WILLIAM HILL TRANSFORMS EFFICIENCY, SCALABILITY AND AGILITY WITH PRIVATE CLOUD

CUSTOMER
WILLIAM HILL

WEB SITE
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INDUSTRY
MEDIA & ENTERTAINMENT

LOCATION
LONDON, UK

KEY CHALLENGES
- Accelerate ability to roll out new products and make changes
- Save time for IT staff
- Reduce the number of manual tasks needed to deploy new services and applications to production

SOLUTION
Migrated private cloud to VMware NSX-T Data Center, together with VMware vSAN storage, to build a Software-Defined Data Center (SDDC)

IMPACT
- Improved scalability, enabling fast, flexible response to the demands of major sporting events
- Saved time both for developers, and for engineers – at least 20%
- Cut time to market for new products, thus improving competitiveness

William Hill, one of the biggest names in gaming, is on the cutting edge in a highly innovative industry. To maintain this position, it needs an IT infrastructure that is secure, easy to manage and cost-effective – but, most importantly, which allows its developers to build apps and put them into production extremely rapidly. VMware's Software-Defined Data Center (SDDC), has enabled it to achieve this goal and to stay at the forefront of its market – rolling out hundreds of product changes during major sporting events, and keeping up with more than five million price variations per day.

Employing more than 16,000 people in eight countries, William Hill is continually innovating to bring its customers engaging ways to bet and game, including in betting shops, sports books, online or on mobile devices. Its online platform generates 5.2 million transactions per day, a figure which grew 14% in six months. In 2017 the company reported net group revenue of £1.7 billion.

Challenge

William Hill is a leading player in the fast-moving, highly competitive global gaming market. Technology is a key component of the company's business strategy.

Time to market is critical. William Hill wants to be quicker to absorb new acquisitions, faster to launch in new markets, and faster to roll-out new digital products to customers. It also needs to be quick to scale up. Around major sporting events, such as the Grand National horse race, William Hill needs to scale out hundreds of apps in seconds, and give customers a reliable, responsive experience every time. Its online gaming platforms publish more than 5.1 million price changes every day.

"There is very little loyalty in the gaming sector," says Ben Fairclough, Infrastructure Architect at William Hill. "If the app doesn't work, customers will take their money elsewhere."

While it wants to improve how it delivers new services, the business must also control costs and maintain high levels of security. Data must be held in the right localities, to comply with stringent compliance requirements – for example, UK gaming data can only be held in the UK.

William Hill's traditional infrastructure approach – blade chassis and storage arrays, was failing to support business agility. Developer teams were being frustrated, manual processes were slowing change management, and the cost of additional capacity was too great. With at least 30 products being added or changed each month, and a team of 1,000 developers, this monolithic environment was a significant issue.

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"With Kubernetes and VMware NSX-T Data Center on-premise, we can scale out easily for major events like the Grand National, where we see five or six times more load than we would do on a normal Saturday."

BEN FAIRCLOUGH
INFRASTRUCTURE ARCHITECT
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VMWARE FOOTPRINT
• VMware NSX-T™ Data Center
• VMware vSphere® 6.5
• VMware vSAN™ 6.6
• VMware vRealize® Operations™

"We were struggling to scale-out intelligently," says Fairclough. "The number of virtual machines in our cloud was increasing considerably, and the manual processes required to set up networking were becoming a headache. We wanted to explore Hyperconverged Infrastructure (HCI)."

Action

Fairclough says HCI solutions from HPE, Cisco, Nutanix and VMware were considered, before running a Proof of Concept with a shortlisted two on common hardware and a vendor agnostic load balancing.

"The VMware vSAN™ solution proved to be 30% faster to build, deploy and optimize than the competitor. After four weeks the competitor still needed adjusting," says Fairclough. "We also tested deduplication and compression, and there was a 1.5x difference on VMware. We were completely sold on it."

Testing in the specially-created lab, he continues, showed a 13.9GB/second capacity across 19 nodes, compared with 6GB/second on the all-flash array: "More than double the performance on a single platform, and comfortably more than our developers will consume."

The decision was made to migrate the existing SDN platform from VMware NSX® Data Center for vSphere® to VMware NSX-T™ Data Center, with VMware Hyperconverged Infrastructure (HCI), powered by vSAN delivering secure shared storage. This runs on-premise at its data center in Leeds, in the UK. Around 80% of William Hill's applications run on this cloud, either in Kubernetes containers or on virtual machines using VMware vSphere®.

"We moved around 5,500 virtual machines within an eight-hour period, with a limited amount of downtime – the move went smoothly, and we now have a completely Software-Defined Data Center (SDDC), based around NSX-T and vSAN 6.6," says Fairclough. "With vSAN, we can now scale the service, in a cost-efficient manner, as the business demands."

NSX-T enables William Hill to run a single network platform to support its older legacy applications, as well as more recent cloud-native workloads, with everything configured by policies. It also enables the micro-segmentation of containers, in addition to their VMs. Instead of having to create multiple deployment plans, as was previously required, developers can now create one plan which covers all required aspects, including firewall rules and load balancing.

Results and Impact

The project was delivered two months ahead of schedule. Fairclough estimates this equates to a 300% saving in time and manpower resource. "For the first time in three years we've had a six-month period where there have been no requests for additional IT resource."

Today there are 39 nodes deployed. The VMware HCI hosts the entire William Hill development platform and one third of its production. "Our development platform is three times busier and three times larger than production," says Fairclough. "vSAN has worked astonishingly quick. Deduplication and compression rates are at 240%."

This will have a huge impact on the business, he continues. Being able to flex the infrastructure and move resources around projects on demand, makes William Hill more efficient and more responsive:

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times more load than we would do on a normal Saturday. We can just change a number in a configuration file, and then release it into development, pre-production and production – it has become significantly quicker, easier and cheaper to make changes."

"We have more than 1,000 developers, and they're all saving a considerable amount of time, for example because they only need to create one configuration file when they deploy their code – and because NSX-T monitors what's going on in Kubernetes and automatically makes things happen, without the developer having to make any manual changes," says Fairclough. "Then, our system engineers, network engineers and operations team all save a lot of time. It's about an hour whenever a product is released – overall, I'd estimate they save 20 to 25% of their time due to NSX-T."

Under the previous system, says Fairclough, it might have taken six weeks to put in place the infrastructure to support a new development project. Today, the required infrastructure is in place in hours. Already, William Hill's launch of operations in New Jersey has been done entirely on the HCI platform.

"From the CIO and CEO down, the main driver for the business is speed of delivery," he says. "Our previous, monolithic infrastructure hindered us from getting to the next level. HCI takes us there."

He says the solution delivers ongoing cost and resource savings. There is less bureaucracy involved in managing the environment, and there is six-figure cost avoidance on the procurement of new storage and new blade chassis.

"HCI was never solely about the infrastructure," says Fairclough. "We estimate around 20% of the benefit will come from automation, the ease of configuration and self-healing. The aim is to get ourselves into a position where we can move infrastructure and not have to worry about the consequences. It will make us very dynamic."

Looking Ahead

Within the next year, William Hill is planning to add artificial intelligence (AI) capabilities, so its system can automatically allocate more resources where required, for example to handle major sporting events. It is also looking to roll out the NSX-T platform to its London data centers, and to its data center in Gibraltar.

The plan is then to move the remainder of its applications to an Elastic Kubernetes Service, either on-premise or in AWS, with an end goal of vSAN being the platform for all containerized applications.

"Ultimately, we want Infrastructure as Code," says Fairclough. "Our developers can develop their application, register a container, and not have to worry about infrastructure. The VMware environment is automated and can self-heal. We can then make our infrastructure choices based on a business decision – where does it need to pull data from, or who does it need to speak to, rather than a cost one."

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