



# Cloud Cluster Nexus

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**ABSTRACT:** Cloud Cluster Nexus (CCN) is business software based on cloud computing. It is a technology which synchronizes data structures and cloud computing technologies leading to innovative solutions for business applications like document processing, data warehousing and collaboration. This software has the capability of handling user documents efficiently with automated document processor. Data warehousing has unique functionalities by which the files are stored dynamically. Collaboration accredits the user with to communicate with other user while processing is going on. Our study will be great help for organizations which need to handle their documents and need storage solutions. Our research will help to reduce cost of document processing as cloud computing is involved. The deployment of CCN into cloud will enable authenticated users to access the resources and services through remote machines.

**Keywords:** Cloud computing, Document processing, Collaboration, Data warehousing.

## I. INTRODUCTION

CCN is cloud based business software which is non-redundant, flexible and portable. It is an amalgam of various network, business software, and cloud technologies. We researched that in today's competitive market scenario, it is a difficult task for businesses to sustain and grow. Cloud enabled services radically reduces costs of businesses as well as improves service standards. These services drastically help businesses do document processing, data entry processing.

These are mainly cloud based services which drastically reduces the cost, handling of the software required. The concept of Cloud is brought out when the services need to be accessed from any remote machine. This network handles all the data and processes generated by all the clients. The advantage of cloud is that it reduces cost, it is easy to setup, it reduces the hardware requirements, data security is increased, thus giving a boost to the output, without much investment.

The services can be accessed by a web browser. The unique way of processing document is done using PHP document processor which reduces redundancy of files. The data warehousing is done in such a way that the documents are stored dynamically.

This project can be used for any type of enterprise which has to be enabled by these services. CCN is being built in such a way that it can be modified according to client needs as templates for document processing are involved in it.

### A. Idea, observations and survey

We had visited several organizations to see what type of softwares they were using, we observed that they were using redundant softwares which were hard to operate on, costly, inefficient. Handling of the business applications on client side made the software redundant, but in case of CCN, it processes 90% of the data on the server end.

The idea of processing business applications over cloud makes CCN innovative compared to existing systems. The whole software development process is fast and the maintenance is quick. The server side processing reduces the cost drastically and the remotely available services give it a great advantage.

### B. Document Processing

Document Processing is an important business application, it is used to handle various types of documents and generate them. In the document processing part of CCN, the .DOCX files are processed. For using this, client needs to submit a template of the document to the support, the support will automate the important files like .XML and .XSLT to enable the document processing for the following template.

#### 1) Document Processing Procedure

The document processing to generate .docx files involves several files and middlewares. The document processing is procedure is given in the diagram

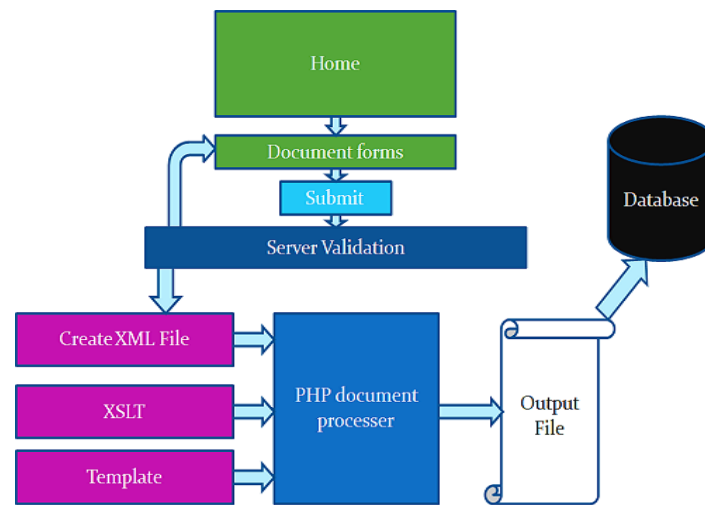


Fig. 1 Working of document processing

1. Create .DOCX template that needs to be automatically generated and submit to support, this is required as the software will know the user fields which are necessary in the document processing and the PHP document processor will take reference from this template while document generation.
2. Create XSLT file using the template and give its link to the PHP document processor. This is done by extracting the document.xml file from the .DOCX template. Then convert the XML file into XSLT, this is done by adding “<xsl:stylesheet version="1.0" xmlns:xsl="http://www.w3.org/1999/XSL/Transform"><xsl:template match="/">” at the top of the XML file and “</xsl:template></xsl:stylesheet>” at the bottom and saving it with .XSLT extension, each XSLT file needs to be unique for each template.
3. Replace the user fields in this file by XML transformations. This is done by replacing Name field (example) by “<xsl:value-of select="pt/nam"/>”, where “pt/nam” is reference from the XML file.
4. The software identifies important fields of input from the user in the forms and stores it into the database, takes the input and sends them for server validation, the fields are validated and stored in a SESSION for common uses.
5. If validation is true then the software writes the XML file with the user inputs.
6. The XML, XSLT files are loaded files using DOMDocument and “load” function, the style sheet from the XSLT document are loaded to the XSLT processor using “importStylesheet” function, the XML document has to transform using “transformtoXML” function, using “ZipArchive” the document.xml is given to the generated document.

### C. Data Warehousing

CCN generally handles data in cloud which are mainly .DOCX files, data warehousing is very important in CCN as there will be millions of files that the cloud will need to handle. This is a research in Dynamic Data Warehousing where documents are not stored in their real file format, they are processed every time the user requests them.

1) 4.1 Data Warehousing Procedure

The data warehousing procedure is given in the diagram in

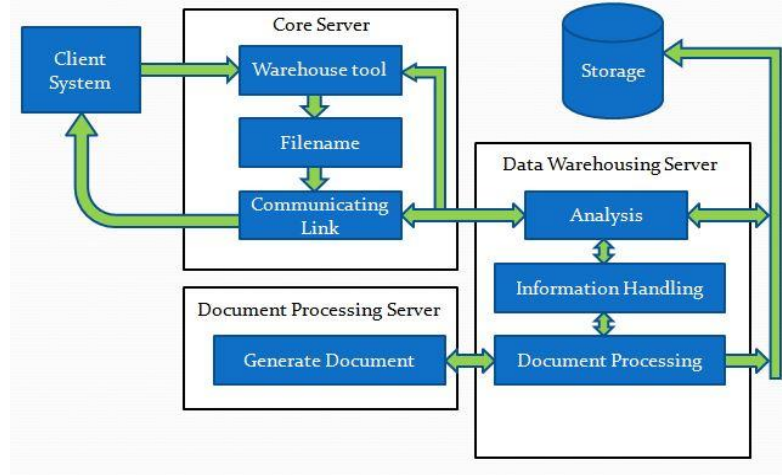


Fig. 2 Working of data warehousing

1. The client requests the server for a document, the Warehouse tool allows the user to search the documents through its name, date, type. It is essential part of data warehousing as it sorts out the documents through PHP scripting. Various documents are retrieved from the database and given to the Warehouse tool, the user at most time will search file by its name so the filename is taken and sent to the Data Warehousing server via the communication link.
2. The communication link is an important link between the servers to transport data, queries efficiently and securely, the data warehousing receives the filename and is sent for analysis, the analysis checks the file history from the storage, it analysis the information and sends it to the information handling section.
3. The information handling checks and creates the files needed for document processing, generates them and sends them to Document Processing section, this is an important section, as files are not just retrieved and stored, and they are dynamically produced in warehousing.
4. The data is sent to the document processing server and it generates the documents and sends it to back to data warehousing server, this document is temporarily stored in the server, it is deleted as soon the client gets the file, the database holds the user inputs that were needed for the file, therefore it can be retrieved anytime when needed.
5. Therefore, the actual file is never stored on the server.

D. Collaboration

In collaboration the various users accessing the services can collaborate by sharing files with each others, collaboration also keeps track of the user updating and allows the administrators to moderate the fields, the implementation on it is simple like chat application which allows file sharing techniques. The importance of collaboration is that it allows information to be governed.

1) Collaboration Procedure

The working is given in

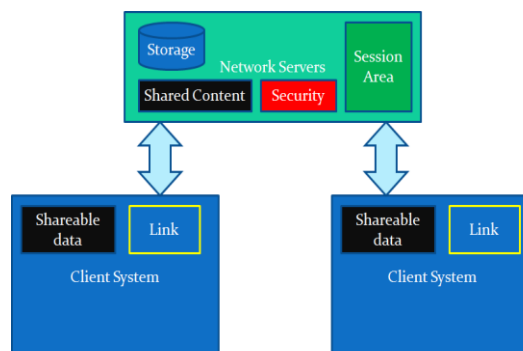


Fig. 3 Working of Collaboration  
[www.ijirccce.com](http://www.ijirccce.com)

1. Each client accessing the services will have a unique id which will be stored in the online users table, the users will be divided in administrators, users and various fields.
2. The shareable data will also be dynamic like data warehousing, the names of the shareable documents will be showed to the users, when the document needs to be accessed the document processing activates and generates the documents. Each shareable data is stored in a master table which is normalized for each user reference.
3. Whenever data sharing or communication is activated the content goes through the network servers and security layers. They check the information and then send it to the client systems.

**E. CCN ARCHITECTURE**

CCN is cloud based software, having to be deployed across public cloud servers. The client system needs to have a web browser by using which it will access the services through a URL, the document processing, data warehousing and collaboration are divided across modules, each module have their own security layer though which data is passed. The collaboration is present in the core server only as it does not need heavy processing or a separate file system.

The data warehousing and document processing are installed in their own servers. The cloud storage is accessed only the core server as a security measure, it is also useful for the mail query processing request. The core server is the main server in the architecture as it handles all the control flow and thus giving the services to the client

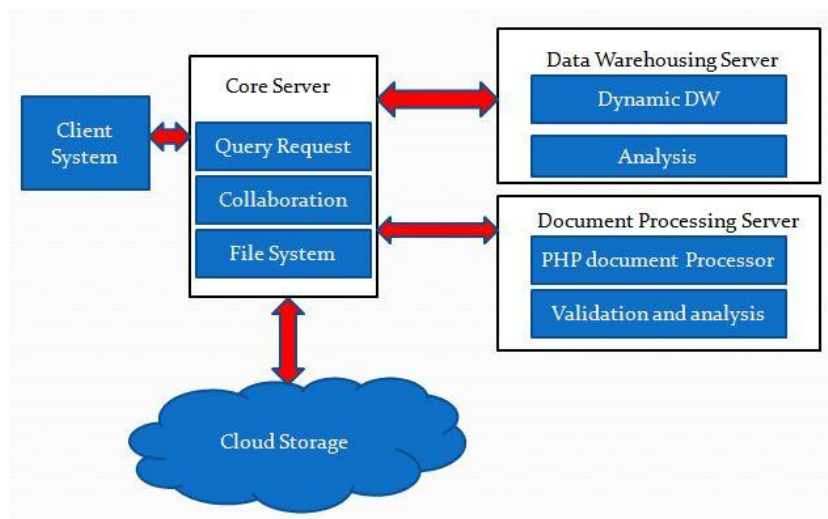


Fig. 4 CCN Architecture

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Fig. 2	Working of data warehousing
Fig. 3	Working of collaboration
Fig. 4	CCN Architecture



## II. CONCLUSION

CCN is platform that combines Business applications and cloud computing technology. It allows services to be available from remote locations. Even if the client system is a mobile device, it can still use this service as the heavy processing is carried out by the servers. One time deployment reduces the cost drastically which will give it an advantage.

It has a new concept of dynamic data warehousing where documents are not stored in their natural form but using templates they are regenerated every time they are needed. CCN has one limitation that if the client needs their documents to be private then they will need a private cloud. In future more business applications can be installed in CCN also which can included applications like Enterprise Resource planning.

## REFERENCES

1. Computing for Dummies by Judith Hurwitz, R.Bloor, M.Kanfman, F.Halper (Wiley India Edition).
2. Cloud Security by Ronald Krutz and Russell Dean Vines, Wiley-India.
3. The IEEE website. [Online]. Available: <http://cloudcomputing.ieee.org/>
4. Enterprise Cloud Computing by Gautam Shroff, Cambridge
5. Google Apps by Scott Granneman, Pearson
6. Cloud Security & Privacy by Tim Malhar, S.Latif (SPD, O'REILLY)
7. Cloud Computing :A Practical Approach, Anthony T Velte, McGraw Hill,
8. Cloud Computing Bible by Barrie Sosinsky, Wiley India
9. Stefano Ferretti et.al.,QoS.aware Clouds, 2010 IEEE 3rd International Conference on Cloud Computing