Cloud Testing Industry Event

Thursday May 7th 2015, 11:00 - 14:00

IBM Dublin
G32 - Thompson Room, Bldg 6,
Dublin Technology Campus,
Damastown Industrial Estate,
Mulhuddart, Dublin 15

Cloud computing is everywhere, inevitable: originally a layered abstraction of a heterogeneous environment, it has become the paradigm of a large-scale data-oriented system. And while it has some interesting features (easy deployment of applications, resiliency, security, performance, scalability, elasticity, etc.), testing its robustness and its reliability is a major challenge to everyone working with the Cloud. The Cloud is an intricate collection of interconnected and virtualised computers, connected services, complex service-level agreements.

From a testing perspective, the Cloud is a complex composition of complex systems. Is global testing in the cloud possible? If not, what can we conclude from partial tests? The question of testing this large, network-based, dynamic, composition of computers, virtual machines, servers, services, SLAs, seems particularly difficult. Come along to this industry seminar to hear more about issues around Cloud and Testing.

lero THE IRISH SOFTWARE RESEARCH CENTRE

11:10-11:25

DR. CHRISTINA THORPE

LERO

Cloud computing is becoming increasingly prevalent; more and more software providers are offering their applications as Software-as-a-Service solutions rather than traditional on-premises installations. In order to ensure the efficacy of the testing phase, it is critical to create a test environment that sufficiently emulates the production environment. Thus, Cloud applications should be tested in the Cloud. Cloud providers offer command-line tools for interacting with their platforms. However, writing custom low-level scripts using the provider's tool can become very complex to maintain and manage when variability (in terms of providers and platforms) is introduced. The contributions in this paper include: the development of a high level Domain Specific Language for the abstract definition of the application deployment process, and resource requirements; and a generation process that transforms these definitions to automatically produce deployment and instantiation scripts for a variety of providers and platforms. These contributions significantly simplify and accelerate the testing process for Cloud applications.

11:25-11:40

HAYTHAM ASSEM

IBM

Testing Voice and Video over Internet Protocol (VVoIP) for enterprise applications is a non-trivial effort for system and performance engineering teams who need fidelity, accuracy and precision in their tests. VVoIP is a real time application that allows transmitting voice and video through the Internet network. Recently, there has been progress in this field due to continuous effort in developing new voice and video codecs that react appropriately under different network conditions. In addition, there are other factors that indirectly benefited VoIP. Today, computer networks are faster due to advances in hardware and breakthroughs in algorithms. In this talk, we will share some of the outcome of a research project that has been running in IBM in collaboration with several university partners for two years. Particularly, the focus of this talk will be on two main issues. First, introducing new improved methods for assessing, monitoring and testing the voice and video call quality. Second, proposing two new adaptive techniques to improve the VoIP call quality: a generic switching codec algorithm and an adaptive redundant control algorithm.

11:40-11:55

DAVID TRACY

LOGENTRIES

I will consider a number of aspects of testing relevant to our use of the Cloud in delivering our log management and analysis service. This will include aspects of our SDLC, the roles of a centralised logging service as well as testing to determine the appropriate use of Cloud platforms in terms of cost and performance.

11:55-12:10

ROSS SMITH

MICROSOFT

The Future of Software Testing: Delivering Quality at Scale Across Devices and Platforms in a Highly Connected World

Alexander Graham Bell realized the value of the "network effect" in 1908 - the idea that critical mass improves the value of the network. Metcalfe's law has guided technological developments for decades. However, this exponential growth challenges the notion of software testing as a method to assure and improve quality. For every one of Metcalfe's n or n2, should we hire two more testers? The test matrix for any networked product has expanded beyond capacity. As we think about cloud computing, identity, privacy, and security, smart devices, a global workforce, games and social networking, and a revolution in content -- how do we ensure we can deliver a high quality experience at scale and on schedule? New approaches such as crowdsourcing, testing in production, big data and analytics must evolve, co-exist with --perhaps supplant -- traditional functional testing and related techniques of the past.

12:10-12:25

GERSON SUNYÉ

Applying Model-based Engineering to Test Distributed Systems

With the forecast growth in connected devices, from 400 million today to 50 billion by 2020 – testing in the Cloud will mean that data and data analytics are going to drive cloud test efforts from now on – and it's imperative, as products, companies, and organizations move to clouds, that testing the cloud does not begin until we analyze and understand the data adequately to know where to focus testing efforts, because it's impossible to test everything. In this context, I believe that MDE can help testers in two different ways:

- providing a common base for test data analysis, validation, comparison, manipulation.

- providing support for Domain-Specific Languages (DSL).

In this presentation, I will briefly talk about several issues on testing distributed applications and how the MDE can help testers to tackle them.

12:30-13:00 PANEL DISCUSSION

13:00-14:00 LUNCH AND NETWORKING

Speakers

Dr. Christina Thorpe graduated with a first class honours BSc (Hons) in Computer Science and Informatics from UCD in 2005. She completed her PhD in Computer Science and Informatics at UCD in 2011, under the supervision of Prof. Liam Murphy. Since then, she has been employed as a Lero postdoctoral research fellow in the Performance Engineering Lab, UCD, and an Assistant Lecturer in the School of Informatics and Engineering in the Institute of Technology Blanchardstown.

Haytham Assem is a Staff Research and Development Engineer at the IBM Dublin Software Lab working in the Innovation Project Office. He has five years of research and software engineering experience, with an initial year in Mentor Graphics and the latter years with IBM. He received a MSc from National University of Ireland, Maynooth (2013) and a BEng from Ain Shams University, Egypt (2005). His MSc was in conjunction with both IBM and NUIM. His MSc work resulted in an industry solution leveraged by IBM, as well as several publications in well-known IEEE and ACM conferences.

Haytham was a named inventor on more than twenty-five patents filed by IBM where three won the top-10 IBM patent awards, which were singled out from several thousand invention submissions World Wide. Haytham is currently pursing his PhD in Trinity College Dublin, School of Computer science and statistics. His current research interests are Applied Predictive Modelling, Machine Learning and Pervasive Computing.

David Tracey is currently the Lead Architect at Logentries and has over 25 years experience in a range of Software R&D roles at companies including Dell and Sun Microsystems. His research interests are in Cloud Services, Distributed Systems, P2P, the Internet of Things and he has also worked on the IEEE 802.15.6 WG on Body Area Networks.

Ross Smith (FRSA, Director of Engineering - Skype Translator - Microsoft Skype Division) really enjoys getting a paycheck to “play” with software for 25 years now, over 20 at Microsoft. In September, 2014, he was nominated and accepted as a Fellow of the Royal Society of the Arts. He is one of the authors of “The Practical Guide to Defect Prevention” and holds six patents. 42projects has aspired to promote cultural change, “bring buzz and laughter to the hallways”. He is a member of the leadership council for the Anita Borg Institute. He was also part of the organizing committee for TEDxSeattle, and has recently been working closely with iUrbanTeen.org and Spreeha.

In addition to his passion for creative techniques to improve the quality of the experience of using software, he’s explored organizational trust, enterprise gamification, management innovation, diversity and the future of education through games and with the Skype in the Classroom program. In December 2011, he was invited to the White House for a discussion on women in STEM. He was the keynote speaker for the American Road and Transportation Builder’s Transovation event in Fall 2014. The work of his teams have been mentioned in Forbes, The Economist, the Wall Street Journal, PSFK, the American Journal of Play, Harvard Business Review, and the London School of Business. He is a blogger for the Society of Human Resource Managers WeKnowNext site and regularly posts on management innovation. He is most excited by the current work on Skype Translator.

Gerson Sunyé is an Associate Professor at the University of Nantes since 2002, in the domain of software engineering, distributed architectures and validation. He received a Ph.D. degree in Computer Science from the University of Paris 6, France, in 1999. From 1999 to 2001 he was a postdoctoral researcher at the IRISA Computer Science laboratory. He has 4 years of industry experience in software development. He is author of several papers in international conferences and journals in software engineering. His research interests include software testing, design patterns and large-scale distributed systems

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