|  |  |
| --- | --- |
|  | |
| **Tertiary ICT Excellence Awards Submission Form** | |
|  | |
| **Submitter Name:** | Michael France and Erwin Araneta |
|  |  |
| **Abstract Title:** | Time constrained VMware to Hyper-V migration |
|  | |
| **Describe the technology or process that is core to your submission. Please be precise in describing exactly why this should be considered for the awards (max 500 words).** | |
| Together with Cyclone, we developed and implemented a completely new virtualisation platform to replace our ageing Cisco UCS infrastructure, which had reached end-of-life and was running our VMware-based on-premises environment.  This transformation was not just about replacing hardware, it was a complete replatforming. The original environment hosted over 120 production VMs across business-critical applications, infrastructure services, and project environments. Our goal was to improve performance, simplify management, align with our broader technology strategy, and reduce cost, all within a tight timeframe imposed by the expiration of our VMware contract.  We leveraged a proven architecture that had been successfully deployed by SIT (Southern Institute of Technology), which was also a Cyclone client. Their success and confidence in the design gave us a solid foundation and reduced technical uncertainty.  The solution included:   * A newly architected compute stack using modern, energy-efficient hardware. * Fabric switches integrated into our existing Pure Storage FlashArray, which continued to serve as our high-performance, reliable storage platform. * A new Hyper-V failover cluster built on Windows Server Datacenter, managed via System Center Virtual Machine Manager (SCVMM). * A migration of backup infrastructure, with Commvault’s Media Agent relocated to the new stack, allowing us to retire our legacy backup server. * Integration of our Digital Experience team’s virtual servers into the same platform. * Full decommissioning of VMware NSX-T and re-architecture of core routing to align with Hyper-V networking.   Migration was performed with minimal disruption. Most servers retained their IPs, reducing the need for changes in dependent systems. For infrastructure services (e.g., AD, DNS, DHCP), a staged cutover was executed to ensure continuity. The migration was done entirely in-house by our internal team, supported by vendors.  This project is award-worthy because it delivered a strategic infrastructure shift under pressure — executed by a small team, with minimal risk, and high technical quality. It demonstrates innovation in design, strength in delivery, and real-world application of sector collaboration and vendor partnerships. | |
|  | |
| **Briefly summarise how your submission supports and is valued by your organisation. Describe the customer or business benefits of the technology or process. For example, which key strategies did the enhancement meet, what business problem needed to be solved, or perhaps how does a key customer group benefit from a new or improved delivery process. (max 500 words).** | |
| The business case for this project emerged from a convergence of strategic needs and industry disruption. Our existing virtualisation infrastructure was beyond support and presented increasing operational and security risk. At the same time, VMware’s acquisition by Broadcom introduced significant uncertainty, including changes to licensing models, contract terms, and long-term viability for smaller institutions like ours.  Our VMware agreement was set to expire in March 2025. Entering into a new three- or five-year commitment under the new licensing model would have resulted in significantly higher costs. We began exploring alternatives, and found that Microsoft Hyper-V, already covered under our existing Microsoft Datacenter licensing, offered a viable and cost-effective path forward.  This platform shift aligned strongly with our organisational technology strategy:   * We are a Microsoft-first environment with Office 365, Azure, Entra ID, Intune, SharePoint, and Teams already embedded across the business. * Hyper-V allowed us to extend this ecosystem into our infrastructure layer, aligning our virtualisation environment with our broader digital architecture. * By remaining on-premises, we retained full control over sensitive workloads, while also laying the groundwork for a future hybrid-cloud model.   The financial benefits were significant. Not only did we avoid a multi-year VMware renewal, but we also reduced long-term licensing and support costs, with no additional expense for Hyper-V itself. The project enabled us to retire legacy infrastructure, including our datacentre-based backup server, which reduced our footprint and power consumption.  From an operational standpoint, the new platform has proven stable and performant. However, this shift required significant upskilling. Most of our engineering team had deep experience with VMware but limited exposure to Hyper-V. This introduced a learning curve, particularly around cluster configuration, SCVMM (System Center Virtual Machine Manager), and differences in networking. One engineer was released early to build capability ahead of the hardware arrival, and the rest of the team rapidly upskilled through hands-on deployment, lab work, vendor consultation, and support from external organisations. The result is a more versatile and capable team, now equipped with both VMware and Hyper-V expertise.  As confidence grew, other internal teams began to notice improvements post-migration, including faster system performance and easier recovery scenarios. The integration of Hyper-V into our Microsoft environment is already yielding efficiencies in patching, security, and virtual machine management, and will continue to support our transition to cloud-native services.  Perhaps most importantly, this project reinvigorated the team. After a period of shifting organisational priorities and paused projects during the Te Pūkenga transition, this initiative provided a high-impact opportunity to deliver something tangible and future-focused. The success of the project has strengthened both capability and morale across the Digital team.  In summary, this project:   * Solved a critical infrastructure risk * Delivered significant cost avoidance * Built internal capability in new technologies * Aligned our infrastructure with our strategic Microsoft stack * Enabled performance and operational improvements * Provided a clear, morale-building win during a challenging period   It stands as an example of smart decision-making, strong technical delivery, and strategic alignment with business goals. | |
|  | |
| |  | | --- | | **Describe the broader applicability of the enhancement across different teams, departments, or institutions and how it might support long-term transformation and adaptability in the IT landscape.** | | The success of this project has relevance well beyond Open Polytechnic. As Broadcom’s acquisition of VMware continues to reshape licensing models and increase costs it impacts many organisations across the education sector, particularly those with smaller budgets and limited internal resources . A valid question is what the long-term viability of is staying on the VMware platform.  What our project demonstrates is that moving off VMware is possible. It does require effort, planning, and upskilling, but it is not something to be feared. With the right support and mindset, it can be done successfully, on time, and with long-term benefit.  We were able to achieve this without a large budget, without external consultants running the show, and within a tight six-month window. The approach we took by leveraging existing Microsoft licensing, collaborating with other institutions, and drawing on vendor partnerships, can be replicated elsewhere. The key difference-maker was strong internal ownership combined with targeted, well-timed support.  There are dozens of ITPs and smaller organisations facing the same questions we did:   * Do we renew VMware under the new model, or explore alternatives? * Is Hyper-V viable at scale? * Will we be able to manage it in-house?   Our experience can now serve as a blueprint, or at least a confidence builder, for those going through similar evaluations. We’ve already had conversations with peers across the sector who are looking for real-world examples to guide their own decisions.  This project also supports long-term adaptability. The platform we’ve built is not just a short-term fix, it’s scalable, manageable, and aligned with modern infrastructure standards. It positions us well for hybrid cloud strategies and reduces vendor lock-in, all while maintaining performance and control.  In summary, this work shows that transitioning away from VMware is not only possible, but practical, and can be done in a way that reduces cost, risk, and complexity. |   **Describe how the project was taken from vision/idea to delivery, what challenges were met and how they were handled on the way (max 500 words).** | |
| This project began as a standard hardware refresh, a much-needed replacement for our ageing Cisco UCS infrastructure. However, by mid-2024, the wider industry landscape shifted dramatically. The acquisition of VMware by Broadcom introduced uncertainty, steep cost increases, and changes in licensing models that were unfavourable to smaller institutions like ours.  With our existing VMware contract expiring in March 2025, we were facing a significant long-term commitment. Our leadership team posed a simple but bold question: Can we use this refresh as an opportunity to move away from VMware entirely?  It was an ambitious ask, a full migration to a new platform, in parallel with a hardware replacement, all to be completed within six months. After consulting with trusted partners and reviewing examples of successful Hyper-V implementations at other institutions (including Auckland Transport), we committed to the plan.  **Early Steps: Foundations and Capability**  We knew early success would depend on internal capability. One engineer was released from BAU work and given a six-week head start to focus solely on researching and planning the Hyper-V environment. This included testing lab configurations, building confidence with SCVMM, and understanding networking implications.  Cyclone, our hardware partner, delivered the equipment earlier than expected, giving us additional time for hardware build and testing. They also connected us to their internal Hyper-V specialists, who provided design validation and ongoing technical support. This partnership helped us make faster, more informed decisions under pressure.  **Key Challenges**   1. **Upskilling in Hyper-V:** While our team was deeply experienced with VMware, Hyper-V was new territory. There was a steep learning curve, particularly around networking, clustering, and failover configurations. We handled this with hands-on labs, vendor advice, and peer learning. 2. **Power Constraints in the Data Centre:** Our rack had limited power availability. We had to carefully sequence the decommissioning of old infrastructure with the staged install of new servers, a logistical challenge that required tight coordination. 3. **Parallel Projects and Competing Priorities:** During this period, we were also implementing a new server environment for our Digital Experience team. We adapted the deployment to use the new Hyper-V stack, a decision that created efficiency and alignment. We also moved to a new FMIS platform during this window. 4. **Network Redesign:** Removing VMware NSX-T meant rethinking parts of our network routing and firewall integration. We worked closely with FINAO, who manage our firewalls, to ensure the new design met security and connectivity requirements.   **Execution and Delivery**  By mid-January, with foundational work complete, the rest of the team joined the migration effort. Management supported the project by freeing additional team members to focus exclusively on the work and assigning a BA to handle communications and coordination with the wider organisation.  We migrated most VMs without changing IPs, reducing downstream impact. Core services (Active Directory, DNS, DHCP, SCCM) were migrated in a phased and controlled way, ensuring continuity. Unexpected issues were resolved quickly by a now highly engaged and capable team.  The project was completed by March 2025, on time, on budget, and with zero unplanned downtime. | |
|  | |
| **Please detail any technologies that were implemented to deliver your enhancement or supply any other information you think may assist your submission (max 500 words).** | |
| The success of this project was driven by careful selection and integration of proven technologies, supported by strategic vendor partnerships. Our goal was not just to replace hardware or platforms, but to deliver a future-ready, simplified, and resilient infrastructure that aligned with our long-term strategy and licensing position.  Below is a summary of the core technologies and how they were used:  Compute and Virtualisation Platform   * HP DL360 Gen11 Servers (Cyclone-supplied): These replaced our end-of-life Cisco UCS chassis, offering increased compute density, better power efficiency, and lifecycle support. * Windows Server 2022 Datacenter Edition: Provided the core operating system for the virtualisation hosts. * Microsoft Hyper-V Failover Cluster: Formed the virtualisation layer for hosting production workloads, offering high availability and clustering for critical services.   🛠️ Management and Automation   * System Center Virtual Machine Manager (SCVMM): Enabled centralised management of the Hyper-V environment, including provisioning, migration, performance monitoring, and patching. * Windows Admin Center: Used as a lightweight, GUI-based interface for infrastructure and cluster management tasks.   Storage   * Pure Storage FlashArray//X: Continued as our primary enterprise storage tier. Pure’s performance, reliability, and data services (e.g., deduplication, compression, SafeMode snapshots) supported both legacy VMware and new Hyper-V workloads seamlessly.   Backup and Recovery   * Commvault Backup Suite: Our new media agent server was integrated directly into the Hyper-V environment, supporting faster backups and simpler job management. This allowed us to decommission a legacy backup server, reduce power consumption, and improve backup performance.   Network and Connectivity   * Re-architected Network Topology: The removal of VMware NSX-T required a redesign of routing and connectivity, which was delivered collaboratively with FINAO (our firewall and network security partner). * Fabric Interconnects: Used to provide high-speed connectivity between hosts and storage.   Partner Support and Knowledge Sharing   * Cyclone: Provided hardware, architecture design, and access to internal technical experts who validated decisions and supported early configuration work. * Auckland Transport: Shared real-world Hyper-V experience, helping reduce design uncertainty and offering guidance based on lessons learned. * Microsoft Education and Licensing Teams: Ensured we could maximise existing licensing benefits and clarified capabilities within our agreements.   This integrated technology stack has given us a platform that is modern, performant, secure, and maintainable, and has positioned us well for future cloud-hybrid integrations without lock-in or high cost. | |
|  | |
| **Please supply the name, title and contact details of two people whom our judges may contact as referees. Ideally the referees should have knowledge of the implementation and its benefits from a customer or Institutional management perspective.** | |
| Matt Crighton – Digital Services Manager, Open Polytechnic and Dyego?  ----  Did we use a partner that could act of a referee? | |
|  | |
| **Please list all technology suppliers involved in the project.** | |
| **Cyclone, Purestorage, Microsoft, Commvault, Auckland transport, Finao** | |