Séminaire ICI : Lefteris Mamatas

16 Mars 2018, 11:00 – 12:30

Titre du séminaire et orateur

Elastic Content Distribution based on Unikernels and Change-Point Analysis.

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Date et lieu

Vendredi 16 mars 2018, 11h.

ENSEA, salle 384.

Abstract

The emerging 5G networks call for new approaches to CDNs through addressing challenging issues, such as: (i) scalable and holistic resource utilization, spanning from large data centers to the user device, including edge clouds; (ii) incorporation of heterogeneous physical and virtual resources; and (iii) adaptability to dynamic user requirements, server resources and network capacity constraints. Although user-generated content is the driving force for new services and should be placed (or cached) locally, it is costly to deploy traditional clouds near end-users and such virtual machines (VMs) are inefficient for dynamic network conditions (i.e., may boot-up in minutes). We propose an elastic content distribution platform that serves the Internet content using tiny Unikernel-based VMs which we named Micro Content-Proxies (MCPs). MCPs are hosting one or a few videos each, appear rapidly in nearby cloud deployments, serve users and then disappear. The studied environment provides content dissemination through very dynamic, almost "fluid" VM placement, since the content is packaged with the server software with just a minor increase in size. So, we reposition the content caching and provisioning as a VM orchestration problem. This talk is based on the research results of our MONROE H2020 Open Call project titled "Multihoming with Ephemeral Clouds on the Move".

Short bio

Lefteris Mamatas is an Assistant Professor in the Department of Applied Informatics, University of Macedonia, Greece. Before that, he was a researcher at University College London, Space Internetworking Center/Democritus University of Thrace, and DoCoMo Eurolabs in Munich. His research interests lie in the areas of Software-Defined Networks, Cloud Computing and Network Function Virtualization. He participated in many international research projects, such as NECOS (H2020), CORAL (WiSHFUL OC2 project), MEC (MONROE OC2 project), Dolfin (FP7) and UniverSELF (FP7). He has published more than 40 papers in international journals and conferences. He served as a General or TPC Chair for the

WWIC 2016 and 2012 conference, the INFOCOM SWFAN 2016, 2017 and the E-DTN 2009 workshops. He was a Guest Editor for the Elsevier Ad Hoc Networks Journal.