International Journal of Web-Based Learning and Teaching Technologies
Volume 16 • Issue 4 • July-August 2021

OCC:
A Hybrid Multiprocessing Computing Service Decision Making Using Ontology System

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ABSTRACT

In the recent trends, cloud computing service users agreed on the concept of pay and use model by accessing all the best services provided by the providers. The major problem here is that there is no standardization so that not everyone coming into the same platform. Now cloud computing efficiently uses time, cost, and effort. In this internet, speed is playing an important role. With the development of each and every field with its proper limitations, the researchers come into the picture that the ontology concept is playing a vital role in the field of computing. The key role of ontology is supporting the knowledge sharing activities. It is giving the set of criteria to prove the use of ontology in the computing world. In the design and development of ontology for computing and mathematics, the information from data centers is very important. The selected design and decisions give efficient and effective results to prove how ontology is playing a vital role in the computing system.

KEYWORDS

Cloud Organizations, Cloud Service Provider (CSP), Cloud Services, Cloud Simulation, Computing Parameters, High-Performance Computing, Ontology System, Resource Management

INTRODUCTION

Cloud computing is a very tremendous area of computing and research for the industries and the organizations which are providing the services. Each and everyone is talking nowadays about the concept of cloud computing. There are several applications working under each data center. The computing provides the services on the basis of the pay-and-use model. It is working on the concept of as a service model. The resources are being kept in the data centers. The major problem in the computing is that there is no standardization so that not everyone coming into the same platform. There is a lot of services provides to provide the service in various ways. Now the cloud computing efficiently uses time, cost and effort. The way by which computing is being processed are applications Layer, software system, software infrastructure, inner part of kernel and the highly advanced hardware with the logic's (Figure 1). Now the first is the application layer in which end users play a vital role. The layered structure of cloud computing is very important in terms of user's perspectives. The next layer that is software system were the idea of ontology is being developed with the wave software's. It is being prepared on the basis of the functionality. In this the end users can use their concept and make the ontology according to their idea. The providers can provide all the platforms

DOI: 10.4018/IJWLTT.20210701.oa6

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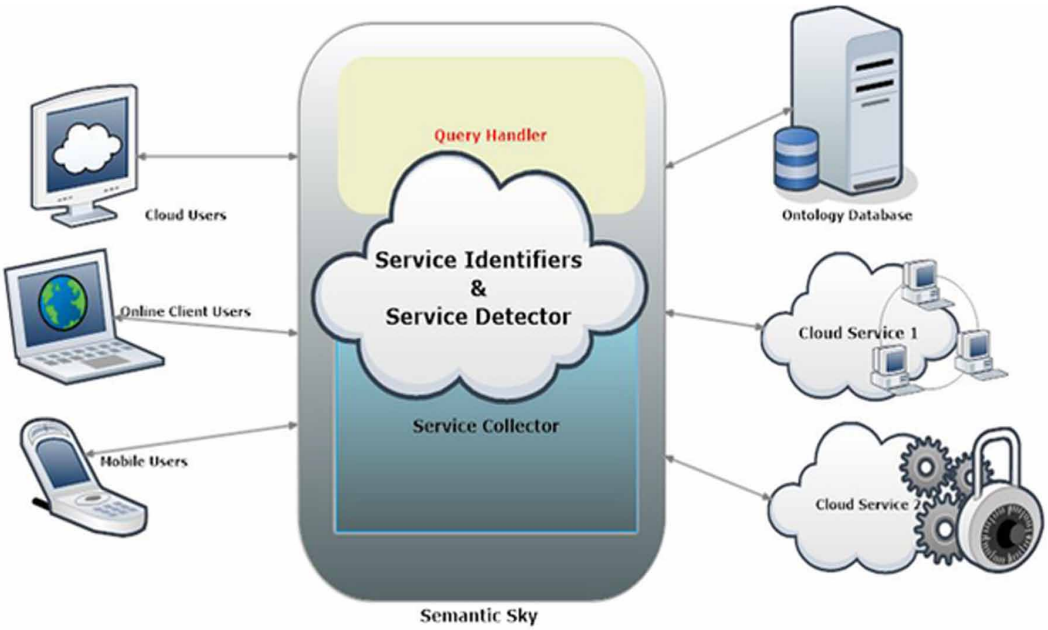
Figure 1. Layered Structure of Cloud Computing



of programming software where the end users can perform their applications. The third layer is the software infrastructure which consists of lot of information or resources on the basis of their characteristics to the end users by Buyya et al. (2016, 2017 & 2018). The term infrastructure tell that everything which to be needed to construct will be provided by the provider side to the users. The main focus and application contexts of cloud computing ontology's lined within the scientific literature are cloud resources and services description, cloud security, cloud ability and cloud services discovery and choice. Merge of ontology's means that creation of a brand new metaphysics by linking up the present ones. The third layer deals with the inner process of the kernel in which all the data is stored in a physical machines and servers which are being taken care by the provider. The kernels are playing an important role because they are useful in making the VM and clustering systems working as middle ware. The last part of the system is the hardware's which are becoming very advanced to the AI. In the hardware the ontology system works like a backbone. In cloud computing it is often named with HaaS hardware as a service by Mell (2011). Ontology system is the knowledge-based mathematical structure based on the domain. The ontology's are kept on different servers of ontology. There are different configuration and capabilities of ontology servers.

With the ontology the research design the pathway of the system, a need for storage space is increasing. Ontology is the web system which is being maintained for the time and cost reduction to save storage space. It removes the identical content of data by comparing. The research paper is divided in six parts in which the first part deals with the introduction of cloud computing world. The section also clarifies the impotence of the computing in the upcoming technologies. In the section second the research is dealing with the challenges in the computing world. This section also forms the previous things done in the computing world of cloud and ontology. The third section forms the emerging trends and impact in the computing parameters. How the parameters are being affected by the computing system. These parameters can change the working of computing system. In the fourth section the research is forming the global cloud exchanges and marking with the help of ontology. The importance of ontology system and its working with computing is explained. The fifth part of this research tells about the proposed work. In this section the algorithm is being designed. The designing

system of the algorithm is also shown with the help of the DFD and flow diagram. In the last section of this research work the simulation is done. The outcomes are also being discussed under this section.

CHALLENGES: STATE OF THE ART AND OPEN ISSUES

In the early 90th the computing was very slow and is done in very small area. The local systems are only working together. As per that time user have to install all the software. The hardware is very large and costly. The utilities are very costly for storing the data and size also very large. In fact in the year 1961 computing is delivered to the public for internet as utilities. In the early 20th century computing services came into the picture. In the 21st century the concept of cloud computing is evolving in a rapid speed. The start of cluster and grid also starts working. On the other hand virtualization is playing a vital role in the technological world of cloud computing. There are different types of computing that are now being taken into consideration in large perspectives with its enhancement. Nowadays the P-P computing, Grid computing, cluster computing, SOA, Cloud Computing, Fog computing, IoT and many more to go. The concept of P-P deals with the sharing of information or resources with direct interchange between them. The services and resources interchange the steps and processing, storage management, cache memory, etc for the storage of information or data. P-P performs to compute the connectivity, power, storage and to provide benefits to the end users (Gutierrez-Garcia et al. 2013; Ergu et al. 2013; Stuckenschmidt, 2003).

At the time of SOA i.e. Service oriented architectures is an important issue for the loosely joint, based on standards, rule free scattered computing system. The development of SOA with the interface of business in the computing world is to satisfy all the needs of the providers. As the technology increase in the rapid way the collaboration with the software, hardware's on the internet stats. The SOA works with the futures of Service needier (End users), service providers, and the communication medium between them. With the development of grids and clusters computing start growing per day. The concept of grid highlights the power system on demand. The researchers are doing in the large scale systems like earth grid system, open science grid, tera grid, and data and software grid. There are also many organization working in the concept of grid are OGF, OASIS, etc. The concept of clustering based on the classification of resources according to their features by Sim (2004).

The concept of ontology is also most important to discuses that the concept is based on conceptualization. It's a philosophy term. Ontology is the part of AI where AI tells that anything exists which can be represented. The staring of the knowledge standardizes view from 1992 and the communication between the knowledge views. In the starting no knowledge systems are communicating. There should be maintained some agreements when the communication and sharing of knowledge started. The ontology's are working as a software system with the knowledge. It's very large way of dealing the knowledge system which enables the libraries which are being delivered with the internet (Dobson et al. 2005; Youseff et al. 2008).

Nan et al. (2012) discussed Sight and sound cloud was a creating enlisting perspective that could effectively process intuitive media applications and give multi-QoS courses of action to customers. Two vital troubles exist in the sight and the sound cloud: the advantage cost and the organization response time and proposed lining model to propel the advantage dissemination for blended media cloud to require advantage plan. Specifically, that arrangement handled the advantage cost minimization issue and the organization response time minimization issue independently.

According to Radulescu et al. (2002) organize time task reserving for scattered memory systems, list arranging was, all around, recognized as an engaging philosophy, since it gave ease with extraordinary results. Once-over booking counts design endeavors masterminded by their need. Their results certify that the adjusted types of the summary booking estimations get an execution for all intents and purposes indistinguishable to their exceptional variations, yet at a through and through cut down cost.

Squicciarini at al. (2003) proposed a novel agent based designing in the Cloud, where the Cloud traders was responsible for the organization decision and arranged a stand-out requesting methodology for managing the information of a broad number of Cloud master associations and a short time later make profitable organization assurance estimations that rank potential authority communities and aggregate them if essential and exhibit the capability and practicality of their approach through a test analyze with the honest to goodness and made Cloud data.

Al-Feel et al. (2011) discussed looking in the substance of different kind of records in the cloud in perspective of cosmology, this approach settled the weaknesses that existed in the Google File System that depends upon metadata and proposed new conveyed stockpiling building in light of a reasoning that could store and recoup reports in the cloud in perspective of its substance. Their new plan was attempted on Cloud Storage Simulator and the result shows that the new designing would do well to adaptability, adjustment to non-basic disappointment and execution.

Avanes et al. (2008) investigated about the Endeavour arranging work forms in self-dealing with remote frameworks for fiasco circumstances. Most research work in the field of work process booking had been driven by temporary and causality prerequisites. In that approach, an adaptable booking estimation used that finds a sensible execution game plan for work process practices by moreover considering resource partition impediments and dynamic topology changes. Their approach utilized a multi-mastermind scattering estimation which extends with frameworks to adjust to arrange stream.

According to Mishra (2018) the main focus on a three rate production model. The model works on the deteriorating products and advertising on demand prize. The management of storage is allowed. The main aim of the researcher is to production rate which may be countable and proportional to the requested rate. The author is trying to optimize the cost, time, profit, efficiency of the production rate. The algorithm made by the researcher gives optimized results on the demand rates.

Mishra, S., & Jain, S. (2015) explained about the concept of ontology. The main concentration was the semantic web (SW) formulation which is the part of www. The base of SW is its lexical and logical semantics. The information which is being taken with the help of ontology is helpful for both users and machines. In the research work author had produced a different method of ontology representation and reasoning for the semantic analysis.

Most of the researchers are working in cloud computing development and services. Most of them have the great knowledge of the services and parameters. The view of system is based on the mindset of various services based on rules (Sim & Wong, 2004; Stuckenschmidt, 2003). The cloud users form the demanded applications on some specific features from providers. These are lots of parameters researched during the survey. Some of these parameters on which services are taken care of according to the researchers are as follows:

- Reliability: How the cloud providers are reliable? When these services should be trusted? how it is maintain the qualities of service?, Which service is better from overall service provided by the providers? What should be the performance level of each service?
- Cost and Time: What should be the cost of the service? How the costs differ according to quality of services? How the providers fix the cost of a service in computing? What should be the time taken to provide the service to the end users? How the time calculation done by the providers? What are parameters which are going to effect the time and cost of the service?
- CPU Utilization: What is the basis of the CPU Utilization? What are factors affecting it? How to identify the features of the system? What should be the configuration of the systems?
- Virtualization: Which type of virtualization to be done? What is the process of it? How users can do such things if he is a business man?
- Ontological: What is the role of this concept? How it is applicable with the computing system? Which types of software are coming under this? How one can understand the working of it? What is the process of working in the computing applications?

- Connectives: Which technology will be used to provide the services to the end users? How the connection should be made? What are the devices which can do such type of connections?

The literature tells with the research which deals with several mechanisms of virtualization of the resources. The proposed way is to design the algorithm which defines its structure. The overall conclusion of the research comes into the picture to satisfy the major issues of the cloud scheduling algorithms like increasing cost, time, QoS, Management of Information, SLA, Security of information and many more. The research proposed their own algorithm that deals with the concept that fulfills the requirements of the basic obstacles to get the best and efficient results. The overall conclusion of these research challenges is to solve some of them with the help of previous researches in this field. The main issues that are taken care of are the efficiency and the performance measure in the field of computing. The research is going to describe the path way by which the time and cost of the resources can be decreased. The performance should increase. The research is carried out in a large way by using this scenario for the real time users like face book and what up. The research deals to provide computing for large amount of users and in very less cost and time. The real time data set is being collected on the basis of feedback system which being developed in both the side. The provider can provide the services list and the end user provide the things that which service is best and which is not.

EMERGING TRENDS AND IMPACT AREAS

In recent rapid development of cloud computing concept that "Cloud computing is internet based technology used in the computer system, in which it dynamically change its structure and viewpoints of resources which are being provided as a service to the users over the internet." The concept of cloud computing deals with the providing the application services in the world. The most important and basic services of cloud computing are IaaS, PaaS and SaaS. Now cloud computing is like the daily utility of the human being like the five most requirements of the life. Cloud computing have changed all the IT industry and IT hardware. The developers of cloud computing makes it a new innovative thing of the users (Armbrust et al. 2010; Birman (2009)).

Cloud Organization

The standard organizations are playing a vital role in the development of the IT industry. These organizations have many service level agreements. These are providing the parameters and the services provided by them on the basis of the SLA. Some of the popular cloud organizations and the providers working under them are as follows (Tiwari et al. 2013, 2016; Younge et al, 2010):

- Cloud Security Alliance (CSA): In this organization the security is the main service in which CSA is taking care off. There are lots of security services which are being provided by the CSA. The main aim of this organization are proper growth of capability, investigate systematically to find best one, developing the awareness of the cloud security among the users.
- Distributed Management Task Force (DMTF): The aim of this organization is to provide the IaaS services i.e. Infrastructure as a Service, which deals with the proper standardization of it. These services should be flexible, scalable, high-performance infrastructure, Virtualization Format, open, secure, and portable format for the VM's that runs in a software system for the end users.
- National Institute of Standards and Technology (NIST): Its main aim is to provide proper standardization of the services and their competitiveness. It deals with standardization, measurements, science and technology to understand the proper concept of cloud computing.
- Amazon and Rack space: It works for the only supply of software and the communication devices. These organization also provides the web service and storage devices. These organizations are working as an ecommerce services.

Cloud Parameters

In cloud computing technology the service are being delivered to the end users on the basis of the cloud parameters. Cloud parameters are very efficient and effective for the providers as well. Some of the parameters are going to be discussed. The first one is the resource computation in which VM are playing an important role to provide the services to the end users. These also take care of IaaS Infrastructure as a Service (IaaS). The next is data Storage management in which information is being stored in anyplace and anytime. It is commonly known as DaaS. It also maintains the user's data and information, including highly advanced availability, reliability, efficient performance, replication and data consistency for the requirement of the system implements all of them together. The next parameter is the Communication which is a service provided to the users on the requirements of their services. CaaS main aim is to provide proper network security, resource provisioning in a dynamic way, Traffic management system, increasing the bandwidth, Message delay, secure communication and network monitoring. In the concept of Virtualization which is an illusion of each and every thing in the computing. But it is planning an important role in the working of computing system. It works for the information computation, storage and resource provisioning networking. It works with each and every place where they are being developed, configured, initialized, migrated, stop, managed and isolated system. Monitoring is also a great parameter on which data is being controlled. It identifies the best of all the services to provide the end users. The security parameter is very important in everywhere in the computing system. It deals in the data centers, hardware's, software, platforms, Infrastructure etc. This includes protecting critical information from theft, data leakage and deletion. Cloud security does not change the approach on how to manage security from preventing to detective and corrective actions (Armbrust et al. 2010; Tiwari et al. 2013).

Cloud Services

The Cloud services are the services which are now in high demand in all over the world. It's provided by the providers of the company or organizations. These are maintained in such a way that it should be easy to understand, salable and dynamic in nature to be provided in the applications. These resources and services are managed by the providers. The cloud services are changing in a rapid way to fulfill the user's requirements. The CSP's are providing everything to the users according to their needs. The best example is the cloud services which consist of data storage management and its recovery, Emailing services, Computer offices and documents, searching of data, managing all the services (Armbrust et al. 2010; Van Reness (2009); Nair & Sharma (2012); Buyya et al. 2008). The Most basic service which is being provided by most of the providers is as follows:

- Software as a service (SaaS): These are the service in which software are being distributed to perform various tasks. These services are paid on time by CSP's to the end users over the network system. The features of SaaS are easy to update any application or software, services are based on periodical way, No hardware is needed, etc. This type of services is also called as on-demand software's or hosted software's.
- Platform as a service (PaaS): It works for the operating system services. This will allow creating any application in any platform of the computing. Some of the major platforms of the computing like Amazon Web Services, Microsoft Azure Services, Sales force app, etc.
- Infrastructure as a service (IaaS): It uses data storage, Computer networking and server installing, Hardware's, IC's and other devices are made available for the operation to users. It is also some time known as HaaS. In these services at the time of service providing providers also take care of the policies for the end users. The major features of it are dynamic scaling, Automation of administrative services, Virtualization of platforms, network connectivity, etc.
- Mobile backend as a service (MBaaS): it is also known as backend services in computing. Under this web app development and the mobile app development for the cloud application are being

provided by the providers. It includes Notifications, Management of information, collaboration of websites, etc.

- Utility Services: There are lots of companies which are storing the information in different places. They are creating the VM in their services for the users.
- Managed Services: There are several systems made application used in computing are managing the cloud services for the providers.
- Service Commerce: It's an important application providing the services which is the collection of all the services. It also provides the application to the organization according to their needs.
- Amazon Web Services: This service is increasing in a larger perspective. The Amazon packages AWS with salable and virtually unlimited computing, storage and bandwidth resources. AWS uses the subscription pricing model of pay-as-you-go or pay-for what- you-use. The major services comes in AWS are EC2(Elastic Computer Cloud), AS3(Simple Storage Service), Cloud Front, Amazon RDS(Relational Database Service), Amazon SNS(Simple Notification Service), Amazon SQS (Simple Queue Service), Amazon VPC(Virtual Private Cloud).

Cloud Broker

The Cloud Broker is the important individual or an organization that is connected to both the sides. These can facilitates the selection process of cloud resources between both. A cloud broker is the middle ware to do deal between both. These are some time called as cloud agents. They take care of both the sides. They have their own policies to maintain the balance between them. They put with their important objectives such as term and conditions, development and details of services, Cost, Timing, etc.

Global cloud exchanges and markets

The world wide computing system is designed to do the marketing in the computing world. So the research is dealing with the ontology system. Ontology system is the knowledge based mathematical structure based on the domain. The way by which cloud computing is using the ontology's is shown by the figure 2. Data flow diagram for Cloud Ontology System services. The ontology's are kept in different servers of ontology. There are different configuration and capabilities of ontology servers. There are lot of OA (Ontology Agents) searches for the servers and their unique services. These OA can communicate with the providers. These OA are performing many work like Creation and update of ontology, supporting the FIPA agents in finding the shared ontology, translating the functions and expressions, responding the questions asked by the agents, searching the public and private ontology's of different domains (Mishra, S., & Jain, S., 2015).

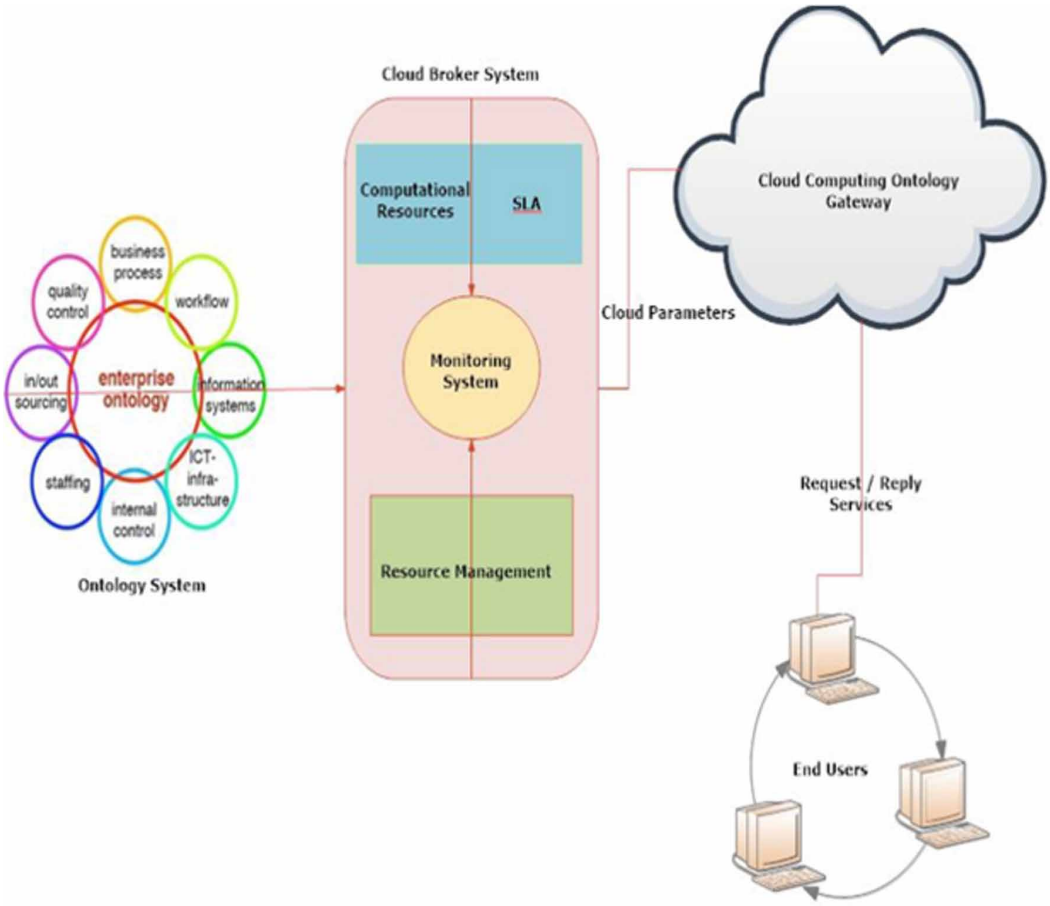
Ontology Organizations

Organizations that is structured and managed to meet a need or to pursue collective goals of ontology's and computing system. The start of ontology organization is with FIPA (Foundation for Intelligent Physical Agents) which consists of intelligent people. It is dealing with the knowledge which applicable in several applications. FIPA designs its working process and then gives the final touch. FIPA deals with both the way i.e. individual or collectively with members. The membership is given to any provider who full fills the agreements of it (Ma et al. 2011; Veloudis & Paraskakis (2016); Han & Sim (2010), Mishra, S., & Jain, S. (2016)).

Ontology Parameters

Ontology is the great idea in which the importance of parameters plays a key role. FIPA and others like FIPA deigns the parameters of it. The OA play an important role in providing the services based on these parameters (Al Feel et al. 2011; Sundareswaran et al. 2012). Some of the service such as searching of public ontology, maintaining the information set, expression translations, request and

Figure 2. Data flow diagram for Cloud Ontology System



reply to all queries, Identification of each ontology's, etc are the most important to do research. The key role parameters of ontology are:

- Agents which are accessing the services.
- Agents which provides these services.
- Agents who enable to do communication between the ontology's.
- Ontology Agent Registrations in the provider side.
- Monitoring and Searching of Ontology's that will communicate with each others.
- Mapping of ontology in between two expression of ontology.
- Agreements on the language to communicate between ontology.

PROPOSED WORK

The proposed work is being developed with the help of cloud computing model and the Ontology System. The algorithm is named as OCC: Ontology Based Cloud Computing. The work is being compared with the pervious algorithms made in this field i.e. ROSP (Rough Set Service Parameter)

Table 1. Comparison of some representative Cloud Ontology Parameter[Buyya, R et al. (2008)

Property / System	Amazon	Elastic compute cloud (EC2)	Google	App engine	Microsoft
Focus	Infrastructure	Platform	Platform	Infrastructure	Software platform for enterprise Clouds
Virtualization	OS level running on a Xen hypervisor	Application	container	OS level through	fabric controller
User access	interface	Amazon EC2 command-line	tools	Web-based	administration
Value-added service providers	Yes	No	Yes	Yes	No
Cloud Simulators	Customizable linux-based Amazon Machine Image (AMI)	Python	Microsoft .NET	Solaris OS, Java, C, C++, FORTRAN	APIs supporting different programming models in C#

optimization technique described by Mahrishi & Nagaraju (2012), MROSP (Modified ROSP), RMROSP(Revised MROSP), ERROSP(Economical Revised ROSP) is being described by Tiwari et al. (2013, 2014, 2015). The compression and the performance is being shown in the figure 3.The performance are be measured in cloud computing with the factors affects. The performance is being measured in the real time processing manner using the information data set that is being shown in the Table 2,3,4.

On the basis of the several parameters of cloud computing and the ontology parameters the researcher comes in conclusion to find some values. The values which are based on their services give the output and results. The major parameters which the research have taken care of are taken by the algorithm as shown in Figure 4 and the flow chart of the algorithm is being described by the figure 5. The algorithm made below gives better performance than all the previous algorithms.

The use case process helps to design the algorithm. The use case diagram is shown in figure 4. It defines the step by step process of the computing world. On the basis of these steps the algorithm is being prepared shown in figure 5. Here the parameter which is taken care by the algorithm is as follows:

- Throughput: The system defines the quantity of services provided within the regular interval of your time. The most purpose of this parameter is to optimize the resources for the incoming info. Service on demand is that the main parameter of cloud computing handling the SLA provided to each side.
- Latency rate: The rate of data offer informs the execution time and waiting time of the request. Its main aim is to estimate the waiting time of the system.
- The Network property forms: The capability and its standards. Its available deals with the networking from the various devices like mobile, laptops, desktops, etc.
- Speed: The speedy increase of capabilities wills kind the resources that provide the big range of finish users at whenever.
- Response Time: It is the time by which the process cans response the provider to the end user and vice versa. The time should be very less so that most of the algorithms taken care of it. It is also used by lot of companies and organizations.
- Total Time Taken: The time is taken with the aid of information centers to provide a consumer request. The response time version sample throughout the day as the weight changes.

Table 2. Information about the SP and DS

Service Parameters (SP_k)

Data Center (D_{ij})

SPk / Dij	SP_1 (Application Security)	SP_2 (Data Operation)	SP_3 (Risk Management)	SP_4 (Virtualisation)
D_{11}	6	9	4	7
D_{12}	7	7	8	8
D_{13}	5	5	6	9
D_{14}	7	8	5	6
D_{21}	8	6	9	8
D_{22}	6	9	6	4
D_{23}	7	6	8	8
D_{24}	4	8	5	9
D_{25}	9	7	9	3
D_{31}	8	9	7	6
D_{32}	6	6	6	7
D_{33}	7	9	4	4
D_{34}	8	7	8	8
D_{35}	7	4	7	9
D_{36}	9	9	9	5

- CPU Utilization: The percentage of the CPU service which is being performed by the end users. The Utilization at the time of providing the service.
- Patterns: It's the effect of files. These are different in different applications.
- Technologies Used: The platform languages and the programming done. Java, Java Swing, CloudSim, Sim. Java, etc are the technological languages (Ontology) used in the programming side.
- Cost Operation: The Cost is the operation which deals with all the above parameters. Cost becomes unique in each time.

```
Grab Computing System Methods For Cloud Parameters
Input:  Set of Cloud Performance Parameters (CPP), Cloud Service
Providers (SP), Cloud Broker (CBO), Set of Datacenters (DC), and
```

Table 3. Information about the SP and DS

Service Parameters (SP_c)

Data Center (D_{ij})

SPk / Dij	SP_1 (Application Security)	SP_2 (Data Operation)	SP_3 (Risk Management)	SP_4 (Virtualisation)
D_{11}	1	1	0	1
D_{12}	1	1	1	1
D_{13}	1	0	1	1
D_{14}	1	1	1	1
D_{21}	1	1	1	1
D_{22}	1	1	1	0
D_{23}	1	1	1	1
D_{24}	0	1	1	1
D_{25}	1	1	1	0
D_{31}	1	1	1	1
D_{32}	1	1	1	1
D_{33}	1	1	0	0
D_{34}	1	1	1	1
D_{35}	1	0	1	1
D_{36}	1	1	1	0

```
User (US).
Output: Getting the Efficient Services on basis of Parameters.
Method:
While (CPP ≠ Ø)
{
        SP = select (DC)
        Provide the DC to CBO
        If DC is selected
        {
                SP= SP- 1
        }
}
```

Table 4. Information about the SP and DS

Service Parameters (SP_c)

Data Center (D_{ij})

SPk / Dij	SP_1 (Application Security)	SP_2 (Data Operation)	SP_3 (Risk Management)	SP_4 (Virtualisation)
D_{12}	1	1	1	1
D_{14}	1	1	1	1
D_{21}	1	1	1	1
D_{23}	1	1	1	1
D_{31}	1	1	1	1
D_{32}	1	1	1	1
D_{34}	1	1	1	1

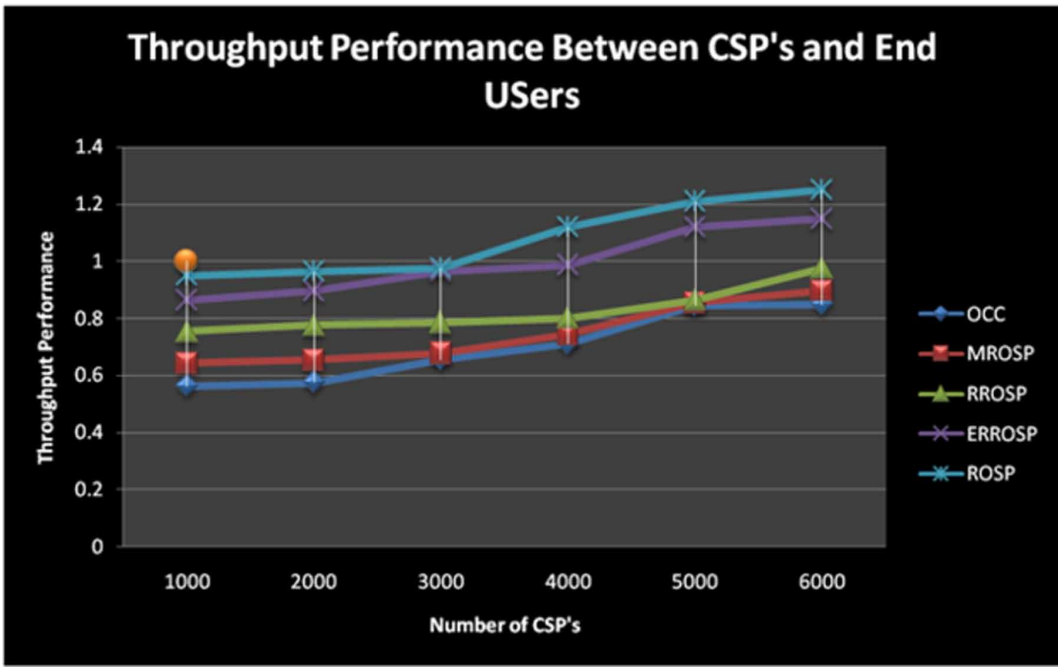
```
Select (Rendered Output)
{
        Flag bit = Match (Best SP provided to DC)
        If (flag == True)
        {
                The Suitable service of Cloud is provided by SP
to the DC.
                If (flag == True)
{
        The Suitable service of Cloud is provided by CBO to the
US.
}
        }

}
```

Efficient Service is provided by the CBO to Users US.

The major parameters which the research have taken care of are taken by the algorithm are performing better than the algorithms which are working previously. In this research algorithm we have increased the parameters. The quality of the services is being improved which is provided to the provider. The cost of providing the service is also decreased. In the previous algorithms the experiments are only done for five parameters 10 CSP's and for 10 datacenters and 50 users. In this

Figure 3. Throughput Performance Compression with the existing algorithms (OCC)



algorithm we have used increased up to 8000 CSP's and the 2 lakhs users. The datacenters are 50 and the execution time is maintained less due to use of the concept ontology. Here we have calculated the throughput and efficient execution time which have combination of several sub parameters. In previous only the total time and CPU utilization, but with the help of ontology we have calculated the execution time (Response Time, Total Time Taken, CPU Utilization, Pattern, and Technologies used) and the throughput (Cost Operation, Latency Rate, Speed, Network Devices, and Hardware Devices). The overall conclusion of the proposed work done in the paper and the methods applied to the satisfaction of cloud computing parameters and ontology parameters. The throughput of the system defines the number of services provided within the regular interval of your time. The most purpose of this parameter is to optimize the resources for the incoming information. The figure 6 tell the flow structure of the proposed algorithm.

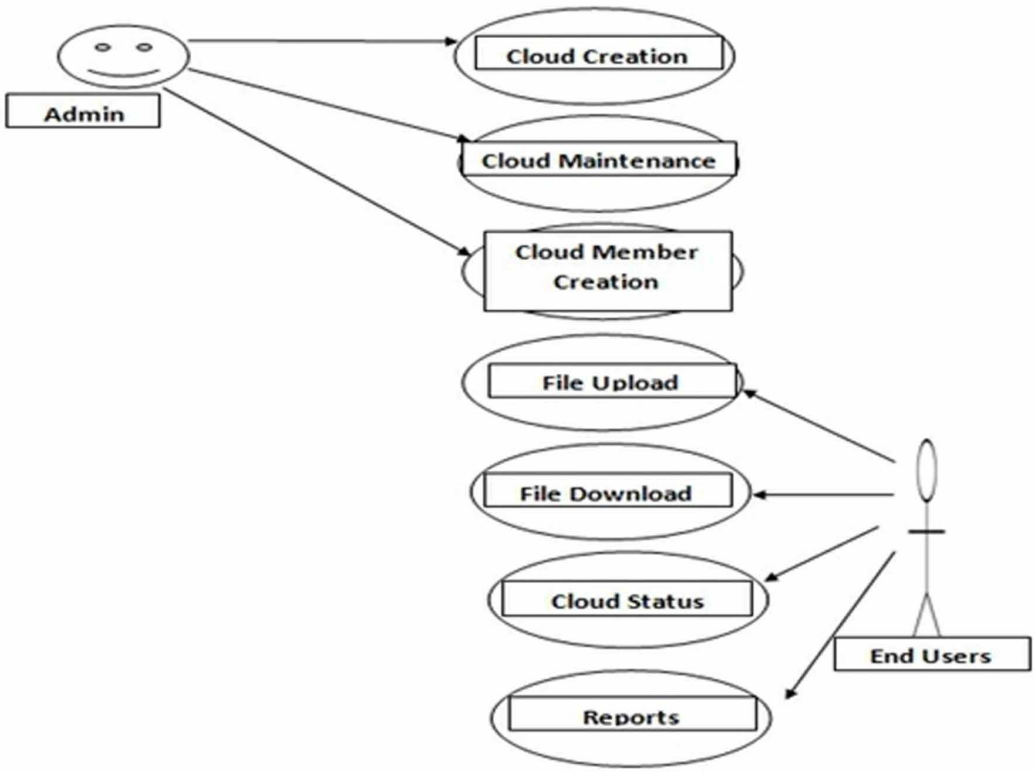
CLOUD SIMULATION AND RESULTS

The cloud algorithms are being simulated with different simulators. These simulators have the key features which are playing the vital role in designing the graphs and output. There are lots of simulators in cloud but different perspective are discussed by the Buyya et al. (2008, 2009, 2010) and Tiwari et al. (2013, 2015).

The key features are as follows:

1. Easy for the Programmers: The execution of the algorithms should be easy and quick to get the results. The output should be easy to understand each and every thing.
2. Flexibility: It's easy to modify anything of the algorithms and the output. The parameters should easy modify according to the simulation. However, being too flexible may not be good.

Figure 4. Use Case Diagram of Cloud Computing Process



3. Configuration: The tool should be easy to understand. In computers and computer networks, a configuration often refers to the specific hardware and software details in terms of devices attached, capacity or capability, and exactly what the system is made up of.
4. Graphical Output: It's a pictorial representation of the table and information. It's also designs various pie charts too.
5. Repeatability: It's very important perspective of the simulation so that he researches can get the output as much time as per the requirements. It is also helpful to be able to save an experiment as a file and also be able to save the results of an experiment as a file.

On the basis of the several parameters of cloud computing and the ontology parameters the researcher comes in conclusion to find some values. The values which are based on their services give the output and results. The results of the simulators are to be calculated which are being discussed in the algorithm parameters. The cloud simulations are done on different simulators such as: CloudSim: It's the framework made by the Melbourne University for modeling, experimenting, simulating, and designing the graphical results. The figure 6 describes the throughput performance of the system. The performance is increasing in compression to ROSP and MROSP algorithms. It has cloud computing platform where data centers, parameters, cloud service, cloud brokers, scheduling algorithms and agreements are already given (Buyya et al. (2008, 2009, 2010); Tiwari & Sharma (2016)).

The Sim Java is also the cloud simulator which deals with both the simulator CloudSim and GridSim (Buyya et al. (2008, 2009, 2010)). Ontology Simulators are also who deals with the Computer-Aided Software Engineering (CASE). The mission is to create a suite for the efficient and effective management of ontology's that provides an integral solution for the overall problem.), etc (Buyya et

Figure 5. OCC: Proposed Algorithm

Grab Computing System Methods for Cloud Parameters

Input: Set of Cloud Performance Parameters (CPP), Cloud Service Providers (SP), Cloud Broker (CBO), Set of Datacenters (DC), and User (US).
Output: Getting the Efficient Services on basis of Parameters.
Method:

```
While (CPP ? Ø)
{
        SP = select (DC)
        Provide the DC to CBO
        If DC is selected
        {
                SP= SP- 1
        }
}

Select (Rendered Output)
{
        Flag bit = Match (Best SP provided to DC)
        If (flag == True)
        {
                The Suitable service of Cloud is provided by SP to the DC.
                If (flag == True)
                {
                        The Suitable service of Cloud is provided by CBO to the US.
                }
        }

}
Efficient Service is provided by the CBO to Users US.
```

al. 2008, 2009, 2010; Tiwari & Sharma (2016)). This simulation dealing with cloud simulator used and the ontology tools used for the implementation of the algorithm. The efficient execution of the algorithm is shown in figure 7. This algorithm is processing better than the previous algorithms. The ontology defines the most important relationship with computing. The Sim Java is additionally the cloud machine that deals with each the machine CloudSim and GridSim. The results of the simulators are to be calculated in different forms.

CONCLUSION AND FUTURE SCOPE

The overall conclusion from the proposed research is that the researches have done in several parameters of ontology and cloud computing. The researcher also consider to calculate more results on the basis of other parameters which are being discussed in the work like computation cost, communication cost, Hardware cost, Virtualization, Security, etc. Many of the researchers are working in the field of cloud computing. Per day the new field of technology is coming in the market. Cloud computing is now connecting with the Internet of Things (IoTs). The technology of Tactical Internet or 5 G Technology is growing in a faster way. In this paper, the concept of ontology is being defined clearly. Since there are a lot of things which is dealing with the ontology and cloud computing. The ontology is forming with the lot of information with the computing. This is a direct result of the way that cloud computing is helping undertakings to spare cash while adding to the accommodation of the clients. Thinking about the present situation of an Indian IT industry, the openings for work are

Figure 6. Flow Chart of Proposed Algorithm

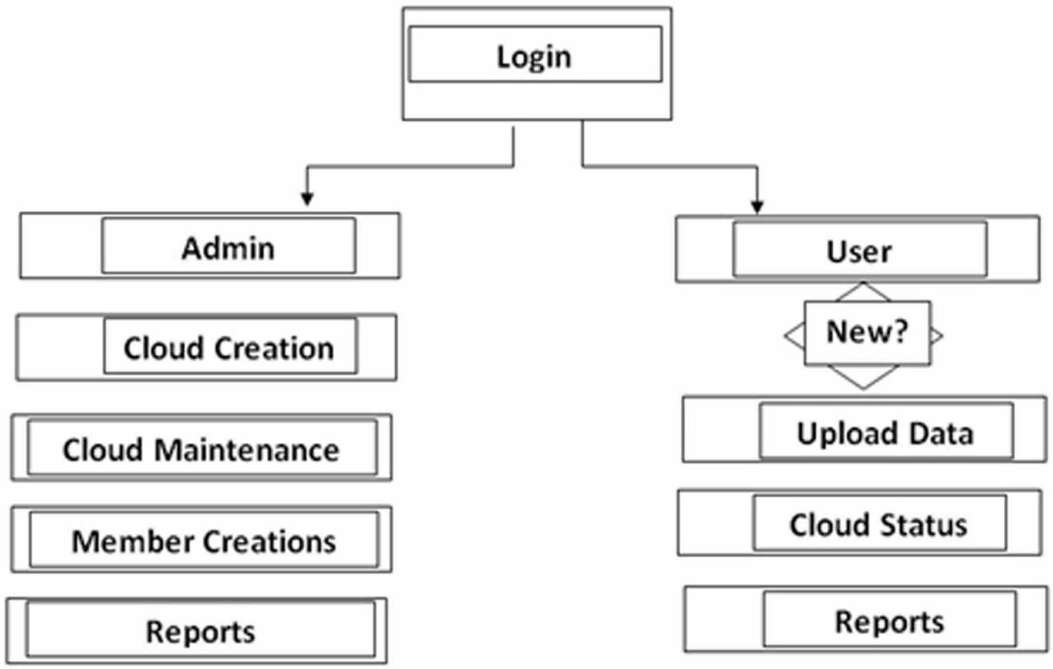


Figure 7. Throughput Performance

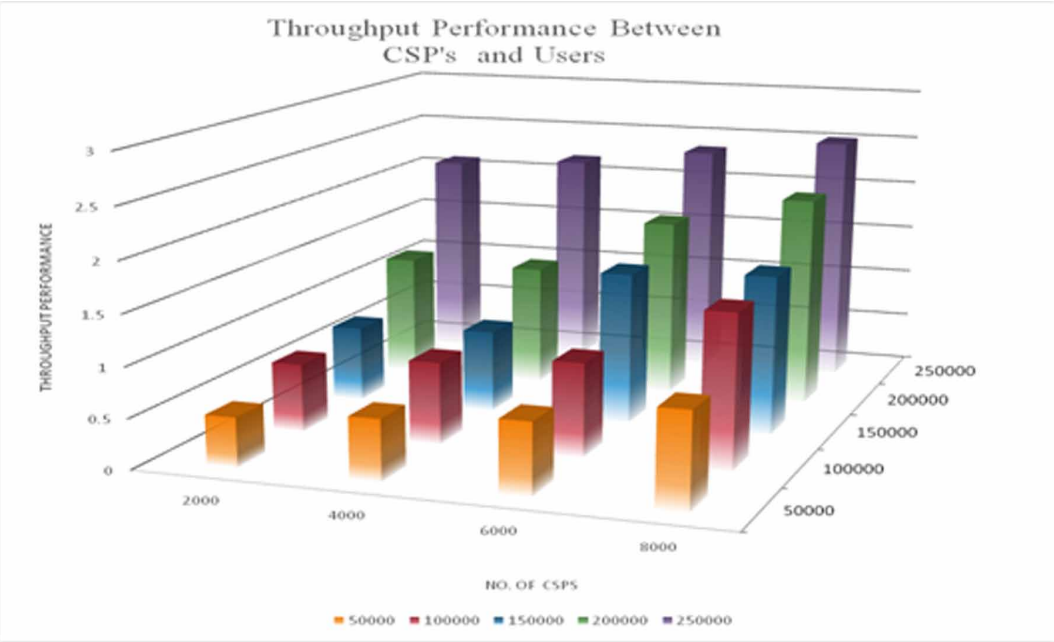


Figure 8. Efficient Execution Time

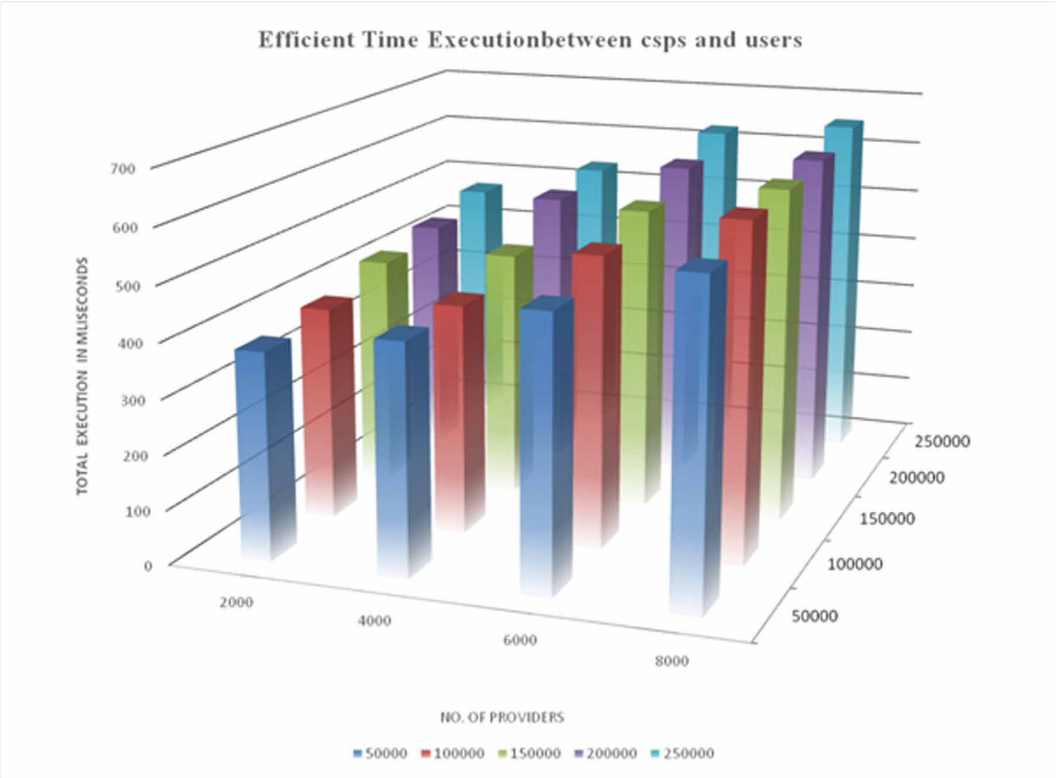


Table 5. Feature and pricing comparison of different Cloud Providers[Buyya, R et al. (2008)]

Feature / Provider	Nirvanix US/EU	Nirvanix SDN	Amazon S3 US	Amazon S3 EU	Mosso CloudFS
Incoming data ($/GB/month)	0.18	0.18	0.10	0.10	Unknown
Outgoing data ($/GB/month)	0.18	0.18	0.17	0.17	Unknown
Requests ($/1000 PUT)	0.00	0.00	0.01	0.012	Unknown
Requests ($/10,000 GET)	0.00	0.00	0.01	0.012	Unknown
Storage ($/GB/month)	0.18	0.25	0.15	0.18	0.15
Automatic replication	Yes	No	Yes	No	No

constrained, in light of the fact that the vast majority of the organizations in India still lean toward working in an old path, however there is a degree so. Throughout the study the research comes on the results that the marking of cloud computing is going to increase by $200 billion in 2020, and about 30 lakhs job vacancy are to be created in India. The evaluation of the selected research shows some

of demanding situations and topics for future studies for the researchers. The aim of the ontological is to improve the results on the basis of parameters.

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