White Paper
Intel® Xeon® processor E5-2650
Intel® Solid-State Drives
Intel® 10GbE Ethernet
Infrastructure-as-a-Service

Partner Collaboration on Intel® Technologies Improves Business Agility by Consolidating Pre-production IT Environment Sprawl

Telstra's cloud solution stack, based on Intel® Xeon® processor E5-2650, Intel® Solid-State Drives, and Intel® 10GbE Ethernet provides scale-out architecture to improve business agility

"The new environment takes only 20 seconds to create a Telstra SOE VM, which is 180 times faster than the existing environment. With this outcome, Telstra now has an environment that can allow developers to login from anywhere within Telstra to the IaaS environment and create VMs within seconds. This allows developers to focus on application development rather than environment setup and management."

– Geoff Halprin, Manager Automation Enablement, Standardised Services, Telstra

Executive Summary

Collaboratively, Telstra, Intel, Quanta QCT and Red Hat have successfully launched an internal private cloud into Telstra's internal IT environment. The hardware and software solution enables Telstra to create virtual machine development environments within 20 seconds using Telstra's SOE VM images. This is 180 times faster than the previous environment.

Telstra now has an environment that can allow developers to log in from anywhere within the organization to the shared Platform-as-a-Service (PaaS) and/or Infrastructure as a Service (IaaS) using OpenShift Enterprise by Red Hat, and create VMs within seconds. This allows developers to focus on application development rather than environment set up and management.

The partnership between Red Hat, Telstra, Quanta QCT and Intel® has led to the successful deployment of this world-class PaaS and IaaS environment that helps Telstra to move ahead in their cloud service offerings in Australia and around the world.

Problem Statement

Telstra's software product development undergoes rigorous pre-production stages, and at each stage, a unique environment is created for testing. The number of separate environments that have been produced has skyrocketed to a ratio of 5:1 of test environments to production, which made processes completely unmanageable and unmaintainable. Obtaining new machines could take weeks or months if physical kit was required, and in the best case an hour for a new VM to be supplied. This led developers to seek ways around the formal process, including using spare machines under their desk and makeshift VM farms.

Moreover, security controls made these separate environments difficult to access from anywhere on Telstra's corporate network. The developers utilize these new pre-production environments for a wide range of activities, from application development, change testing and qualification, to assisting with porting activities, such as from RISC to x86 application migration.

This paper will illustrate how the integrated software and hardware stack delivered a solution that improved pre-production environment creation, helping Telstra business units decrease the time to money and increase business agility for applications in the cloud.

Partner Collaboration on Intel® Technologies Improves Business Agility by Consolidating Pre-production IT Environment Sprawl

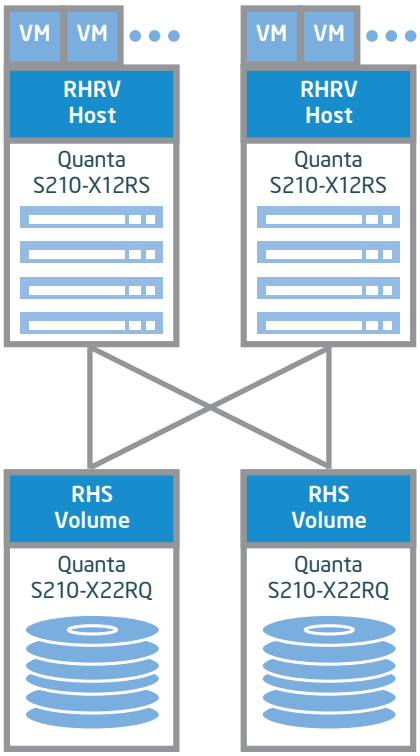
Unifying unique IT environments

Telstra wanted a reliable, available and responsive environment to replace and consolidate the proliferation of unmanaged development environments, which were created by developers across the Telstra network. Telstra IT needed a cloud solution stack that would provide PaaS and IaaS with production-integrated with the enterprise Active Directory. This production environment for application development and testing had to be accessible to every developer within the Telstra corporate network.

The Telstra scale-out solution architecture for the development and test environment was based on the integration of Red Hat software, Quanta hardware and Microsoft Active Directory. The Red Hat software and Quanta hardware solution stack is illustrated below:

COMPUTE	STORAGE
Red Hat Enterprise Virtualization Hypervisor 3.1	Red Hat Storage 2+ (RHEL)
OpenShift Enterprise by Red Hat	
Red Hat Enterprise Linux® 6.4 Red Hat Enterprise Virtualization Manager 3.1	
Quanta S210-X12RS	Quanta S210-X22RQ
Intel® Xeon® processor E5-2650	Intel® Xeon® processor E5-2650
2.5" hot-plug Intel SSDs 120GB	2.5" hot-plug SSDs 120GB
Intel® 82599 10G SFP+	Intel® 82599 10G SFP+

Solution Design



Telstra has reviewed each technology's strengths to evaluate their capability to meet its specification:

- Scale-out compute and storage technologies like Red Hat's solutions have rapidly gained popularity over the past few years, successfully crossing the chasm from niche technology to mainstream enterprise solution.
- The Quanta S210-X12RS (compute) and S210-X22RQ (storage) not only cover performance and efficiency, but also enable enhanced service operations, that accounts for a significant portion of the IT budget.
- Intel® SSDs are particularly suitable for intensive data read application environments. They are the ideal choice to replace SAS hard drives for content distribution network storage, providing better cost and performance.
- Intel® 10GbE Ethernet is the number one-selling 10GbE solution in the marketplace today. Many organizations are using it to migrate from 1GbE to simplify and save by consolidating GbE connections onto the more capable 10GbE.

By utilizing this world-class solution stack from multiple vendors, Telstra now has a production-deployed PaaS and IaaS that will meet Telstra IT's requirements for a reliable, available and responsive environment for development and testing. The solution will scale horizontally by adding resources when required. It can scale elastically by adding or removing the resources at runtime. This applies to both the storage nodes and the compute nodes. This deployed solution stack was benchmarked against the previous environment's VM creation time, with results showing that Telstra can now create 180 VMs in the same time it took to create one VM in the previous environment.

Improving business agility with one solid IT environment

The launch of the new environment into production within six weeks of concept meant that the business can meet its technical requirements and shorten the time for return on investment (ROI). Ending VM sprawl allowed Telstra to save on hardware and software infrastructure, power and cooling, and heightened the security while lowering application to production cycles (time to business).

For more information on Intel® Xeon® processors, visit **https://www-ssl.intel.com/content/www/us/en/processors/xeon/xeon-processor-5000-sequence.html**

1013/EDH/PMG/01/PDF 330027-001US