Challenges Using Cloud Computing Applications for Organizations

Yaghoub Pourasad,
Urmia University faculty electricity, Urmia, Iran

Zabiholah Jistan,
Graduate student of computer software trends, Varamin Branch, Islamic Azad University, Faculty of Computer Group,
Department of Computer Group, Varamin, Iran
Corresponding Author

Hossin Jistan,
Master of computer science computing trends, International University of Imam Reza (AS), Mashhad, Iran

Hamideh Baghdadi
Graduate student of computer software trends, Varamin Branch, Islamic Azad University, Faculty of Computer Group,
Department of Computer Group, Varamin, Iran

ABSTRACT─ In the past decade undeniable impact on computing technology has applications and organizations are trying to offer their applications in this format so that they can benefit from the advantages of this new technology and applications, but in the meantime, problems may arise developers and end users. Cloud computing is not a new technology, but a new approach to providing computing resources and is a model for providing services via the Internet. In fact, cloud computing can increase productivity and save IT resources and provides computing power, so that the processing power of the tool becomes permanent accessibility. Although cloud computing has many advantages, but security in the cloud is very important. This study examined the challenges of implementing cloud computing.
KEYWORDS: cloud computing, application, organizational, managerial clouds

Introduction

A systematic view on any subject makes the uneven development of the various aspects of the subject can be prevented. Look requires a systematic, comprehensive and holistic approaches. There are documents containing objectives and strategies to achieve long-term, large-scale architectural vision and organizational plans, including evidence of such approaches in the organization. Establishment of enterprise information security an integral component in enterprise applications. But short-term approach and this causes the island to continue to face serious security risks. Hence there is a systematic and comprehensive system for information security is indispensable. So far, comprehensive and diverse solutions to information security in an organization formally or experimental system that uses traditional information technology, provided, however, examples of computing with new hazards have suggested that the use of previous work to meet them. Cloud computing is a model for universal access, convenient, on-demand computing resources shared repository that can be accessed quickly and with minimal management effort or service provider interaction, financed and made available. This pattern allows for quick and convenient access to computing resources required user via web connection and also save on costs, Concerns such as scalability, providing resources and reduces flexibility(IBM Corporation ,2012) (Furht & Escalante, 2010) . Cloud computing provides benefits for organizations that have very rapid growth in the near future. It is expected that in the future all organizations, The applicant for cloud services are, but what in the meantime to prevent the tendency of some of them, They are concerned with data security in the cloud environment and ensuring security. According to numerous studies in the field and claims providers of cloud services, do not reassure consumers of information security services and not to trust these claims. Results from the International Data Corporation survey of 244 IT Manager Figure (1) shows that among the 9 major challenge in the field of cloud computing, Security is the biggest challenge, with 74.5 percent, the prime concern of managers dedicated to.(Velte, &Elsenpeter 2010).
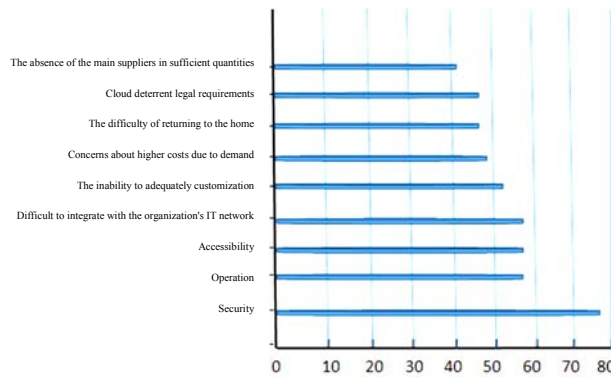
Figure 1: Ranking fundamental challenges of cloud computing (Velte et al., 2010)

Since the cloud involves a lot of technology including networks, databases, operating systems, schedule resources, manage transactions, concurrency control and memory management, security threats do not go according to different needs for security (confidentiality, integrity, access control, privacy, etc.) is conceivable

Characteristics of cloud computing
This cloud model promotes availability and consists of 5 key features are:
1.Self-Serve based on demand: A customer is able to unilaterally computational capabilities such as server and storage network without human interaction with the service provider obtained.
2. Ubiquitous network access: Capabilities are available over the network and accessed through standard mechanisms that are compatible with the Platform or platform client.
3. Resources independent of location: providing computing resources to all customers using multi-purpose model with different physical and virtual resources that dynamically adapts to customer requirements have not served. Generally, the client has no control or knowledge about the exact location provides resources Examples of resources include storage, processing, memory, network bandwidth virtual machines.
4. Rapid elasticity: Capabilities can be upgraded quickly and with flexibility or speed reduced for customers unlimited access to capabilities for rent and based on the amount needed at a particular time purchased.
5. Pay the cost of service rate capabilities using models based on knowledge bills paid up to promote the efficient use of those resources, for example, Measurement of storage, bandwidth, computing resources used and pay for the number of active users per month, Clouds within an organization divide the costs among company units.
6. Clouds potential value for organizations: What benefits of cloud computing for the operation entail? Call it the process of calculating the return on investment when implementing a cloud in the company. The first step is determining the current status of a particular application or a trading system that includes the cost of operation, maintenance, design, development, testing, implementation, and so on. From here you can specify the desired status in cloud computing. In addition to the above, the agility and the ability to develop, the ability to modify information systems to changing business needs and the ability to develop systems to an increasing need to support business processing also are considered. You also need to consider which applications can service organization, information and other applications that are cloud computing platform use. This action is necessary for the application of cloud computing and understand its value.

Pros and cons of clouds
Cloud computing as companies should consider ways to improve organizational architecture and to consider its side effects.
Advantages
Reduce costs: the use of cloud computing reduces the cost of many. Including the cost of hardware and software and cloud computing high costs that companies incur to reduce hardware. Organizations no longer need to purchase high-capacity hard disk drives and processors have advanced. The need for physical storage space and put the information on other storage devices only pays the cost of rent and access to your information. This technology greatly reduces costs. Cloud computing customers the cost of hardware, software and services as well as clashes with the installation and maintenance applications that frees locally. It also reduces the cost of software development process that is more scalable. Increase efficiency: no need for costly increases in system performance. It requires no special hardware features available in the cloud can be used. Easy in maintenance because of the need to install applications easier and at a lower cost per user maintenance is performed. Companies that implement and run their own platforms, Organizations must build their own hardware and software to purchase and maintain and staff to take care of the recruitment system, all these can be costly and time consuming. While cloud computing eliminates the need to perform these

484

tasks. Any device that can connect and communicate with the server have to use cloud computing services is enough and could leave the results to collaborate with others. Information and data on personal computers may due to hard disk failure or other problems are gone and the user is able to retrieve your data.

Scalability: Users can see the demand and to dynamically provision resources and the need to prepare prior to the time of maximum resource use.

Rapid implementation: Computers Cloud faster system boot and startup because these computers have fewer processes and programs are loaded into memory. Thereby allowing the computer to other computing systems optimized.

Green technology: cloud computing system because of a virtualized data center environment is less likely to cause warming. Because of the known green technology.

Mobility and portability: users are not limited in the cloud system to a network or specific computers.

This means that if user's change their witnessing is open to all applications and documents them in the form already exists and the possibility of access at any time and place is available to users.

Increased storage capacity: A side effect of this approach is the considerable increase in computer capacity and users do not have to upgrade your computer. This sharing occurs with the spread of high-speed broadband lines that enables users to call at a time centralized computer infrastructure that have been in other space to receive.

Limitations

Data loss may be due to Get lack of information on the processing of location data stored or deleted. Is it possible for an unauthorized person entered into the cloud manipulates or delete the information contained therein.

Stealing credit: hackers may have used the information using the activation code or manipulate or delete the information contained therein. An attacker can obtain information, they change, cancel transactions or direct users to fraudulent websites and e-guidance. With today technology networks so easily through seemingly legitimate site to steal data or through social engineering is possible. Strong authentication techniques, security policies and monitoring to prevent the occurrence of such incidents.

Control over the process: as data storage and processing to the user, therefore, cannot have control over the process. All processes away from the user and without informing them of how the processing is done.

Internal attacks: Cloud employees who have access to the code can use information such as hackers, manipulate or delete data in the cloud.

Legal aspects: legal aspects to prosecute because of the newness do not apply and there is no possibility of complaints.

Qualifications: You may not be properly satisfy user expectations or understanding of the possibilities offered by the customer is not received.

Reliability: While using cloud needs to be resolved, but there are factors such as unauthorized users or other factors listed lack of control over the processes and the reliability decreases.

The ability of Inspection: new cause is still legal aspects to prosecute not apply and there is no possibility of complaints.

Quality of Service: You may cloud service providers to offer differentiated services and wide, but it is likely that the service quality expected by users.

Clouds management

With the arrival of a certain number of services or service may no longer provide follow-up and supervision required for them. Creator's service-oriented architecture called pinch points such moment arises, that is the moment that number is so high that no method of service under management and administration and related technology, manage them all would be impossible.

Service number and difficulty of use in a cloud computing environment, the need to manage more parade.

• Place the service of
• Serve dependence on
• Monitoring of service
• Security Service of

Many services, hosted and maintained by businesses are not so clear due to its axis, to reduce the potential risk; control should be built around them.

In fact, the model of "trust but a" benefit, that is, layers of process and technology in the service of our villages, so the occurrence of any change, such as changes in service or damage, quickly informed , we provide the possibility of adopting reform policies or requirements for "self-repair" technology creates. Services that fail with or without change interact with other users and services will benefit from it. System without the knowledge of the effects of change, may lead to the bankruptcy of a large number of federal agencies, and even every hour, thousands of detriment to raise the clouds will quickly lead to the destruction of credit.

Monitor services in the cloud computing domain is difficult, especially as most of those services is not the owner or do not have the power monitoring interfaces. What cloud providers are exposed, it is what it is all available. Although providers allow the "control room" of their use, but will not be able to service the underlying systems and monitor. Provide participants with a choice of cloud, restrictions should also be considered.

485

Challenges
Vulnerability against recession: Model Admission to the economic downturn extremely retail outlets. During a recession, as companies are cautious, costs incurred to reduce the computer services.

The new software
Software professionals to create software that millions of users rather than run it on your PC can use it as a service, have faced several new challenges.

Accepted: This approach is relatively new and in many cases still is not accepted. IT departments are still very cautious about it because cloud computing platform will not be controlled by them. So far, investors have the courage to invest in risky projects have left a lot of money invested in cloud computing. Ability to control costs and provision of infrastructure when needed, especially to attract new businesses that have fewer resources were available. The Web2.0 companies that have fewer resources normal mode and follow the easy ability to increase or decrease the demand as needed. Larger companies generally wait until new technologies are adopted, and the occasional use of temporary projects that require a lot of additional resources. Like all emerging approaches, the amount of fear, uncertainty and uncertainty, and there are concerns about the development of this technology.

Control:
Service providers, Consultants and IT platforms to support the business practices of a particular company did not design. Also, users will not be able to change the technology platforms when needed. However, considering how technologies providers can best respond to your needs and to change it when you need the job done without the approval or consent of customers.

Bandwidth costs:
Thanks to the high bandwidth network, even when the user is using the Web as a universal computer, the feeling of working on the local system. However the following problem arises: While cloud computing can help companies save Creating cost of equipment and software, but they have to bear the cost of charging higher bandwidth. The cost of bandwidth is likely to be small for Web-based software applications that are data-intensive will be less, But when, say, a multi-terabyte database now runs through cloud computing this cost can be very high.

Trapped by providers and standards:
The need for open standards for all manner of using the Web as a universal computer there. As the number of cloud service providers, will be the importance of further displacement. If the company is one of the service providers are dissatisfied or if the seller cannot withdraw from this business is not necessarily easy and low cost, be transferred to another provider or the service again to return within the company. Instead, companies should re-formatting their data and applications and move them to a new provider that is potentially complicated process and if he wants to bring services into the company to employees who fulfill the necessary skills to work with the technology employed.

Increasingly, web users and providers will be dependent, so when service providers Terms of Service or later will change its operating procedures, its users feel trapped and desperate. For example, imposes new restrictions on the use of a feature or disables it for a few months in order to improve it. Providers may also decide to remove a feature that was years in the free offers but the securities sector to maintain and even increase its price.

Transparency of access:
If the company cannot demonstrate who has access to customer data and how to prevent unauthorized access to information Employees will not be able to audit their capacities, future clients by successfully come out. Cloud computing providers concerned to third parties on previous monitoring system by documenting procedures designed to meet the needs of customers meet their data security.

Reliability:
Cloud computing has not always provide the reliability Mesmer. For example, Salesforce.com customers on February 12, 2008 for a period of 6 hours and three days later services were not able to get services sS3 Amazon, EC2 was interrupted for 3 hours.

Privacy:
Privacy advocates have criticized the private cloud model because they can control cloud service providers and monitor legal or illegal on the data and communications between users and cloud hosts have service.

United States of America events such as the National Security Agency's secret program with companies, T & AT, Verizon that more than ten million US citizens seized telephone, creating distrust among privacy advocates have been.

Security:
The relative security of cloud computing is a controversial issue that might delay the adoption of cloud. Some believe that data security is higher when managed within the organization, while others believe that service providers a strong incentive to maintain your trust and therefore a higher security level will apply.

The availability and performance:
In addition to safe flow of data, the availability and performance of applications that are hosted on the cloud for users of high importance in the region.

Conclusion

Introduction of new technology in the organization, many challenges associated with the implementation and use of technology brings. Therefore, it is important not only to the challenges associated with any new technology or implemented detected, But rather a strategy to help organizations better manage challenges and they reduce the set. Organizations rather than keep the information on the PC, they can keep it on the server on the Internet and the computer is no not matter where it is. It is possible that information on the number of computers is not just computer maintenance. Information is everywhere in the air, In the clouds and the users when connected to the Internet and have enough bandwidth, they can carry out their tasks.

References

[1] D.S.linthicum, Cloud Computing and SOA Convergence in Your Enterprise, Addison-Wesley, Canada, 2212.

[2] J. W. Rittinghouse, J.F. Ransome, Cloud Computing
Implementation,Management,and Security, CRC press, London,2212.

[3] .Kipp , L.Schubert , Ch.G.Pollmann, Dynamic Service Encapsulation, "First International Conference, CloudComp", Germany, October 11-21, 2221, 217-232.

[4] R. Gobner, K.A.Hummel, H.P. Schwefel, Modeling Movable Components for Disruption Tolerant Mobile Service, "First International Conference, CloudComp",Germany, October 11-21, 2221, 232-246.__

[5] Sethi.S, Sahu.A and Jena.S.K, Efficient load Balancing in Cloud Computing using Fuzzy Logic, IOSR Journal of Engineering (IOSRJEN) ,Vol. 2, Issue 7, pp.65-71,2012.

[6] Distinguishing Cloud Computing from Utility Computing (http:/ / www. ebizq. net/ blogs/ saasweek/ 2008/ 03/ distinguishing_cloud_computing/