

Design and Implementation of a Unified Box for Offering Network Path Measurement as a Service (PI: Dr. Chang Kow Chuen Rocky; 2011/12)

In the last two tier-3 projects, we have successfully designed and prototyped a suite of novel methods for measuring network-path quality. In this follow-on project that focuses on development, we will develop a novel network measurement appliance with the following main features: 1. (Providing measurement as a service) This appliance will support measurement conducted from the client and server side. For the client-side measurement, this appliance alleviates clients from conducting the measurement by themselves. This appliance also supports server-side measurement by inducing data from browsers for seamless measurement. 2. (High performance) To support real-world applications, the appliance will be implemented on a NetFPGA-like platform using a software-hardware approach and on OpenWrt routers for home networks. 3. (Coordinated measurement) An advanced feature of this appliance is the ability of conducting coordinated measurement using a number of distributed appliances. The system with highly usable GUI and visualization tools will be developed. Besides, we will deploy two large-scale measurement platforms for testing and showcasing the appliances. The first one is a platform for testing residential broadband services in Hong Kong, and the other is a platform for monitoring an IPv6 academic network in China which includes many nodes in the Guangdong province and Shenzhen.