Charm: A Cost Efficient Multi Cloud Data Hosting Scheme With High Availabilty

[1]k.priyanka,[2]k.Ramya, [3]N.Bala subramaniyan,[4]M. Mohammed rafi.

[1]Final year MCA, Mohamed Sathak Engineering College, kilakarai.

[2]Assistant Professor,Dept of MCA,Mohamed Sathak Engineering College,kilakarai.

[3]Assistant Professor Dept of MCA Mohamed Sathak Engineering College,kilakarai.

[4] Professor Dept of MCA Mohamed Sathak Engineering College,kilakarai.

Abstract:

Nowadays increasingly enterprises and organizations are hosting their information into the cloud, in order to decrease the IT maintenance cost and develop the data reliability. However, facing the numerous cloud vendors as well as their heterogeneous pricing policies. customers may well be at a loss with which cloud(s) are suitable for storing their information and what hosting policy is cheaper. The all-purpose status quo is that customers usually put their information into a single cloud (which is subject to the vendor lock-in risk) and then simply trust to chance. This paper proposes a novel information hosting scheme (named CHARM) which integrates two answer functions desired. The first is selecting several suitable clouds and an appropriate unemployment strategy to store information with minimized monetary costand definite availability. The second is triggering a transition process to re-distribute information according to the variations of information access pattern and pricing of clouds. We evaluate the performance of CHARM using both trace driven simulations and prototype experiments. The results show that compared with the major existing schemes; CHARM not only saves around 20% of monetary cost but also exhibits sound adaptability to information and price adjustments

Keywords:

Multi-cloud; data hosting; cloud storage.

I.INTRODUCTION

Cloud computing uses shared resources, shared computing resources and common services used by multiple users. The services are provided on demand depends on the load and requirements. The computing machines are not owned but they are leased based on the requirements of the organization. We use the shared pool of resources rather owning the specific resources. They are billed as per usage and there is no fixed cost associated with the usage of the resources. They can be configured, upgraded and downgraded as per the need with basic setup/configuration. Cloud services come with pre-installed software's and configurations which make the users to start using the services without any time delay. Cloud computing provides variety of choices and combinations which gives maximum flexibility to the organizations to cater their requirements or environments. Cloud provides ability to grow the computing resources like disk capacity, processing capacity and network without any effort or initial installation. The server needs no maintenance as they are placed in the third party data centers. Companies do not need to build or operate their own data centers. It surely reduces the upfront cost associated with them. The network administrators can access the systems remotely using browsers and tools.

II.RELATED WORKS

- Data Storage and data integration has received a lot of attention at the data management and application level. It deals with the problem of multi-cloud storage with a focus on availability and cost factors. Because of more cost the customers are unable to choose suitable cloud.

- There is a concern about moving large amount of data into a single cloud is similar to vendor lock-in risk.it deals with stores data, even critical data into multiple clouds assuming data availability and security.reviewed the cloud computing features provides more benefits to the users in terms of low cost and availability of data, providing security to the cloud computing is a main factor.

- The single cloud service provider for outstanding is not trusted because of failure in service availability and possibility of attacker like malicious virus which corrupts the stored data. Here a multi-cloud is emerged by inter clouds or cloud of clouds where research related to single cloud problems can be addressed by using multi-cloud

- Many new tools like Apache library cloud which provides a unique interface

on different clouds for convenient deployment of multi-cloud services information given in . This methodology helps in communication between different clouds.

• It has reviewed that cloud computing technology has main drawback vendor lock-in. The cloud service developers will not allow to get service for free and does not allow to mix and match applications and services .hence they introduced cloud blueprint so that developers to mix and match services for free of cost. By this it is facilitate to mix and match the configuration, application and stacking the resources into cloud.

III.PROPOSED SYSTEM

The proposed scheme, a original cost-efficient information hosting system with high availability in various multi-cloud, named CHARM. It brightly puts information into multiple clouds with minimized monetary rate and certain accessibility. Specifically, I combine the two widely used employment mechanisms, i.e., reproduction and deletion coding, into a uniform model to meet the required accessibility in the presence of different information access patterns. Major existing schemes which will be elaborated in, CHARM not only saves around 20% (more in detail, 7% 44%) of monetary charge.

IV.OVERVIEWOF TECHNIQUES

Registration (Data owner/User)

This element is responsible information owner and user list. They can their user Id and password through which he can login to the organization. User can register by giving his/her name, address, contact number, email and his thumb image. Data owner can register by giving organization name, address, contact and email. The username and password will sent to the Data owner /User's registered email id.

Multi Cloud

Multiple cloud servers are created and maintained by the cloud service provider. This is mainly used for data storage. The space of the each server will be efficient after the information storage.

Data Hosting

In the information hosting cost-efficient information hosting model with high accessibility in various multi-cloud, named CHARM. The whole model is located in the proxy. There are four main components in CHARM: information Hosting, Storage Mode Switching (SMS), Workload Statistic, and Predictor. Workload Statistic keeps collecting and tackling access logs to guide the placement of information. Hosting decides storage mode and the clouds that the information should be stored in.

Cloud Storage

Cloud storage services have become increasingly popular. Because of the importance of privacy, many cloud storage encryption schemes have been proposed to protect data from those who do not have access. All such schemes assumed that cloud storage providers are safe and cannot be hacked.

Encryption Process

Owner module is to upload their files using some access document. The information will be encrypted using AES algorithm. Dynamic information encryption technique will be used for the uploaded data. So the decryption key will be sent as an OTP to the user. This key will be discarded after 30 seconds. The new OTP will be generated and sent to the user's email.

Security

The user has to give his/her thumb impression during login process. If the thumb impression doesn't match, he/she will be considered as a fake user and fake file will be sent to the user

DESIGN FEATURES

Interoperability

Because computer systems commonly require interaction between newer and older applications, the .NET Framework provides means to access functionality implemented in newer and older programs that execute outside the .NET environment. Access to COM components is provided in the System. Runtime. Interoperability Services and System. Enterprise Services namespaces of the framework; access to other functionality is achieved using the P/Invoke feature.

Common Language Runtime engine

The Common Language Runtime (CLR) serves as the execution engine of the .NET Framework. All .NET programs execute under the supervision of the CLR, guaranteeing certain properties and behaviours in the areas of memory management, security, and exception handling.

Language independence

The .NET Framework introduces a Common Type System, or CTS. The CTS specification defines all possible data types and programming constructs supported by the CLR and how they may or may not interact with each other conforming to the Common Language Infrastructure (CLI) specification. Because of this feature, the .NET Framework supports the exchange of types and object instances between libraries and applications written using any conforming .NET language.

Base Class Library

The Base Class Library (BCL), part of the Framework Class Library (FCL), is a library of functionality available to all languages using the .NET Framework. The BCL provides classes that encapsulate a number of common functions, including file reading and writing, graphic
rendering, database interaction, XML document manipulation, and so on. It consists of classes, interfaces of reusable types that integrate with CLR (Common Language Runtime).

Simplified deployment

The .NET Framework includes design features and tools which help manage the installation of computer software to ensure it does not interfere with previously installed software, and it conforms to security requirements.

Security

The design addresses some of the vulnerabilities, such as buffer overflows, which have been exploited by malicious software. Additionally, .NET provides a common security model for all applications.

Portability

While Microsoft has never implemented the full framework on any system except

Microsoft Windows, it has engineered the framework to be platform-agnostic and cross-platform implementations are available for other operating systems (see Silver light and the Alternative implementations section below). Microsoft submitted the specifications for the Common Language Infrastructure (which includes the core class libraries, Common Type System, and the Common Intermediate Language), the C# language and the C++/CLI language[8] to both ECMA and the ISO, making them available as official standards. This makes it possible for third parties to create compatible implementations of the framework and its languages on other

ARCHITECTURE OF DIAGRAM:
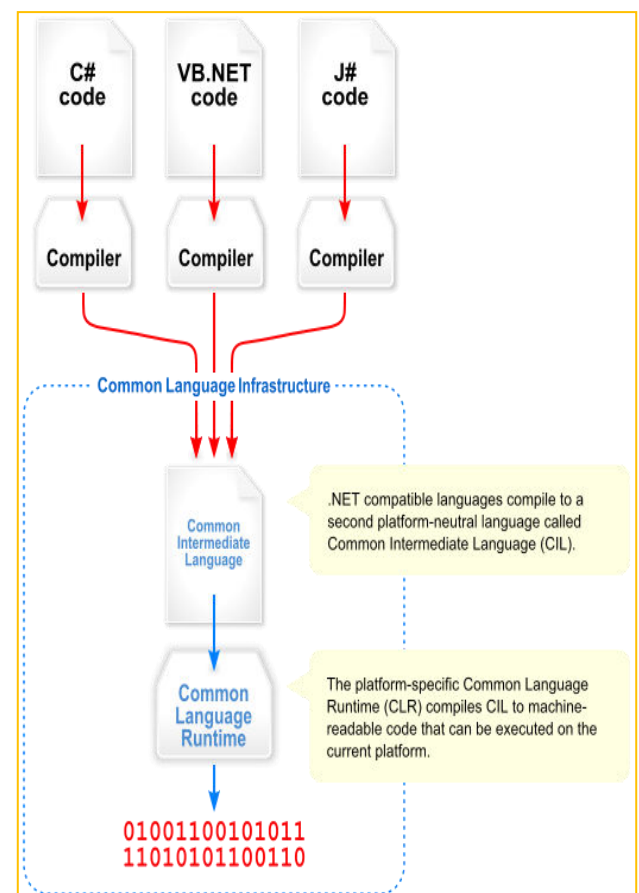
ALGORITHM:

The AES encryption algorithm defines a number of transformations that are to be performed on data stored in an array. The first step of the cipher is to put the data into an array; after which, the cipher transformations are repeated over a number of encryption rounds. The number of rounds is determined by the key length, with 10 rounds for 128-bit keys, 12 rounds for 192-bit keys and 14 rounds for 256-bit keys.

The first transformation in the AES encryption cipher is substitution of data using a substitution table; the second transformation shifts data rows, the third mixes columns. The last transformation is a simple exclusive or operation performed on each column using a different part of the encryption key. Longer keys need more rounds to complete.

V.CONCLUSION

Cloud services are experiencing rapid development and the services based on multi-cloud also become prevailing. One of the most concerns, when moving services into clouds, is capital expenditure. So, in this paper, we design a novel storage scheme CHARM, which guides customers to distribute data among clouds cost-effectively. CHARM makes fine grained decisions about which storage mode to use and which clouds to place data in. The evaluation proves the efficiency of CHARM

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