

EUROCLOUD
PORTUGAL
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EDITORIAL

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Coordinator, IPP/SIC-SCC

In an era in which the European Union model is under such heavy pressure, specially in the economic and innovation fields, building partnerships and networks between companies, academic and public institutions, is fundamental to reinforce European capability to stand out as a reference. Partnerships, especially if developed across European countries, eliminating all kinds of frontiers and barriers, are the key to surpass the problems and fears that has been raised by the pressures that we are facing.

Economics and innovation are usually very tied up together. Given a strong economy we will have access to financial support for our projects, being able to easily deploy innovative technologies, processes or models. But although we usually believe that this is the only path – strong economy supporting our innovative initiative – it's especially in the kind of economic climate that we have nowadays, that disruptive, outlying and innovative paradigms, such as Cloud Computing, will help companies move forward with the support of strong, agile, elastic and secure IT platforms, not only allowing better resources investments, but also enhancing the existing team structure. Even though Cloud Computing itself introduces new fears and doubts, we should be able to embrace them as new opportunities.

In this first edition of EuroCloud Portugal Journal we have the pleasure to start by introducing EuroCloud network, Europe's first ever Cloud Computing business community. You will have the possibility to understand how this community has started and also how its activity as already been spread from the southern to the eastern part of Europe.

Having as main subject the Cloud Ecosystem, in this first edition we will also embrace the subjects being discussed in the 2nd CloudViews International Conference, introduction guest speakers and papers.

I would also like to invite you all to follow Ruben's adventure in the Clouds, and I hope that his experience, allied with all the information on this first EuroCloud Portugal Journal, will help you in moving forward in the Cloud Computing adoption. Transforming your companies' IT platforms or helping you develop new projects and business.

10/09 EUROCLOUD EUROPE

EuroCloud, Europe's first ever SaaS and cloud services business community, has launched. Led by Pierre-José Billotte, President and Founder of the French ASP Forum, with a team of SaaS & cloud computing players from the UK, Denmark, Finland, Belgium, Luxembourg and Spain, EuroCloud gathers together leading SaaS vendors, enablers, integrators and industry experts to share best practice and expand their businesses across the continent.

11-09 EUROCLOUD DENMARK LAUNCHED

As of December 9th we now have 11 companies signed up to join EuroCloud Denmark and more than 20 companies participating in our Launch event 11th December, kindly hosted by Interxion. The EuroCloud initiative has even drawn the attention of the Ministry for IT & Telecom and the Ministry will be participating in the Launch event on the 11th December. Initial members of EuroCloud Denmark are, among others, Insight, Sun, Interxion, Copenhagen Software, ArrowECS and economics. EuroCloud Denmark looks forward to take the next steps and participate in the great initiative taken by Pierre José Billotte.

01/10 EUROCLOUD UKRAINE, ALREADY HIGHLY ACTIVE, TO BE ESTABLISHED AT THE BEGINNING OF 2010

Recently, EuroCloud came to Ukraine which is the most eastern member of the organization. At the moment, there is a discussion with various companies from IT and communications industries in order to involve the most innovative and ambitious among them to drive SaaS and Cloud computing in Ukraine. Comparing to other European markets it is an early stage of SaaS and Cloud Computing adoption here, but rapid development of businesses mixed with harsh economic situation push companies to look for ways of cutting costs, increasing productivity and flexibility. EuroCloud Ukraine is going to be officially established at the beginning of the next year to start its work promoting SaaS and Cloud Computing locally, attracting new members as well as contributing into central EuroCloud.

12-09

EUROCLOUD SWEDEN OFFICIALLY FOUNDED ON DECEMBER 18 2009. INTERIM BOARD ELECTED

EuroCloud Sweden was officially founded on December 18, 2009, with an interim board. The interim board will be developing initiatives and set the agenda during H1 2010. Elected chairman is Michael Abrahamsson, CEO at Ilait. The board held its first regular meeting on January 12 and currently represents 20 registered members. EuroCloud Sweden officially joined EuroCloud as planned on January 29.

12-09

EUROCLOUD GERMANY TO ORGANISE LAUNCH

On Dec. 17th 2009, the formal founding of the "EuroCloud Deutschland_eco e.V." association took place. With this founding the legal body of EuroCloud Deutschland_eco was established and operational work has been started. Interested companies are welcome to become member of EuroCloud Deutschland_eco e.V. To apply, please look for <http://www.eurocloud.org/join.php>

As a major event, on Feb. 2nd, 2010 the EuroCloud Deutschland_eco Kick Off took place in Cologne. At this event numerous member companies as well as companies from the market participated, key targets of EuroCloud Deutschland were defined and working groups were established.

EuroCloud Deutschland_eco e.V. will be closely linked to "eco. e.V.", the German Internet Business Association (www.eco.de), eco's branch offices and employees will support the operational work EuroCloud Deutschland_eco.

01/10

EUROCLOUD SPAIN LAUNCHED

EuroCloud Spain was launched last January 20th in an event celebrated in "El vivero de empresas de Villaverde", in Madrid. The event was supported by Madrid's Authorities, and Pierre Jose Billotte, EuroCloud European coordinator. EuroCloud Spain was presented by the Spanish board president, Rodolfo Lomascolo, who explained the importance of this association for the Cloud Computing market companies and for the market.

02-10

EUROCLOUD PORTUGAL HAS ITS PUBLIC PRESENTATION ON JANUARY 2010

EuroCloud Portugal will have its public presentation on January 2010. They will present the EuroCloud organization and its sponsors for the year 2010. Numerous large market players have confirmed their support, such as: IBM, Microsoft, PTInovacao, CIL, VMWARE, CISCO and EMC. The presentation will include short talks about case studies made by companies already working with their customers using the Cloud Computing paradigm. The EuroCloud Portugal projects for 2010 will also be presented, among them: Call For business 2010; CloudViews – Cloud Computing conference 2010; Pump Up the Cloud 2010 Edition, and EuroCloud Portugal Magazine.

02-10 EUROCLOUD NETHERLAND BOARD ELECTED

EuroCloud NL has finalized the composition of the Board.
Chair: Alexandra Schless (Managing Director TelecityGroup Nederland)
Secretary: Jan Aleman (CEO Servoy, member of the SaaS/Cloud workgroup of ICT-Office and writer about Cloud matters)
Treasurer: Richard Nijhoff (Commercieel Directeur GreenCat-IT)
Mark Appel (Marketing Manager Twinfield)
Victor de Pous (business lawyer and industry analyst)
Hans Timmerman (CTO EMC NL)
Vice Chair: Maurice van der Woude (Strategic Business Information Manager NetSourcing)
Theo Loth (coordinator EuroCloud NL and owner Loth PR Writing)
On February 4 15:00, was the Launching Event, hosted by Cisco in Amsterdam. www.eurocloudnl.eu

02-10 EUROCLOUD FORMALLY OPENS FOR BUSINESS ACROSS EUROPE

Paris (France), February 29, 2010, EuroCloud was officially launched at a meeting in Paris (Toit de la Grande Arche). The Chairmen of 12 local EuroCloud branches gathered and signed the statutes to bring the European organisation into existence. The first European board was also elected. The gathering took steps to define a strategy and goals for EuroCloud moving forward, to help align local activities with the organisation's global objectives.

Representatives were present from Finland, Denmark, Sweden, Ireland, the UK, Netherlands, Belgium, France, Luxembourg, Germany, Spain, Portugal and Italy (as special observer).

EUROCLOUD NETHERLANDS IN FULL SPEED

22 companies to date have applied for membership of EuroCloud NL. They represent a vivid mixture of larger corporations and young, innovative 'Cloud Only' entrepreneurs. The Group is in the process now of formalizing EuroCloud NL by assigning a Board and establishing the legal body. Also, the Launching Committee is putting much effort in developing EuroCloud NL's value proposition and the business model. At the beginning of 2010, EuroCloud Netherlands will start reaching out and make some 'noise' in the region. A Launching Event is planned at the beginning of February. In May/June, Netherland's 'National Cloud Event', in association with industry bodies and partners.

04-10 EUROCLOUD WELCOMES EUROCOMMISSIONER NEELIE KROES IN HER NEW ASSIGNMENT FOR IT AND INTERNET AND OFFERS COOPERATION

In the new composed European Commission, Neelie Kroes will be responsible for the 'Digital Agenda' of the European Commission, including IT and Internet. EuroCloud expects to do good collaboration with Mrs. Kroes, in propagating and stimulating European initiatives for Cloud Computing and Software-as-a-Service (SaaS). During her earlier Commission (Competition) Mrs. Kroes has shown an active approach. That is exactly the attitude that the European Cloud Computing industry needs to be able to withstand the competition in East and West.

Billotte: "We are happy with Mrs. Kroes' assignment. We are looking forward to supporting her. We offer cooperation with the European Commission in the further development in Europe or this new field of IT. EuroCloud will be the best commission's partner in Europe for designing European policies towards the European Cloud & SaaS industry, being the sole pan European organization gathering European SaaS & Cloud players coming from all parts of Europe. A lot has to be done with the new commissioner."

Theo Loth, the coordinator of EuroCloud the Netherlands adds: "In the Netherlands we already are familiar with Mrs. Kroes' decisiveness for a longer period of time. It is positive that a heavyweight as she is will occupy herself as the CIO of Europe with digital matters. By leveraging Cloud Computing and SaaS every organization – and also the European Commission itself – can reach significant cost savings and productivity benefits. However, there still is a number of matters to be dealt with, including standardization, security and legal aspects."

04-10 EUROCLOUD FRANCE CONFERENCE - APRIL 2010

20th April 2010 is the date of the new EuroCloud France yearly conference. Among the main topics this year: Rethink the distribution processes for SaaS software, a full coverage about Cloud Computing, SaaS and service availability, what insurance for professionals? Testimonials of both providers and users.

04-10 EUROCLOUD NEW MEMBERS

EuroCloud Lithuania
Adomas Svirskas
Coordinator EuroCloud Lithuania
asvirskas@gmail.com

EuroCloud Slovenia
Dalibor baskovc
Coordinator EuroCloud Slovenia
dalibor.baskovc@siol.net

04-10 EUROCLOUD MALTA

The intention to establish EuroCloud Malta germinated during a visit to CeBIT 2010. Two representatives of the founding members made this trip to explore the possibility of developing relationships with existing cloud services providers in the course of research to establish a compute grid. In the course of this visit, they learned about EuroCloud and recognised the importance of this association with an organisation having the objective of promoting the awareness, understanding and adoption of cloud computing.

EuroCloud Malta is in the process of being constituted, with its statute having been passed the first draft milestone. Two organizations, AG Investments and The Abertax Foundation, which combined employ over one hundred people, have committed themselves to establish the NO. The uniqueness of our impetus to found EuroCloud Malta and strengthen it well beyond the resources of its founding members lies in our appreciation that the Government of Malta's commitment to make Malta a centre of excellence in the ICT industry may reasonably be expected to drive the adoption and growth of cloud computing both as a public services and within private enterprise.

04-10 EUROCLOUD FRANCE ETATS GÉNÉRAUX

300 persons participated to the EuroCloud France yearly conference. Among the main topics this year: Rethink the distribution processes for SaaS software, a full coverage about Cloud Computing, SaaS and service availability, what insurance for professionals? And testimonials of both providers and users. Three companies received the French EuroCloud Award.

18TH MAY 2010 EUROCLOUD IRELAND LAUNCHED

EuroCloud Ireland will have its official launch conference. Your opportunity to help drive Ireland's SMART ECONOMY by joining EuroCloud Ireland.

EUROCLOUD PORTUGAL CLOUDVIEWS YEARLY CONFERENCE

To Cloud or not to Cloud was the question raised at the "CloudViews - Cloud Computing Conference 2009". This year's main objective is helping Cloud Computing achieve its main goal – transform IT platforms in elastic, highly available, fault tolerant, secure, and multi-tenant platforms. Allowing IT technicians to be able to shift the focus of their work from the technology complexity to their companies core business, will depend on our capability to build a true Computing ecosystem in the Cloud.

21-06-2010 EUROCLOUD CONGRESS



EuroCloud Portugal

Perceiving the potential of Cloud Computing paradigm for ICT (Information Communication Technologies) evolution, Porto Polytechnic researchers, technical staff and independent entrepreneurs, launched in 2007, cloudviews.org project to promote and discuss technologies pertained to Cloud Computing. In this context, cloudviews.org organized in May 2009 the "CloudViews–Cloud Computing Conference" under the theme "The Cloud Identity". The 2010 edition aims at disclosing solutions and innovative projects for the "Cloud Ecosystem". Particular attention will be given to interoperability, elasticity and cloud security. Pursuing cloudviews.org spirit, EuroCloud Portugal Association, founded in January 2010, is a non profit organization committed to scientific purposes; knowledge transfer between R&D centers and the entrepreneurial world; cooperation among local companies and between these and European ones. Affiliated with European association EuroCloud, the Portuguese counterpart embraces both academic and business members, among which are Porto Polytechnic (IPP) and its engineering schools, IBM, EMC2, Microsoft and CIL. EuroCloud Portugal shall work with its business members in two axes. Initially with service providers, which are supposed to be ICT companies driven by internationalization and partnership projects. Later on, with the market and companies that want to affirm themselves through the implementation of ICT politics that favor the improvement of the quality of their services and products, allied with innovation, efficient investment and resources utilization. In our view, EuroCloud Portugal organization allows the combination of synergies toward the development of novel solutions for enterprise and educational ICT.

The EuroCloud board members: António Costa, António Pinto, Benedita Malheiro, Hugo Magalhães, Miguel Leitão, Paulo Calçada, Pedro Assis, Ricardo Costa and Sérgio Lopes.



LUXEMBOURG

Chambre de Commerce, 7 rue Alcide de Gasperi, Luxembourg-Kirchberg

EuroCloud Congress brings together political decision-makers, academics and business leaders engaged in cloud computing and software-as-a-service from across Europe. Its mission is to examine specific opportunities and challenges surrounding the uptake of this immensely significant technology sector in Europe. Structured as a mix of open plenary and member-only workshop sessions, it aims to produce findings in specific areas for further investigation and action with relevant political and industry organisations. This will be the first time that such a broad cross-section of the European industry in the vitally seminal sector of cloud computing has come together to focus on the role that political, industrial and economic policy can play in its successful growth and global impact. Attendees will benefit from valuable information exchange and networking with peers and subject matter experts from across Europe. Workshop content across a range of topics is currently being refined by member consultation within local EuroCloud groups. The workshops will examine specific issues within those topics and aim to reach conclusions to take forward as action points. The output from workshops will be compiled as a white paper to be completed in July for presentation to the European Commission and other interested outside agencies.

Agenda overview

9:00	Registration opens
9:45	Welcome – Pierre-José Billotte, President, EuroCloud
10:00	Opening session – Phil Wainewright, President EuroCloud UK 1) Evolution of the cloud market in Europe – Mathieu Poujol, Director, Technologies, PAC 2) EuroCloud and EU – kick-off session for workshops with preliminary findings from across Europe
11:00	Break – tea/coffee
11:30	Workshops (4 in parallel – see below) – Anders Trolle-Schultz, President EuroCloud Denmark
12:45	Lunch
14:00	Title tba – Mr. François Biltgen, Minister of Communications
14:30	Cloud Computing and the Digital Agenda – Carl-Christian Buhr – European Union
14:50	Workshops (4 in parallel – see below) – Anders Trolle-Schultz, President EuroCloud Denmark
15:50	Break – tea/coffee
16:15	Closing session – Phil Wainewright, President EuroCloud UK
17:00	Close – cocktails
17:30	End of event
18:00	Evening dinner

Workshops working subjects

- * Security and certification
- * Internationalisation within Europe and beyond
- * Service levels and customer experience
- * Topic to be advised later
- * The legal framework for cloud and SaaS provision
- * Fostering and recognising innovation
- * Industry alliances and partnership
- * Topic to be advised later



HOW TO ADDRESS I DON'T WANT TO BE PIONEER?

Maria Spinola

Nowadays, IT buyers are understandably more cautious about the products and services they buy. They need more proof and more validation than ever before. Besides that, IT is in a phase that we can call it the disruptive phase. Virtualization, Green IT, Social Media, Unified Communications, and Cloud Computing are among such disruptive trends that drive major change in business processes or revenue streams, consumer behavior or spending, or IT industry dynamics. Cloud Computing continues to gain attention, with vendors promoting an ever-wider variety of service options. When, where and how does cloud computing deliver benefits? * What business drivers are leading companies to consider cloud computing, and what are the barriers and risks of doing so? * How are enterprises dealing with the challenges and risks, and how are they implementing cloud solutions? * What are the benefits of the existing cloud computing initiatives, and how have these benefits impacted future plans for cloud computing?

Companies must identify the disruptive technologies that will impact their users and their business and develop plans to address these disruptions, and they don't want to be the pioneers. Early adopters have paved the way for cloud adoption, making mistakes and learning lessons, and companies want to learn from them. Stories about true business successes (aka customer stories, case studies, or success stories) have become an essential part of today's marketing plan, and are the key piece that companies need so they can address those disruptive technologies with confidence, because they show how other real clients, solved the same challenges, concerns and problems. However, the majority of case studies, ignore this new reality (some are almost pure corporation propaganda) because they only focus on the benefits that their solutions bring to the client featured in the Case Study, and forget that the reader knows very well, that in IT, many things can go wrong, mainly in the implementation phase. So, this is the formula, that I advice to all Case Studies, specially the Case Studies that address disruptive technologies:

THE CHALLENGE

Begin by introducing the problem, and if possible use the customer's own words.

- * What situation the client wanted to improve or change?
- * What was the problem with which he struggled?

Note: It's important to highlight the stakes involved. "It's not enough to say that Widgets Inc. had an inefficient mail server system. "You need to articulate the meaning of the challenge to the customer, whether it's a negative consequence to overcome (of course, that it must be done in a way to preserve client reputation), or a positive outcome that might be gained

CUSTOMER

Present the client who is the subject of study in the Case Study.

- * Who are they?

- * They do what?

Note: This will help the reader identify with that industry, and size of the company. It will make them start to feel as one of them.

THE JOURNEY

Describe the steps the client has to tackle its challenges.

- * What other products, services or solutions were considered?

- * Why none of them was chosen?

Note: Do not leave out this section.

This is part of the story where the reader begins to identify themselves and gain empathy.

THE DISCOVERY

How did the customer discover the product or service?

- * It was through an ad?
- Exhibition? Article?

Note: This section serves as a bridge for the remainder Case Study

THE SOLUTION

This is the section where the star is the product or service. The previous sections allow this to be possible

Note: However, do not exaggerate in the promotion, instead focus on the educational aspect. Highlight the facts about the product or service that are important for the reader.

THE IMPLEMENTATION

- * How was implemented the product or service?
- * There were periods of disruption or stop?
- * How long did it take until I was running 100%?
- * What legal issues (local and corporate) and security concerns did the client face? Update IT policies? Approval from legal counsel and security officer?

- * The team needed to implement the solution?

Note: You need to tell the truth in this section. Highlight the problems encountered and how were they solved. Unexpected problems have the potential to create credibility, and therefore, more persuasive.

THE RESULTS

How well did the product or service solved customer problems?

Note: Be as specific as possible, and use the figures provided by the client, such as cost saving (CapEx vs. OpEx), time gain, increased earnings, and so on. Don't be generalist, because it is more credible to say that "We have reduced by 200% the time to develop a new application" rather than saying "substantially reduce the time to develop a new application".

KEY TAKE AWAY & LESSONS LEARNED

What major key take away and lessons the client learned?

- * Train the support staff, vendors, etc
- * Support planning
- * Must convince at all levels that it is safe to be in the cloud
- * Support from CEO, CFO and Business VPs

Note: This is probably, one of the most important sections of the Case Study, because it's where the reader can learn from the mistakes and the lessons learned from other clients.

ABOUT THE AUTHOR:

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CLOUDVIEWS

2nd CLOUD COMPUTING INTERNATIONAL CONFERENCE

20-21 MAY 2010 PORTO / PORTUGAL



INNOVATION IN CLOUD COMPUTING ARCHITECTURES WITH OPENNEBULA

Ignacio M. Llorente
— Spain

The presentation describes the innovations in cloud management brought by the OpenNebula Cloud Toolkit. This widely used open-source Cloud manager fits into existing data centers to build private, public and hybrid Infrastructure-as-a-Service (IaaS) Clouds. Most of its innovative features have been developed to address requirements from business use cases in RESERVOIR, flagship of European research initiatives in virtualized infrastructures and cloud computing. The innovations comprise support for elastic multi-tier services; flexible and scalable back-end for virtualization, storage and networking management; and support for Cloud federation and interoperability. The presentation ends with an introduction of the community and ecosystem that are evolving around OpenNebula and the new European projects on cloud computing infrastructures that are using this cloud technology as tool for innovation.

CERN CLOUD COMPUTING INFRASTRUCTURE

Ulrich Schwickerath
— Germany

In 2009 two projects were established with the aim of evaluating the large scale use of virtualization at CERN. One project is looking at traditional consolidation using reliable storage and hardware whereas the project we discuss relates to the virtualization of the batch systems and so hosts many thousands of non-critical virtual machines with typically short lifetimes. It is hoped that in the future both projects can be merged as the technologies evolve.

We describe our plans for the virtual batch farm including a vision of how things might develop in the future. We have identified the key components required to create such a system and these, along with their interactions are described.

For some parts of the required software ecosystem there are already solutions available. The clearest example is that of the virtual machine management system where we are evaluating two different products: OpenNebula which is an open source project and the Infrastructure Sharing Facility from Platform Computing. A brief comparison of both will be provided, and preliminary performance measurements will be presented.

GRID, PAAS FOR E-SCIENCE

Jorge Gomes
— Portugal

Europe has been very successful in the development and use of grid computing technologies to support demanding scientific applications. The EGEE project has enabled the integration of computing resources across Europe creating the largest multidisciplinary grid infrastructure for science worldwide.

Still grid computing has remained confined to large scientific communities that need access to vast amounts of distributed resources. Low flexibility, high complexity and inadequate business models are often mentioned as barriers to the adoption of the grid technologies.

Cloud computing is seen by many resource providers as a possible approach to complement grid computing and address some of its current limitations. Cloud computing has the potential to provide a more flexible environment for both grid computing and other paradigms, while enabling higher flexibility, elasticity and better optimization of the underlying infrastructures.



ITIL ON THE CLOUD COMPUTING AGE

Luis Lima Galieu
— Portugal

From the NIST definition the cloud computing v15 is: "Cloud computing is a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction."

So one of the core propositions of cloud computing is the notion of 'cloud' being an operational process change and NOT a technology or simple outsourcing. We are looking to delivering environments in minutes and hours, not weeks and months. Moving to the cloud is primarily a "business decision" dependent on the metrics of ROI (Return On Investment), performance, sustainability and suitability to task.

To derive the maximum value from cloud computing's disruptive force, we must have standards. Standards are critical to the success of cloud computing and it's ability to transform IT into a business enabler that can be run transparently like many other parts of the business.

- * The data center can no longer be a black box!
- * We have a paradigm shift to service reliability rather than component reliability.
- * We need a new vision of IT Service Management.
- * However the ITSM is still the ITSM (IT service management) no matter what.



PRIVACY FOR GOOGLE DOCS: IMPLEMENTING A TRANSPARENT ENCRYPTION LAYER

Lilian Adkinson-Orellana
— Spain

Cloud Computing is emerging as a mainstream technology thanks to the provided cost savings in deployment, installation, configuration and maintenance. But not all is positive in this scenario, particularly, it is especially critical when users store sensitive data remotely; and the networks or the cloud servers containing such information suffer an attack compromising security and privacy.

In this paper we propose a privacy solution by using a new transparent user layer in Google Docs, and implementing it as a Firefox add-on. This add-on encrypts the information before storing it on the Google servers. We have chosen Google Docs because it is a popular and free service, with a complete and well-documented API that simplifies the development of possible extensions and provides a friendly user interface.

The Firefox add-on is based on JavaScript and XUL, and from the user point of view, the only difference is that he can find extra information indicating the documents that have been previously ciphered.



MANAGING CLOUD FRAMEWORKS THROUGH MAINSTREAM AND EMERGING NSM PLATFORMS

Pedro Assis
— Portugal

This article proposes the integration of Cloud Computing software frameworks (e.g. OpenNebula, Eucalyptus), commonly called Infrastructure as a Service (IaaS), with mainstream Network and Systems Management (NSM) platforms, particularly the Simple Network Management Protocol (SNMP) and the Web-Based Enterprise Management (WBEM); as well as with emerging semantic web technologies which are being applied to NSM, Resource Description Framework (RDF) and Web Ontology Language (OWL). Such proposal is based on the development of the following "adapters" to "expose" Cloud Computing Frameworks (CCF) data as a SNMP (Sub)Agent, CIM Provider and SPARQL (Simple Protocol and RDF Query Language) endpoint.

In the author's view, Cloud Computing will benefit from interoperability with mainstream and emerging NSM platforms. First, promoting its integration with mainstream management domains, CCF will profit from widely deployed management standards and widespread knowledge regarding their use. Secondly, CCF will capitalize from emerging management technologies and tools, which address contemporary management requirements. Thirdly, NSM will offer an "interface", from the user point of view, to unify cloud frameworks monitoring, configuration and event handling.





CLOUD COMPUTING SECURITY THREATS AND RISK MITIGATION: FORENSIC PSYCHOLOGICAL CONSIDERATIONS

Jonathan A. Dudek

Cloud computing will play an increasingly critical role in the future of the information technology sector, impacting individual consumers, corporations, governments, and international commerce alike. As a forensic psychologist with a national security and law enforcement background, arguably, the design and implementation of cloud computing also involves exposure to multiple security risks at various levels. Understanding the “dark side” of cloud computing at the conceptualization phase – including behavioral, cultural, and forensic-

related criminal issues – offers hardware and software manufacturers insight into the potential behavior of criminal groups and others seeking to exploit vulnerabilities; having this knowledge, in turn, fosters development of appropriate risk mitigation strategies and safeguards at each level of the cloud. Such a proactive strategy would seemingly be cost effective over the longer term. Having a thorough understanding of one's adversaries and implementing appropriate counterstrategies beforehand mitigates the risk of retrofitting these technologies later pursuant to an intrusion and/or data compromise. Some behavioral and forensic-related issues to seriously consider include examining the characteristics and behaviors of various criminals and groups (e.g., organized criminal networks, terrorists, hostile foreign governments, white collar criminals, and hackers); trying to ascertain their motives and objectives (e.g., financial gain, sabotage, cyberespionage, etc.); and probing how their behavior would interface both at the desktop (e.g., violating someone else's computer through the cloud) and the mainframe (e.g., writing code to prevent intrusions, misuse of data, etc.) levels. Considering insider and external threats (e.g., a corporate employee sabotaging the cloud individually from the “inside” and/or collaborating with an unaffiliated, “external”

party) is also important. Additionally, analyzing the nature of prior intrusions and resulting security measures taken (e.g., software patches) provides valuable forensic data regarding vulnerabilities and those parties seeking to exploit them.

About the Author:

Jonathan A. Dudek, Ph.D. is a forensic psychologist with a national security and law enforcement background. As the founder of Dudek Global Partners, he maintains an international consulting practice assisting developing countries, corporations, and other public and private sector entities with business and program development; human capital and systems-based risk management, risk mitigation, and problem-solving; identifying strategic opportunities as well as human and cultural barriers to entry; and forensic and investigative consultation. He further serves as a Vice President at White Mountain Research, LLC, a global risk management, business advisory, and security services company headquartered in the Washington, DC area.

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HOW HARDWARE VIRTUALIZATION WORKS

Gregory Pfister

Zero. Zilch. Nada. Nothing. Rien.

That's the best approximation to the intrinsic overhead for computer hardware virtualization, with the most modern hardware and adequate resources. Judging from comments and discussions I've seen, there are many people who don't understand this. So I'll try to explain here how this trick is pulled off. Virtualization and Cloud Computing
Virtualization is not a mathematical prerequisite for cloud computing; there are cloud providers who do serve up whole physical servers on demand. However, it is very common, for two reasons: First, it is an economic requirement. Cloud installations without virtualization are like corporate IT shops prior to virtualization; there, the average utilization of commodity and RISC/UNIX servers is about 12%. (While this seems insanely low,

there is a lot of data supporting that number.) If a cloud provider could only hope for 12% utilization at best, when all servers were used, the provider will have to charge a price well above competitors who do not have that disadvantage.

Second, it is a management requirement. One of the key things virtualization does is reduce a running computer system to a big bag of bits, which can then be treated like any other bag o' bits. Examples: It can be filed, or archived; it can be restarted after being filed or archived; it can be moved to a different physical machine; and it can be used as a template to make clones, additional instances of the same running system, thus directly supporting one of the key features of cloud computing: elasticity, expansion on demand.

Notice that I claimed the above advantages for virtualization in general, not just the hardware virtualization that creates a virtual computer. Virtual computers, or “virtual machines,” are used by Amazon AWS and other providers of Infrastructure as a Service (IaaS); they lease you your own complete virtual computers, on which you can load and run essentially anything you want.

In contrast, systems like Google App Engine and Microsoft Azure provide you with complete, isolated, virtual programming platform – Platform as a Service (PaaS). This removes some of the pain of use, like licensing, configuring and maintaining your own copy of an operating system, database system, and so on. However, it restricts you to using their platform, with their choice of programming languages and services.

In addition, there are virtualization technologies that target a point intermediate between IaaS and

PaaS, such as the containers implemented in Oracle Solaris, or the WPARs of IBM AIX. These provide independent virtual copies of the operating system within one actual instantiation of the operating system.

The advantages of virtualization apply to all the variations discussed above. And if you feel like stretching your brain, imagine using all of them at the same time. It's perfectly possible: .NET running within a container running on a virtual machine. Here, however, I will only be discussing hardware virtualization, the implementation of virtual machines as done by VMware and many others. Also, within that area, I am only going to touch lightly on virtualization of input/output functions, primarily to keep this article a reasonable length. So, on we go to the techniques used to virtualize processors and memory.

(please read the full article in the CloudViews2010 proceedings book)

About The Author

Gregory Pfister is a research professor at Colorado State University and he's a retired IBM Distinguished Engineer. He's the author of “In Search of Clusters” still referred to as “the bible of clusters.” He has worked on parallel computing for over 30 years, plus accelerators and appliances, chaired an InfiniBand subgroup, and hold over 30 patents in parallel computing and computer communications.

CASE STUDIE: PRODUTIV & AREAGEST

PRODUTIV Business Software has been set up by a group of investors and researchers from several industries. It offers a vertical answer adapted to any kind of organization. PRODUTIV is, in fact, a global decision tool that integrates management, communications, mobility and productivity solutions, totally oriented for cloud computing as Software as a Service (SaaS). It ensures a 99.99% SLA in terms of Data Center performance. The SaaS approach, together with a 100% configurable base-Platform, makes possible for PRODUTIV to generate new value in any kind of public or private held organization. Following that purpose we have developed some new concepts or world innovations, such as the single record approach and its outcome – a workflow of processes that are linked to a documents' scanning technology. As part of the SaaS monthly rent, Clients are given the right to access PRODUTIV's use, technical assistance – directly provided by PRODUTIV's team – and data management and hosting in a Data Center. The monthly fee is then defined based on different criteria, such as Client's sales, number of users and companies included in each software licence, space used in Data Center and specific productions required for each business.

In so doing, we make sure that not only PRODUTIV's flexible technology but also PRODUTIV's business model are designed for answering Clients' needs that enables our Solution to become a flexible and adaptable investment for each Client, as a real Service has to be rendered.

Together with its SaaS dimension, PRODUTIV also enables all data migration from previous softwares that may be in use in each company. This makes PRODUTIV's deployment a shorter, lighter and agile process. It avoids double software records when changing to PRODUTIV, as all data related to purchases, sales, products, goods, services, clients and suppliers is converted. At the same time that all data is migrated and hosted, PRODUTIV, as a totally configurable Service, is then adapted to each company, subsidiary and user, with no extra programming needs.

A highly successful case study refers to PRODUTIV's deployment at AREAGEST, a management and IT services provider, well-known in its industry since 1982. It shows the productivity's impact of a SaaS totally configurable Solution.

As AREAGEST controls time and services provided to Clients, it has been requested to deploy PRODUTIV's specific production for Accounting Firms. This specific solution integrated in PRODUTIV also allows AREAGEST to benefit from a scanning and recording interface for accounting control that enhances productivity and services' relocation. AREAGEST services in terms of checking accounting records can now be provided to its Clients in the Web through a simple browser – as long as they have also adopted PRODUTIV.

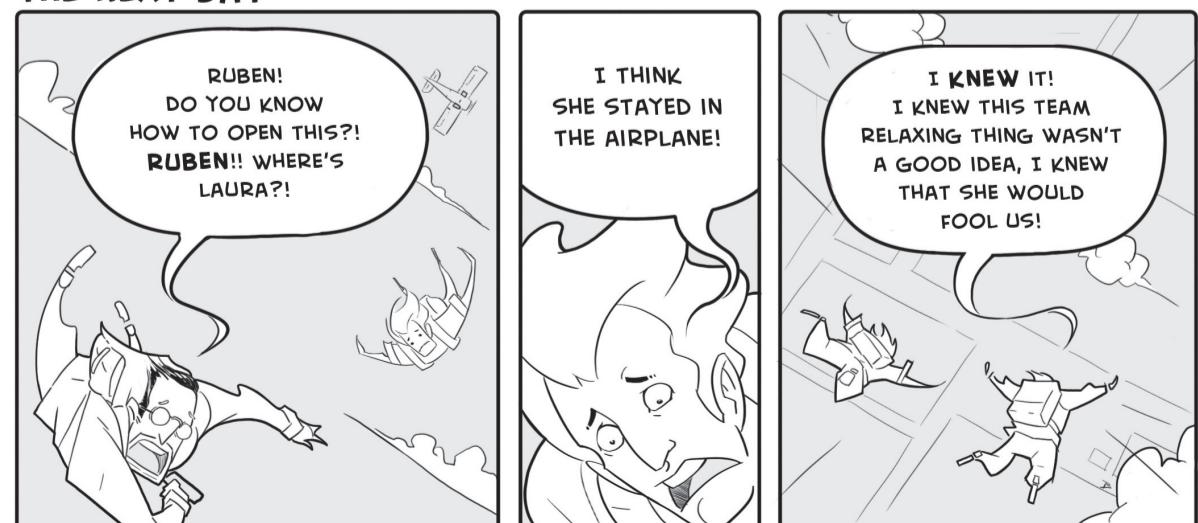
AREAGEST, as an IT technical assistance provider, was also looking for a business software that would make it possible to manage the appointment, control and billing of technical assistances. To answer this need, it has been deployed another PRODUTIV's specific integrated production, stating the complete elasticity of PRODUTIV's offer, that is related to Technical Assurances and Contracts. After that, PRODUTIV has been configured to each user needs. Now AREAGEST's investment in PRODUTIV only refers to a monthly rent, adapted to its needs and dimension.

Today, PRODUTIV's Value Partner AREAGEST greatly recognizes high productivity increases and data management infrastructure costs decrease, thanks to PRODUTIV's SaaS concept. These new advantages have made possible for AREAGEST to develop new business opportunities and to use its team to start new PRODUTIV's deployment in its own Clients, as a PRODUTIV Partner.

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A N I N T E R N A T I O N A L P A R T N E R S H I P

CREATING CRITICAL MASS ON ICT AREAS

In October 2006, the Portuguese government and Carnegie Mellon University entered into an agreement identified as the Carnegie Mellon Portugal program for 5 years. Some of the key goals include recruiting top students and faculty in the International stage, fostering strong ties among Portuguese Universities themselves and Portuguese Universities with corporate affiliates, and creating an environment that functions on the global stage. Since its inception, the Program has made significant strides in achieving these goals. The Carnegie Mellon Portugal program, funded by the Portuguese Foundation for Science and Technology (FCT), involves nine Portuguese Universities: Univ. de Aveiro; Faculdade de Ciências Económicas e Empresariais – Univ. Católica Portuguesa; Faculdade de Ciências e Tecnologia – Univ. de Coimbra; Univ. de Madeira; Escola de

Engenharia – Univ. do Minho; Faculdade de Ciências e Tecnologia – Univ. Nova de Lisboa; Faculdade de Ciências – Univ. de Lisboa; Instituto Superior Técnico – Univ. Técnica de Lisboa; and Faculdade de Ciências and Faculdade de Engenharia – Univ. do Porto. Currently, it has more than 168 students enrolled in the dual professional masters, doctoral and post-doctoral degree programs. To accelerate the adoption of best practices through cultural immersion, this program supports faculty exchange programs, in which Portuguese academics can spend at least one term working in research and education at Carnegie Mellon and vice-versa. The Carnegie Mellon Portugal program funds ten innovative research projects, which are selected by means of open calls and independent evaluation by international experts. Each proposal must include at least two research institutions in Portugal, one research group at Carnegie Mellon University and one Portuguese company. Through the program the ties between Portuguese Universities and industry were strengthened.

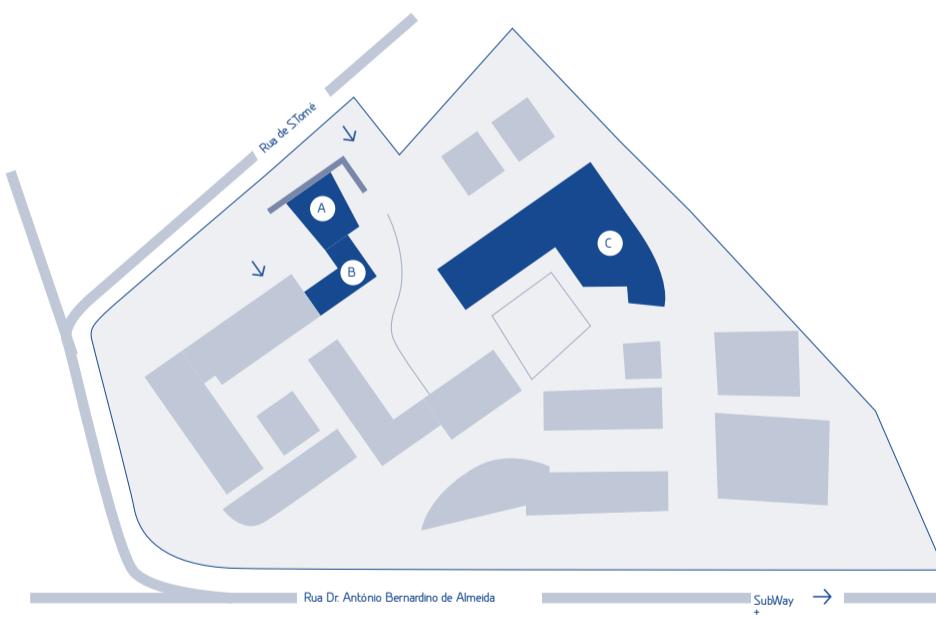
Many corporate affiliates provide financial support to several students in the Program, and many of these become workers in these companies after graduation. This partnership has more than 39 industrial affiliates, and their commitment to the Program includes: direct funding, human resources, logistical support and equipment for ten innovative research projects, which were selected by Open Calls. In February 2010, the Carnegie Mellon Portugal program launched three new innovation networks, with the goal to consolidate and expand the successful cooperation among all partner institutions and industrial affiliates: Innovation Forum on Security and Critical Infrastructure Protection (NET-SCIP), Innovation Forum on Future Internet Services and Technologies (NET-FIT), and Innovation Forum on Services and Technologies for Interactive Media (NET-STIM). Since its inception, the program has strived to identify the key focused areas of ICT where Portuguese universities and companies can become world leaders in high-impact research and innovative products and services, namely: Next Generation Networks for Trusted High-Quality Services; Software Engineering for Large-Scale Dependable Systems; Cyber-Physical Systems for Ambient Intelligence; Human-Centric Computing; Public Policy & Entrepreneurship Dynamics in New ICT; Applied Mathematics.

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A - Main Auditorium
B - Showroom + Coffe Break area
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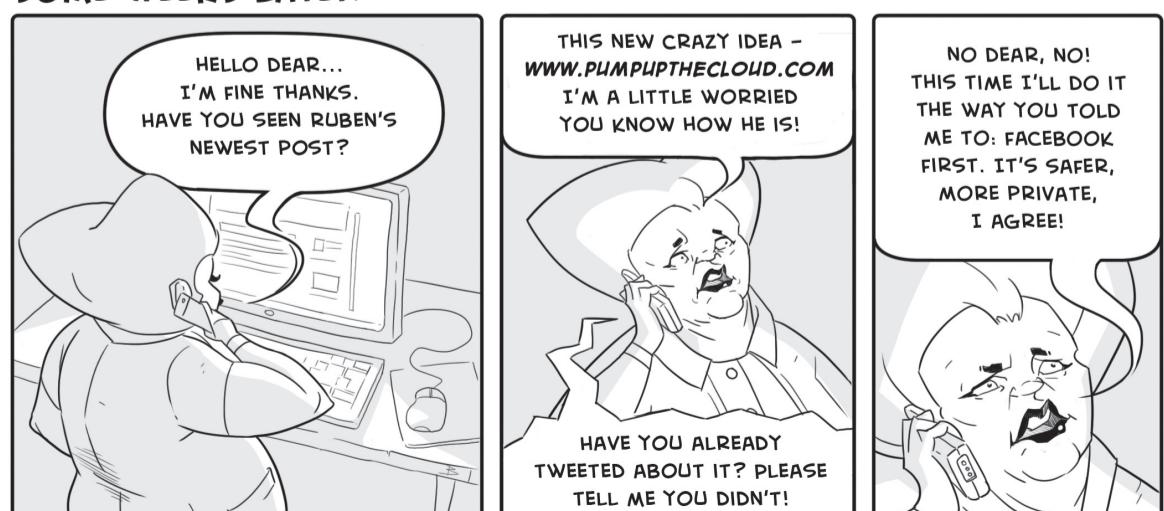
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