

An Overview of the Effects of Processing on Cloud Computing Dramatic Present and Provide New Security Solutions

Mohamadreza Mohamadzadeh Shadmehri^{*1}, Masoud Khodaverdi², Ali Mohammadian³,
Saeed Baghernezhad⁴

¹Department of Electronic Engineering, Khorasan Razavi, Neyshabur, Science and Research branch, Islamic Azad University, Neyshabur, Iran

^{2,3,4}Department of Electronic Engineering, khorasan shomali, Bojnourd, Science and Research branch, Islamic Azad University, Bojnourd, Iran

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ABSTRACT

Cloud, virtual image of the environment that is not specified and the power and span because of computational processes and new technology to cloud computing is said to be it is not clear how resources and their spatial and temporal dimensions. This technology offers processing facilities, storage and acquisition, support and etc via the internet. Cloud Computing available services are trusted that through the next-generation data center based computing and virtualization technologies and provided by the internet aided. Internet in recent decades a dramatic impact on humans life and businesses, and a lot of people to buy, read the news, watch movies, online gaming and etc use it. As every day we need to be more computer, it should be processing power more. present significant advances in telecommunications and information technology to process and is basically the power of human life as the fifth tool processes (after water, electricity, gas and telephone) can be seen. On the other hand in the vast network that its subscribers, including individuals and companies, in addition to the shared use of resources, information and personal data are placed need to network security is very important and may users and companies if there is high security procedures to ensure that this service is faster and more willing to use this service. In this paper first explores the dramatic impact and benefits of Cloud Computing in some companies and I international organizations civilian and military paid and finally new solutions in the field of enhancing and strengthen its security are discussed.

KEYWORDS: cloud computing and its effects, security, evolutionary algorithms, Pattern recognition

1) INTRODUCTION

The history of computer science have always been fundamental changes and change control. Including can be pointed out that the first generation of computers from 1945 to 1956 was the presence of the vacuum bulbs were used inside computers. In the second generation of the year 1956 to 1963 was after the invention of the transistor in the structure of computers were used. Over time and with inventing the circuits The third generation of complex computers in 1971 until the present time still continues along with the progress of technology of highly integrated circuits (LSI), very complex of 1963 to 1971 were present. And finally, the fourth generation of the above (VLSI) and integrated (ULSI). Now is also a technology called Cloud Computing is creating a new era in Computer and power industry processes. By studying history we can notice that the idea of Cloud Computing is that it can be taken as sources of user processes when not in possession of the necessary current members or other users. The simplest definition of Cloud Computing resources and processes to achieve even through cheap computers.

Including most major benefits of this technology is the ability to share and work together on a specific project or file in this way, which is to assume you want the processing on a particular individual or individuals do DNA. If you have Cloud Computing user can, firstly, of the power of its processes more use extra strong – because your system may not be the necessary processes, secondly can this super heavy operations at the same time with a few of his friends to carry out the work accomplished and the results of each project will be seen on the moment. Among other benefits it is up before this, you should only use the power of your processes you system every so often I have to update hardware You so that you can also access the latest version of the software and hardware necessary for the support of the powers that have the software that this cost is very high and in some cases, cannot afford. And in addition to this if we want the software to install on the system we need to license more software for it We purchased. Cloud Computing performance that this is contrary to the cases because our Cloud Computing at any time from your account and let us out the next time we entered, we will witness the latest version of the software we use, they need to develop their system hardware is necessary because we have the power of the cloud. While you have to This software development have not paid the additional cost. In the old system if you, your highly confidential information on computers and you have a

***Corresponding Author:** Mohamadreza Mohamadzadeh Shadmehri, Department of Electronic Engineering, Khorasan Razavi, Neyshabur, Science and Research branch, Islamic Azad University, Neyshabur, Iran
Email: m_mohamadzadeh.talent@yahoo.com or mohamadreza_mohamadzadeh@hotmail.com

major fear of the always loss or theft or manipulation of information should be anti viruses and other security software on your system (such as firewalls) to update, remember that if you accidentally went one day You may have stumbled on the same day had been attacked and destroyed in your information. But Cloud Computing you always in your account every time you log in to control your security system will be equipped with the SEC before the firmware update. Other benefits of Cloud Computing including being recognized all the extensions meaning that if you receive the file in your file system was unknown – this is the direction that didn't know what to open it with the software – if you use the Cloud Computing of the file with its associated application to be opened. In addition, if you are the owner of the corporate group you can get your company's internal network, on the move to Cloud Computing too witnessed speed And higher power be it and if you like to use the former from the server may not always be so much processing that can constantly busy servers not only hold power cost and extra maintenance payments. These are only part of the Cloud Computing Technology massive performance known as the next big thing.

2) evaluation dramatic effects on different industries cloud computing :

On two basic definitions to some of the previous section and the benefits of this new technology was mentioned. In this section some of the most important applications of this technology, we can mention, and with understanding the sensitivity of this technology in most of these new security solutions applications on behalf of the author of this article will be provided.

The main reason for the use of Cloud Computing is that humans in the present age tend to use technology and wireless communication methods. The Amazon is the first commercial Computing Cloud provider. The other reason is simply that the use of this volume prefer the other servers and specify the amount of processors and other hardware and With only one incredible power in processing and storage and other operations processes we encountered. A third reason that can be found in the use of Cloud Computing will be mentioned instead of the old system is that these days the human desire to use social sites. For example, a social site like Face book now has more than 450 million registered user and every day Add to this the huge amount of such user. The other reason for using it is that the user can decide which information with who and in what places of the world to share in the old system to this at all. The other reason is that this method does not require that other programmers for each group and each enterprise to one type of servers and systems But anyone with a taste for Cloud Computing itself can be of use. As well as other reasons, it can be used to not having the need to specialize in, not having a minimum level of requirements to the hardware and software in use, being all known file extensions in this type of system and the lack of minimum requirements to a level of hardware and software in use, being known to all File extensions in this type of system and hardware requirements, and software to upgrade.

Google Inc. is releasing the operating system Chrome OS to your users through it find in the cloud and the possibility of this type of processing for them. Microsoft Corporation is also so check out this technology and fear of losing their users in preparing Microsoft Azure cloud operating system that is a. Section Service GSA (General Service Administration) Because many of the visit for this site, and with the fear, loss and his regiment had earned the site hosting your site decided to Cloud Computing. NASA (National Aeronautics and Space Administration): NEBULA platform that is completely based on the Cloud Computing The possibility of popular participation in space projects and hence it is possible to have more storage and processing for NASA has provided. Department of Interior: this is a Ministry that provides service for many federal agencies that enforce these days decided the cloud-based service. Department of Health and Human Services: preparing The platform is based on cloud computing for service more efficient and faster. Census Bur: SaaS provider and the Service Manager on the site that Salesforce to millions through the cloud service. The White House: moving Cloud Computing Technology to your system to be able to automate voting system, the system of direct dialogue with city women and their own internal network system with higher speed and comprehensiveness.

As well as the State-owned United Kingdom wide network G-Cloud have thrown their way for up to a higher speed and precision that it caused in its Government Affairs. The Europeans are also in the following Government departments and the public on the use of this new technology are: Management of public sector housing, transportation service networks ,Economic Development ,Health Services ,Contracting and education services .

Denmark also earlier with two pilot Digitalise ' r. dk and Cloud Computing Technology for NemHandel home users the results of his experiments, and when it was satisfied with the local government Denmark-based Cloud Computing.

The Japanese together with cloudy that have name and in the name of Kasumigaseki Cloud State in place – were launched in the Tokyo industrial thinking The development of Hypertext for use in all government departments and are in this arena are part of the pioneers, they are also the area and environmental technology as "green" have named that of course this is also a major part of the project to create digital Japanese.

China: in China, especially in the northern parts of the State this country with a project called: "the Yellow River Delta Cloud Computing Center" (The Yellow River Delta Cloud Computing Center) only being studied, and economic development but the Government the performance of cloud-based and more. Even the Chinese

Government in the city of Wuxi plant launched cloud services To be able to cloud resources by which processes for all factories and offices.

Thailand: in Thailand, the Government information technology sector GITS or private cloud public sector design and is built in Thailand, and is going to be soon, by which time a lot of e-services to the citizens and public institutions provide.

Vietnam: IBM, along with the Government and the country's universities plan to provide private and public cloud as we expand and expand.

New Zealand: being an extensive review on the best possible effects, and the use of Cloud Computing.

The profound impact that technology now to review on the State of some of the smaller companies. A company like YouTube in 2006, 30 million daily page was added to site, you must now use the Cloud Computing Technology to other servers because it may be necessary to power the search processes in the midst of it all video Don't have movie and the company's site in disorders. That, of course, if you do not use the Cloud Computing approach is the exorbitant prices must more servers purchased are installed that are more expensive.

SmugMug Inc. a Web site to share the image, for an easier servicing and more (such as the conversion of photo work, reform and etc) and also because of the high amount of file size use of Cloud Computing are decided. Google App Engine is Google, for example, or the service that allows you to look at the applications Run on Google's infrastructure. In this way, you can look at the documents himself with the people that you want or share in total global level; the service completely free of charge the company IBM and Google are setting up a network based on the new calculations are the same as for universities, through which universities can make their activities are more and more centralized and powerful in Other universities students whereas theoretical ideas and were active in the project share it. The first universities were connected to the network, the University of Washington, Carnegie-Mellon University, MIT, Stanford University, The University of California at Berkeley, a Maryland University.

The company Nasdaq Stock and fund that holds a lot of data, intending to share and sell them, but they are using the company's server and the amount of space they are concerned about the Amazon S3 service and so it was. As well as petty enterprises like Nimbus, Eucalyptus more recently computational, storage services and applications with acquisition cost they offer.

Sun Micro Systems company is launching a new data center for Cloud Computing and hosted applications users. The company will be in different parts of the world are sites that contain strong servers provide support for to be able of avoid failure as well.

Networks such as My experiment (www.myexperiment.org) and the nanoHub (www.nanohub.org) is now available for sharing their research results and research things with people and communicate directly with them, are migrating to Cloud Computing.

As well as Cloud Computing Services provider is banking this means that you are paying the service charge and can do things that other users of a series to receive or pay a service upgrade and sell that on the whole the system of buying and selling.

Finally, the authors predict that in the near future a lot of companies and individuals in the field of Cloud Computing Technology and services will be busy. Engineers and designers also have their role in the development and advancement of Cloud Computing to play properly, and in accordance with the needs of users access the service they provide, the easier, more appropriate structure, high functionality and capacity.

3) New security solutions offered by the authors:

In the first and second parts of the cloud computing basics and some of the benefits discussed it extensively. In the third part the application of cloud computing in some of the most important organizations and institutions were reviewed and detailed analysis. Now it is the turn to the authors of the article raised new security ideas.

As we know many organizations are faced with the weakness of power processes because the ability to use a very powerful computer servers or do not – for example, due to economic problems. And also if you have such a powerful system so that processes these systems does not involve continuous, and therefore the cost of additional maintenance Respectively. So the only proposal that in the present age to them is that of Cloud Computing. But when we order them to make use of the Cloud Computing Security can be in terms of corporate organizations also deem a particular Government and military agencies and the rest of our comfortable; accordingly the following ideas could be considered:

1. the necessity of the correct use of culture-making in Cloud Computing.
2. training of neural networks in order to remove people who are consistently in the profiles compiled and entered the wrong passwords and also identify the IP address and add this IP address to the list of other users who are not black.

3. the use and training of genetic algorithm in order to remove people who are consistently in the profiles compiled and entered the wrong passwords and also identify the IP address and add this IP address to the list of other users who are not black.
4. the formulation of international rules in order to protect and punish cyber criminals.
5. recognition Sign.
6. the processing of the iris of the eye.
7. fingerprint recognition.
8. processing of faces and mix for a particular profile to the individual inbound.
9. the use of specific computer IP code and encrypted in order to log in to a particular site or organizational profile.
10. having specific hardware specifications for the computers that are going to log on to a specific profile or Network Computing in the Cloud.
11. apply a few steps on the passwords profiles (in the few steps be asked several password).

REFERENCES

- [1]David C. Wyld; “the cloudy future of government IT: cloud computing and the public sector around the world”, *IJWesT*, Vol. 1, Num. 1, Jan. 2010.
- [2] Jean-Daniel Cryans, Alain April, Alain Abran; “criteria to compare cloud computing with current database technology, R. Dumke et al. (Eds.): *IWSM / MetriKon / Mensura 2008*, LNCS 5338, pp. 114-126, 2008.
- [3] Anil Madhavapeddy, Richard Mortier, Jon Crowcroft, Steven Hand; “multiscale not multicore: efficient heterogeneous cloud computing”, published by the British Informatics Society Ltd. *Proceedings of ACM-BCS Visions of Computer Science 2010*.
- [4] Harold C. Lim, Shivnath Babu, Jeffrey S. Chase, Sujay S. Parekh; “automated control in cloud computing: challenges and opportunities”, *ACDC’09*, June 19, Barcelona, Spain.
- [5] N. Sainath, S. Muralikrishna, P.V.S. Srinivas; “a framework of cloud computing in the real world”; *Advances in Computational Sciences and Technology*, ISSN 0973-6107, Vol. 3, Num. 2, (2010), pp. 175-190.
- [6] Kyle Chard, Simon Caton, Omer Rana, Kris Bubendorfer; “social cloud: cloud computing in social networks”
- [7] G. Bruce Berriman, Eva Deelman, Paul Groth, Gideon Juve; “the application of cloud computing to the creation of image mosaics and management of their provenance”,
- [8] Roy Campbell, Indranil Gupta, Michael Heath, Steven Y. Ko, Michael Kozuch, Marcel Kunze, Thomas Kwan, Kevin Lai, Hing Yan Lee, Martha Lyons, Dejan Milojicic, David O’Hallaron, Yeng Chai Soh; “open cirrusTM cloud computing testbed: federated data centers for open source systems and services research”
- [9] Rajkumar Buyya, Chee Shin Yeo, Srikumar Venugopal, James Broberg, Ivona Brandic; “cloud computing and Emerging IT platforms: Vision, Hype, and Reality for delivering computing as the 5th utility”
- [10] Lamia Youseff, Maria Butrico, Dilma Da Silva; “toward a unified ontology of cloud computing”
- [11] Daniel A. Menasce, Paul Ngo; “understanding cloud computing: experimentation and capacity planning”; *Proc. 2009, Computer Measurement Group Conf. Dallas, TX. Dec. 2009*.
- [12] Won Kim; “cloud computing: today and tomorrow”; *JOT*, Vol. 8, No. 1, Jan-Feb 2009.
- [13] Richard Chow, philippe Golle, Markus Jakobsson, Elaine Shi, Jessica Staddon, Ryusuke Masuoka, Jesus Molina; “controlling data in the cloud: outsourcing computation without outsourcing control”; *CCSW’09*, Nov. 13, 2009, Chicago, Illinois, USA.
- [14] Bo Peng, Bin Cui, Xiaoming Li; “implementation issues of a cloud computing platform”; *Bulletin of the IEEE computer society technical committee on data engineering*.
- [15] Daniel Nurmi, Rich Wolski, Chris Grzegorzczak, Graziano Obertelli, Sunil Soman, Lamia Youseff, Dmitrii Zagorodnov; “the eucalyptus open-source cloud computing system”