ENL **Emerging Networks Labs**

Company Name: GWLE (Great-West Lifeco Inc.)

Project Title: Lantern 2

Funding: Commercialisation Fund Programme

Profile of Company

Established in 1939, Irish Life is Ireland's leading life and pension company. Since July 2013 Irish Life has been part of the GWLE group of companies, one of the world's leading life assurance organisations. GWLE and its subsidiaries have approximately $1.2 trillion in consolidated assets under administration and are members of the Power Financial Corporation group of companies. Irish Life is committed to delivering innovative products backed by the highest standards of customer service and, as part of GWLE, has access to experience and expertise on a global scale, allowing the company to continuously enhance its leading range of products and services

Problem to Be Solved

GWLE operate a large data-center in the premises of Irish Life Financial Services, Dublin. Within a data-center network, there are different classes of traffic pertaining to different types of applications such as VoIP, video-conferencing, network-control, video-streaming, web, etc. These different types of traffic require differentiated network service, referred to as QoS control. The process of QoS planning, wherein the link bandwidth is allocated appropriately to different class of traffics, is an important process having significant repercussions in terms of under-provisioning or over-provisioned led increased OPEX. There are currently a lack of available techniques to assist network administrators in allocating optimum bandwidth for each of the QoS classes, which is a difficult problem as traffic for any of the class cannot be easily determined in advance.

How Gateway Delivered Solution for Industry

TSSG has expertise in network management and developed an application called LANTERN, that, upon being fed traffic samples at regular intervals and pre-set QoS targets for different classes, calculates a confirming bandwidth for each class referred to as Effective Bandwidth (EB). Lantern can largely assist in network-planning problem described before as it is the manifestation of the optimum allocation for each QoS class. However, it is not efficient to continuously analyse traffic like Lantern does. An enhancement to Lantern was developed (US Patent US20170019310A1) which after a series of EB measurements, models a linear relationship between the mean throughput and EB. The resultant model can be used by network administrators for planning use-case. Enhanced with the generation of described linear relationship model, the system is referred to as Lantern2. In prototyping Lantern2 and demonstrating a solution for network planning problem at GWLE, the existing Lantern web-app was revamped including bug-fixes and for compatibility to the latest versions of used frameworks (Java/Grails). Lantern2 was packaged and configured with zero-touch provisioning in 2 portable computers for being installed in the GWLE premises. The generation of this linear relationship model was an offline process and 2 visits were made on-site in a span of 4 weeks to take database dumps from running Lantern2 systems. Thereafter, the dump containing important data field was analysed via a Python application to generate the model, produce the supporting references in terms of graphical plots and included in a deliverable report.

Impact for the Company

The Lantern2 system provided interesting insights about the traffic behaviour of their network. This was an outcome of the graphical plots, that showed mean and peak bandwidths for every class at different times in the day and days of the week. The company realized that Effective Bandwidth value and Lantern2 can have a much bigger impact in another problem – SD-WAN path optimization. Acting upon their input, TSSG has started research and development in enhancing Lantern for the prescribed problem space.

Contact us to find out how we can help you
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