Optimized queuing prediction staging sustained computational scheme

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ABSTRACT
　　　　Cloud computing is the practice of using the network of distant server on the internet for storage and managing the large amount of data. In existing system the client request is submitted in submission site and it will be queued up in the queuing system. The system does not focus on any process of job cancellation and job failure. Client pertain it to remain the job queue without the actual knowledge of work that has to be processed in our system an midway staging site is provided that will get the request from client and accessibility manager which will identify the feasible data access on site staging server that retrieve the data from high performance computing system for short-term the data processing with parallel computing nature. Accessibility nature in system and job failure modernize to client in starting stage major improvement from the previous system and timely prediction and remote achieving is the serious is the features which are included in our system. Data from client system is the processed in four ways that is, sequential Data processing, cumulative, parallel, concurrency and while processing of data, possible information such as hard disk specification processor specification and then the security specifications are analyzed.

KEY WORDS: Cloud computing, data security, queuing system.

1. INTRODUCTION

　　　　Cloud computing is the growing technology. It provides on demand service to also provide access to shared resources. Cloud computing is the practice of using a network of distant servers on internet for storage and managing large amount of data. Cloud computing is a model for enabling convenient on-demand network access to shared system of configurable computing resources. In Cloud computing is mainly categorized based on the access it provides to the user like public cloud, public cloud, and community and hybrid cloud. In Cloud computing also provides the user based on the services IaaS, SaaS, PaaS. Public cloud is accessible by everyone. In Private cloud is accessible only by specific organization that is owning the cloud. In Hybrid cloud is the combination of both private and public cloud. Big data are large amount of data which are analyzed computationally by using the internet and the storage processing in the cloud.

Earlier Methodologies: In the existing system the client request are   submitted in the submission site and their requests are queued up in the queuing system. Resources space and number of work will decide the exact execution time of the current process. The disadvantages of this system are that system does not focus on the job failure and job cancellation. The client used to wait in the work queue without the knowledge of the job that has to be completed. In the system no specification about the runtime condition of the system and no exact information about the accessibility of information. In the current system if large amount of data comes at a time it requires to make decision of what data has to be kept and what has to be discarded and how to store the data in an efficient way is a big issue in the previous system. Client is not provided with a suggestion of choice in his request.

Proposed system: In our proposed system a midway staging site is provided for the user which will be cautious of getting request from the client. An accessibility manager is also provided in our system which will identify the possible data that can   be accessed by the client on his request. In the proposed system staging server are used which temporarily fetch data from the high performance computing system. In Data staging manager will monitor the process in high   performance computing system and report that status to the client about this job process. Time prediction and job status at the initial stage are major improvement in our system. In this system the huge amount of data are processed in four ways; Sequential data processing, cumulative data processing, parallel data processing, concurrency data processing.

　　　　The status about the capabilities of the system and also be specified like hard disk data specification, processor access specification, service level specification, security level specification.

Client application request module: In client application request module application is developed to grab the client request for the information to the server. The client like to access the service as they want to give the request to server. Then the server will not collect all the data so they introduced the concept of queuing is used efficiently in this system.
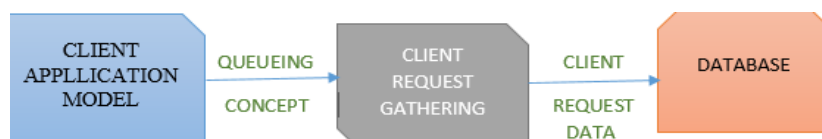

Fig.1. Client application request module

Job queue viewing module: In this job queue viewing module the clients job is waited in a waiting pane in which the request the server are lined in a processing stage. The batch queued in order of their time of arrival. It is not only based on storing of data in time but also for its completion.
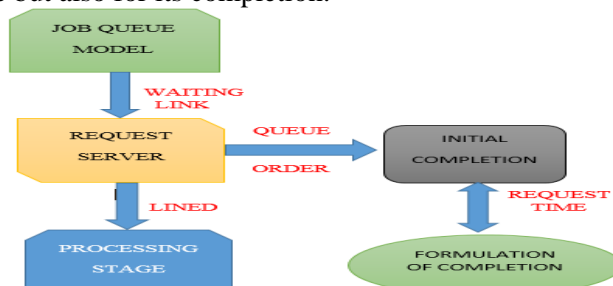

Fig.2. Job queue viewing module

High performance computing module: In this high performance computing is a strategy that separates the work to be completed in to small works and to complete each work is given in separate processor. The task requested by the client to the server are separated as how to respond for many users at a point this in will produce the performance effectively from this client can get the response quickly without any leakage of data.
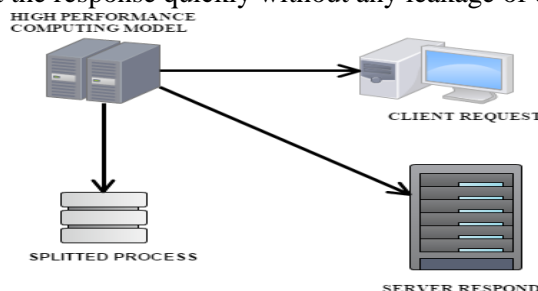

Fig.3. High performance computing module

Staging splitting module: In this staging server is used as a temporary stage for testing new or revised pages before actually they are made live. It acts as a midway processing stage to service the request and response for the user and server. It also keeps often accessed data a copy of it to response it quickly.
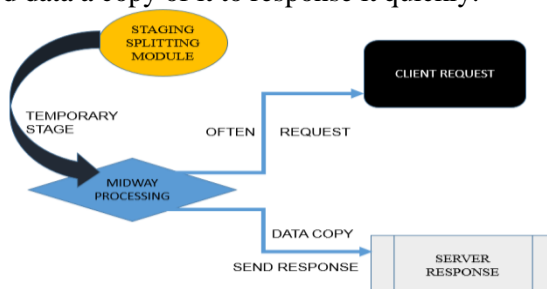

Fig.4. Staging splitting module

Data archive module: Data archive is the area where the collected data will be accessed by the server to respond for the client request. This data archive the client can avail the information that needed from the server and the request are transmitted from the server to the client will be perfect and it will be deployed in time for the client.
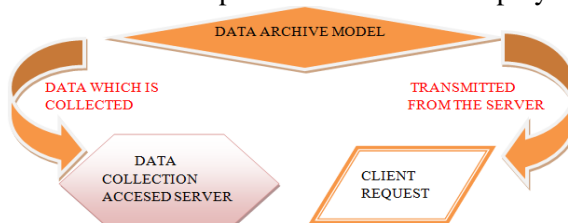

Fig.5. Data archive module

Prediction module: In this module, the jobs in the queue are predicted for its feasibility to complete once after receiving the request of the task from the user. In this module, the time taken to complete the requested jobs is processed so as to response the user in the queuing time itself.
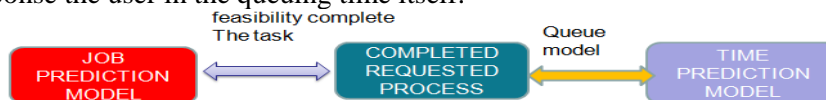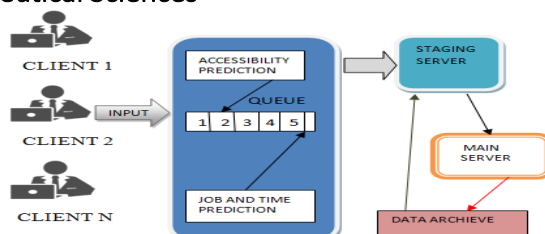

Fig.6. Prediction module

Fig.7. Architecture diagram

2. MATERIALS AND METHODS

Algorithm:

Adaptive PCP Algorithm: This arranges the data sets based on the size and divides in to two sets. First set which has files greater than BDP and second set which has files less than BDP. It is classified in to two algorithm, Recursive-chunk- division (RCD) and optimal parallelism-concurrency-pipelining (PCP).

Recursive-chunk-division (RCD):

List-of-datasets V start-index V end-index V total-no-of-datasets V m-chunk-size V par-pp V M-pp

      Par-pp V M-pp

      Cal curr-opt-pp

      Cal m-file-size

      Cal m-file-size-i

If curr-opt-pp! = 1 and

St- i< end-i and

M-file-size-i>st-I and

M-file-size-i< end-i and

Curr-c-size--> 2 * m-chunk size then

Call RCD-dividing-the chunk-by-m-i

(St-i –> m-i)

Call RCD-dividing-the chunk-by-mean-index

(M i+1 –>st-i)

Else

Opt-pp = par-pp

End.

Optimal parallelism-concurrency-pipelining algorithm (PCP):

Algorithm for set 1:

Create chunk by RCD algorithm

While no of chunks is less than m-chunk-no do

Divided largest chunk

While

Curr-cc <–1

Prev-thr<–0

While

Opt cc = prev cc

Algorithm for set 2:

Set optimal pp as 2

Curr-p <-1

Prev-thr<-0

Create chunk with m chunk size

while

Opt p =prev p

Universal prediction algorithm: Universal prediction algorithm forecasting which will get together on the best possible forecast as the sequence becomes larger

Consider a stochastic sequence:

$X_m = X_5, X6, X7 \ldots \ldots \ldots X$

At time S, the predictor has to predict the future sequence based on observed history.

$X_1^{s-1} = X_6, X7, X8 \ldots \ldots \ldots X^{s-1}$

Optimal solution should be a set of all possible finite state machines.

3. RESULTS AND DISCUSSION

Sequential data processing is One by one data is sent to the processing engine, cumulative data processing is a whole the data will be sent, parallel data processing is at a same shot data will be sent, concurrency data processing is portion of data sent in the format of chunks for processing.
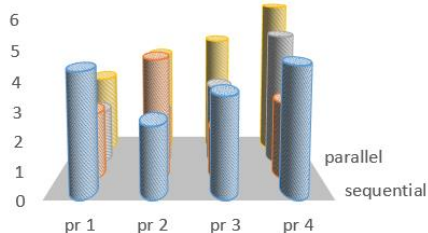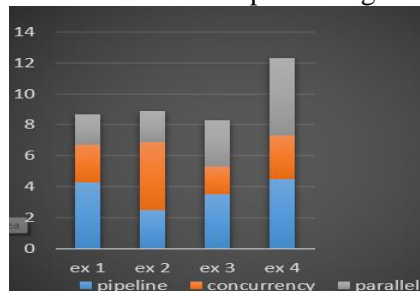
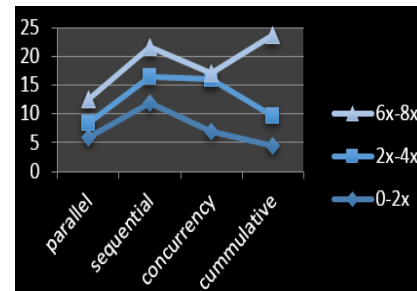**Fig.8. Sequential graph**   **Fig.9. PCP graph**   **Fig.10. CCSP graph**

4. CONCLUSION

Optimized queued prediction staging sustained computational scheme which optimize the queuing technique by using universal algorithm and staging server which extracts the information from the computing server and archives the data for the temporary storage. The user will be provided with the accessibility prediction and time prediction which ensures the data what we can access an the amount of time it requires to get the data what the user requested for and the data processing is done by four ways sequential ,parallel ,concurrency and cumulative. From response time and security level data processing. In the future instead of staging server, different server can be used and algorithm instead of prediction performance improvement can be used to increase the performance of the system.

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