



## CASE STUDY

# SAS delivers on-demand training centre using Citrix, IGEL and Nastek expertise

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SAS believes data is the lifeblood of any organisation. As the leader in business analytics software and services, SAS transforms data into insights that help give businesses a fresh perspective on their operation. And its approach is recognised by some of the most successful businesses in the world with SAS being used at more than 80,000 sites in 146 countries, including 91 of the top 100 companies on the 2015 Fortune Global 500 list.

The SAS UK headquarters are situated on the beautiful 110 acre Wittington Estate on the banks of the river Thames near Marlow. At this location, and in London, Manchester and Glasgow, SAS trains its customers and staff on how to get the best from its software solutions.

It was this training and education resource that the infrastructure engineering team at SAS was looking to upgrade. "We had an ageing infrastructure and PCs on the desktop in the training facilities," explained Simon Fletcher, Infrastructure Engineer and part of the IT Operations Team at SAS. "The new software solutions we wanted to use in our training centres were going to require more memory and CPU power, so we needed to upgrade our infrastructure and we had a decision to make on how best to deploy our training courses."

## THE CUSTOMER

- ▶ SAS, business analytics software and services
- ▶ Used at more than 80,000 sites in 146 countries
- ▶ 4 customer training centres across the UK

## Minutes rather than hours

In particular, the organisation wanted to move away from the time consuming and repetitive process they went through to set-up training sessions to run on the PCs. With the ability to deliver around 50 different training programmes, the support team took around 2 hours and 45 minutes to reset each training room, each day. This involved changing and/or refreshing the programmes on each PC after every training session. After investigating how SAS was delivering its training in other countries, the team decided that it would benefit from following the same model as at its main HQ in the US, where courses were being delivered using virtual software solutions from Citrix. One of the major benefits of adopting the HQ model was that the UK team would be able to use existing virtual server images, with training programmes already pre-defined, and import them directly to the UK system. This would save many hours of development time and expense.

"One of our major requirements was the need for a flexible solution," said Simon. "We needed to be able to deliver courses in minutes, rather than hours."

## THE CONSULTANCY

- ▶ NASTEK is a boutique consultancy, specialising in Citrix VDI Infrastructures
- ▶ Proven expertise in designing future-proof solutions
- ▶ Team of seasoned SMEs, experts in their fields
- ▶ Deploying and managing complex solutions is their bread and butter

## Support from Nastek

SAS called upon Nastek, a boutique Citrix Consultancy that specialises in designing and implementing the latest Citrix technologies, and their experience as an IGEL Technology reseller to offer some guidance and insights.

Nicholas Stapley, from Nastek's Citrix Consultancy Services, worked with the SAS team to understand their business needs and issues. The engagement began with workshop sessions to identify their specific requirements and to explore various strategic options. "Nicholas then used his knowledge of the solutions available and his real life experience in implementing these technologies to recommend a solution for us," explained Simon. "This really helped us to move towards a Citrix XenDesktop and Provisioning Services solution, hosted on new Citrix XenServer hypervisors."

The Citrix Provisioning Services solution appealed to the SAS team because it would enable them to drastically reduce the infrastructure server requirements and costs. For example, they would be able to deploy to the local servers a single 200GB training image obtained from its HQ and it wouldn't matter if you had 1 or 20 delegates on a course as only a single 200GB image would be streamed – rather than each delegate have a separate copy of the 200GB image for each delegate.

After securing business case approval for the project from the Education Manager and Finance Department, the team was ready to roll-out the new solution in the UK head office campus, SAS largest training facility in the UK, followed by its London, Manchester and Glasgow training facilities.

## THE CHALLENGE

- ▶ Deliver a training on demand solution
- ▶ Save management time & costs
- ▶ Improve user experience

## Choosing the access method

The second important phase of the project was choosing the best hardware for the training centres. Based on their specific requirements Nastek recommended using IGEL Technology's Zero Clients, as these devices not only offer seamless integration with the backend Citrix services, they also offer a simple centralised administration methodology. SAS proceeded to

test these devices against leading competitor products in a Proof of Concept environment, which was setup by Nastek.

Nastek also recommended that in the interim, whilst the new IGELs are provisioned, to allow more extensive User Acceptance Testing of the new Citrix environment the existing PCs in the training rooms could be repurposed using the IGEL Universal Desktop Converter (UDC). SAS proceeded with this strategy and was able to realise and prove the benefits of the new technologies, the centralised administration model, and ease of deployment of the SAS image to the end-clients.

SAS chose the IGEL Zero HDX client (IZ HDX) with their design tailored for accessing Citrix XenDesktop and XenApp. IGEL offers high performance at a competitive price and the Citrix Appliance Mode enables the devices to boot quickly and directly to the Citrix login screen. The IGEL's two available hardware platforms ensure that the specific performance and connectivity requirements of different workstations can be readily met.

The IZ2 HDX is a high-performance, reliable Thin Client ideal for accessing XenDesktop and for multimedia applications like training. It's a low cost solution with no hidden or ongoing costs, is easily updated and upgradable, allowing future migration to other virtual solutions using the existing IGEL zero client hardware; and offers automated, central remote administration for quick and easy rollout with a reduction in management overhead.

#### THE SOLUTION

- ▶ Private cloud with Citrix XenApp / XenDesktop
- ▶ IGEL IZ2 HDX clients as well as UDC2 software thin clients as a temporary solution
- ▶ IGEL Universal Management Suite (UMS)

“One of the deciding factors for us in choosing IGEL, alongside the competitive pricing, was the management software that comes with the devices. It allows us to power up, reboot and update the devices, all from one central server” said Simon.

The IGEL Universal Management Suite (UMS) software, which comes free with every device, is used to set-up, maintain and apply firmware upgrades for all IGEL clients no matter where they are located, all from a central management suite using a policy-based graphical interface. It is a simple to use tool, which can have clients up and running in minutes. Intuitive to use, secure and scalable up to 100,000 thin clients, the IGEL UMS drastically reduces management time for IT administrators.

After a nine month project involving extensive testing, today the SAS Training Centres operate with 144 IGEL IZ2 HDX clients, connecting to 3 physical Citrix XenServer Hypervisor servers on a 10 Gigabit Ethernet network, each running virtualised Citrix XenDesktop, Citrix Provisioning Server and Citrix Web Interface Server (for redundancy). The infrastructure

also has two cache servers, alongside a domain controller, SQL Server and the IGEL UMS server – the entire solution offers High Availability and automatic failover and redundancy to ensure an uninterrupted service to the training rooms. Nastek secured the technology for SAS through its distributor Arrow ECS, which specialises in providing end-to-end IT infrastructure solutions including cloud services, data centre solutions and networking & security.

#### CUSTOMER BENEFITS

- ▶ Improved training set-up time
- ▶ Reduced management time
- ▶ Improved user experience
- ▶ Reduced power consumption and more environmentally-friendly

Simon commented that the roll-out had been fairly smooth. There was some initial development required to be able to deploy the US based Windows 2008 R2 images on XenDesktop but once this had been completed in roughly a day-and-a-half, subsequent images were quickly up and running. The adaptation was required to enable the training session image to be successfully delivered to multiple delegates at the same time on the UK infrastructure.

#### Feedback wholly positive

“The feedback from our training delegates has been very positive. They love the speed of sign in and the performance of the new system,” said Simon. “The trainers also love the ease of use of the system and internally we have radically reduced the time required to manage the whole environment.”

“Today, SAS effectively has an on-demand training system where courses can be set-up and changed in minutes rather than hours.”

The new solution is also much more cost effective and environmentally friendly to run. The virtual infrastructure uses significantly less power and creates significantly less greenhouse gas emissions over its lifetime than traditional server and PC networks. In fact, when the Fraunhofer Institute for Environmental, Safety and Energy Technology examined the climate-related impact of virtual desktop installations it concluded that compared to conventional workstation PCs, solutions using IGEL clients and Citrix XenDesktop could lower global warming potential by up to 63%.

#### ROI in just under 2 years

Simon concluded: “Today's training system is the flexible and easily managed solution that we were looking to implement and we expect a return on our investment to be achieved in approximately 2 years.”

**DE****GERMANY (HQ)**

IGEL Technology GmbH  
 Hanna-Kunath-Str. 31  
 D-28199 Bremen | Germany  
 Phone +49 421 52094-0  
 info@igel.com | www.igel.de

**AU****AUSTRALIA**

IGEL Technology Pty. Ltd.  
 Suite 18 | Level 22  
 101 Grafton Street  
 Bondi Junction, NSW, 2022  
 Australia  
 Phone +61 432103599  
 info@igel.com | www.igel.com

**AT****AUSTRIA**

IGEL Technology  
 Branch Office Austria  
 Wienerbergstraße 11/A12  
 Vienna Twin Towers  
 1100 Wien | Austria  
 Phone +43 1 99 460-6238  
 info@igel.com | www.igel.com

**BE****BELGIUM**

IGEL Technology BVBA  
 Researchpark Haasrode 1820  
 Interleuvenlaan 62  
 3001 Leuven (Heverlee)  
 Phone +32 16 3947 57  
 info@igel.com | www.igel.com

**CH****SWITZERLAND**

IGEL Technology GmbH  
 Branch Office Switzerland  
 World Trade Center  
 Leutschenbachstraße 95  
 8050 Zürich  
 Phone +41 44 308 37 41  
 info@igel.com | www.igel.com

**CN****BEIJING**

IGEL Technology  
 Care of: Melchers Beijing Ltd.  
 Beijing Tower | Room 503-504  
 10 Changan Ave. (East)  
 Peking 100006 | China  
 Phone +86 10 65257775  
 info@igel.com | www.igel.com/cn

**SHANGHAI**

IGEL Technology  
 Care of: Melchers (Shanghai) Ltd.  
 13 Floor | East Ocean Centre  
 588 Yanan Road (East)  
 Shanghai 200001 | China  
 Phone +86 21 6352 8848  
 info@igel.com | www.igel.com/cn

**FR****FRANCE**

IGEL Technology  
 57, Esplanade du Général de Gaulle  
 92081 PARIS LA DEFENSE CEDEX  
 Phone +33 1 46 96 56 89  
 france@igel.com | www.igel.fr

**NL****THE NETHERLANDS**

IGEL Technology  
 Orteliuslaan 850  
 3528 BB Utrecht  
 Phone +31 30 767 1055  
 benelux@igel.com | www.igel.nl

**SE****SWEDEN**

IGEL Technology GmbH  
 Branch Office Sweden  
 Sommarhemsvägen 1  
 46260 Vänersborg  
 Phone +46 708 57 04 22  
 info@igel.com | www.igel.com

**UK****UNITED KINGDOM**

IGEL Technology Ltd  
 Merlin House, Brunel Road  
 Theale | Reading | Berkshire  
 RG7 4AB | United Kingdom  
 Phone +44 118 340 3400  
 info@igel.com | www.igel.co.uk

**US****UNITED STATES**

IGEL America Sales Corporation  
 616 Corporate Way, Suite 2-3263  
 Valley Cottage | NY 10989 | USA  
 Phone +1 845 589 5900  
 info@igel.com | www.igel.com

IGEL America Services, LLC  
 2106 Florence Avenue  
 Cincinnati | OH 45206 | USA  
 Phone +1 954 739 9990  
 info@igelamerica.com | www.igel.com



Phone: +44 (0) 845 527 7985

Fax: +44 (0) 845 527 7986

Sales@nastek.co.uk

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