Cloud computing has proved very popular with start-up and small businesses.

Paying a monthly fee for all elements of IT helps with cash flow, allowing small businesses to keep expenses to a minimum, and provides a highly scalable system that can quickly grow with their business. Also smaller businesses generally need not employ specialist IT staff, instead partnering with IT service providers to buy in a complete end-to-end service.

In this way, desktop-as-a-service (DaaS) suits small businesses providing flexibility to work from the office, at home or anywhere, but without needing onsite servers or in-house expertise. Backups, disaster recovery, antivirus, integration with mobile devices and remote access are all included in the service.

But DaaS can be expensive and inflexible for larger organisations. When an organisation is large enough to employ its own IT staff, it needs to retain control over its IT systems. Plus the complexity of larger businesses will lead to more customised and complex IT systems. Recognising this need, service providers have evolved their services to provide Infrastructure-as-a-Service (IaaS).

IaaS builds on the established cloud platform to provide a more scalable and controllable service. The technology has been proven with established services such as Microsoft's Azure, but with issues of data sovereignty and the expense of adequate communications links to off-island data centres, the take-up in the Channel Islands has lagged behind the UK. More recently, local businesses have provided IaaS in Channel Island data centres and we are seeing a rapid uptake of this service.

What is IaaS?

Building and running an enterprise-grade IT system housed in a data centre – with a controlled environment, resilient services and backup systems – is an expensive undertaking, requiring technical expertise, 24/7 monitoring and continuous support.

Service providers such as NGIT achieve economies of scale by building a scalable and resilient infrastructure to host the virtual servers of their many local customers. Using the combined buying power of many organisations we can provide services - that could not be afforded by any one organisation - to all our clients.

The Elements of IaaS

IaaS provides an end-to-end service including all elements of the back-end IT infrastructure on which businesses run their own dedicated virtual server environment, including:

Environment: Purpose-built data centre with multiple power supplies, generator and UPS cover, fire suppression, advanced fire detection, lightning and flood protection, multiple data feeds, physical access controls, intruder alarms, security guards and CCTV.

Systems: Enterprise grade clustered servers, storage area networks, resilient communications equipment, industry leading firewalls/security measures and multiple IP feeds.

Communications: Local fibre connections from client office to the data centre ensure low latency, guaranteed bandwidth, highest performance and reliability.

Service: A complete service incorporating all elements of infrastructure support and monitoring. In most cases service providers are ISAE or ISO certified with robust procedures to continuously monitor, maintain and update environment and systems.

Benefits od IaaS

For larger organisations, IaaS provides advantages over an on-premise IT system and provides the following benefits:

Performance
- Better scalability and flexibility
- Can take advantage of highest performing equipment and IP feeds
- Great for local businesses with local fibre connections to Guernsey data centre

Risk
- Reduces risks associated with hardware failure and increases security
- Guards against environmental issues, such as power outages
- Service can include backup to a duplicate system at a second data centre
- Disaster recovery is simple, for example working from home or internet cafe
- Retaining more control for in-house IT team

Financial
- Spreads cost of IT infrastructure and avoids large capital purchases
- No need to buy and run servers on local site
- No need for computer room and expensive air conditioning
- Can take advantage of service provider licensing (monthly fee as opposed to purchase)

Service
- No need to support IT infrastructure in-house, for instance no need for tape backups
- Continuous monitoring of systems and 24/7 support of infrastructure and environment
- Lots of local expertise in the Channel Islands to support systems

Summary
The next evolution of cloud computing, IaaS, enables local mid to large businesses to move their IT systems into a resilient data centre, avoiding the need to purchase equipment. Instead they pay for virtual servers on a rental basis, as used. In the data centre, systems are protected against power outages, hardware failures and other environmental factors ensuring that systems are always running and accessible. Available from local service providers, IaaS spreads the cost of the supply of IT hardware, software and maintenance, ensures a consistently high-level of service and support and provides access to advanced services usually only available to larger enterprises.