

# Mobile Cloud Based Compiler with Security Approach

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## Abstract

Now days, Mobile is for allowing convenient as well as on-demand network access to a shared pool of configurable computing capitals are rapidly provisioned and released with minimum management efforts. In two days world extensively use of internet. In the internet world all the things are online. So create software online compiler. This project main aim can be certainly write program and compile and debug it in online. The system compare three online compilers, namely, Online C, C++ compiler using Android application which decreases the problem of portability and storage space by making the use of Android application, centralized c# compiler using Android application which support to diminish problems of time, cost, storage space by using mobile application concept, online C, C++ compiler using mobile application [Android], which provides most expedient tool to compile code and remove the errors. These two compilers provide online compiler services, so there is no need to install distinct compiler on each pc. By using all these application users can conduct online practical examination.

**Keywords: Mobile Service Execution, Program Compilation, Multi-Tenant Cloud Application**

## I. INTRODUCTION

An online compiling plug-in for the Mobile based cloud environment. The system allows students to compile and execute programs right through the Mobile so that they can deliberate on the programming concepts rather than learning to operate new technologies. This feature allows students to do programming everywhere, anytime using just Mobile interface.

The system also provides error diagnostics on to the compilation and execution errors. System also provides log details for better understanding of errors. Each attempts of compiling Java program produces time statistics and gets stored in database. Teachers can view statistics produced by system and examine students programming behavior. The technologies and Java APIs related to online compilation processes are discussed in detail. The document also highpoints security problems related to servers and their resolutions. Development outcomes are presented and opportunities for future work are discussed. System have introduces secured mobile based multi-tenant cloud surroundings and for security purpose. Systems have used Captcha as a graphical password. Now a days with the arrival of subcontracting and growing wish to reduce operational costs, Cloud has been recognized as prime in the middle of the green ingenuities crossways all IT organizations. However, Cloud's computing creativities alone are often confirmed to act as a most important cost saving factor. Over the time systems have seen some strong changes in software distribution model: from solid client applications to web based applications and from spread to service tilting architecture.

All these changes made business processes execution simple and good at your job. Old software delivery model are replaced outstanding to the fact that also the earlier delivery model were old-fashioned with business needs or with new technologies. Cloud computing is a modern computing model. The different type of services vacant as parts of cloud are SaaS (Software as a Service), Platform as a Service.

## II. RELATED WORK

Sivakumar Kuppasamya [6], A Framework for Native Multi-Tenancy Application Development and Management Multi-tenure innovation is one of key abilities for system conveyance administrations to accomplish higher net revenue by utilizing the financial of scale. This paper investigates the necessities and difficulties of the local multi-tenure example which have the capability of serving an expansive volume of customers all the while.

R. Biddle, S. Chiasson et al [2], in ordinary content based secret word plans, clients commonly pick passwords that are anything but difficult to review, display designs, and are along these lines defenseless against beast power lexicon assaults. This leads us to solicit whether different sorts from passwords (e.g., graphical) are likewise defenseless against lexicon assault because of clients tending to pick critical passwords.

Arjun Dattal [5], the cloud model could be implemented in scenario where a large number of users will need to compile their programs and outlook the output in minimal time. An example of such a scenario is online coding contest where the contestants need to submit their programs to a central server for estimate. The number of backend compiler servers could be adjusted according to the expected number of users of the system.

### A. Cloud Computing

Cloud is an idea of on condition that a computing service to the user as an alternative of providing a product to use. The (NIST) National Institute of Standards and Technology definition of Cloud Computing states that “Cloud computing is a structure for sanctioning proper, on demand network access to a shared pool of configurable computing resources that can be provisioned straight away as required and released with minimal management effort”. Explanation cloud can vary from different point of view because it can be used for various purposes. In short, cloud computing way accessing and storing the data and programs over the Internet as an alternative of using your own computer's hard drive. Thus, using cloud computing would offer access to files anywhere provide network connectivity.

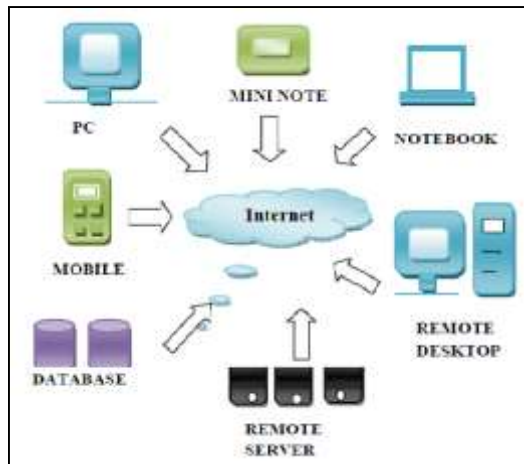


Fig. 1: Cloud Computing

## III. PROPOSED IMPROVEMENT

### A. System Architecture

In system architecture there are three modules:

- Admin module
- Cloud server.
- User module.

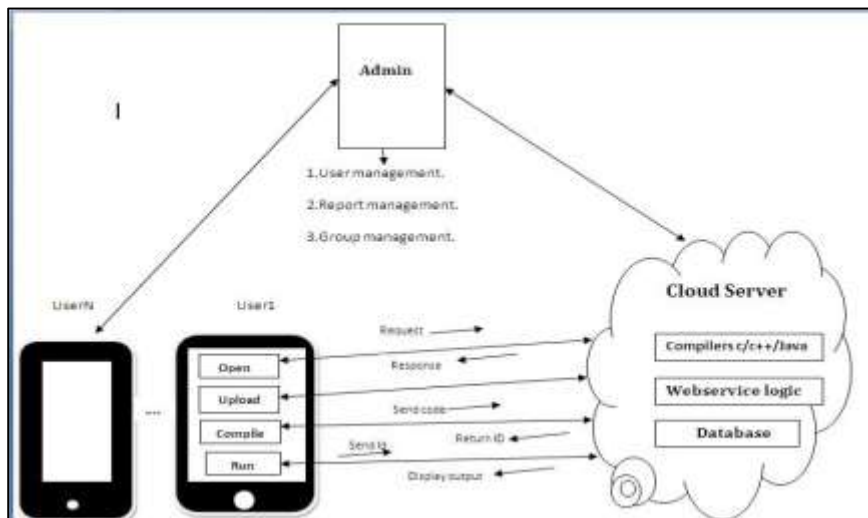


Fig. 2: System Architecture

### 1) Admin

- a) User management: Manages user related data.
  - Username and password.
  - How many users uses which type of compiler
  - From(C/C++/JAVA).
  - Validate users.
- b) Report Management: Manages different types of reports.
  - Audit reports.
  - Tracking reports.
  - Maintains records of which compiler is most uses by user.
- c) Group Management: Manages group related information.
  - Maintains size of the group
  - Keeps track of which user exists in which group.

### 2) Cloud server

Compilers are hosted on to the cloud like C/C++/JAVA. Web services are also hosted on to the cloud. Which are used for interacting the mobile device with the cloud server on which compilers are installed? Database is for maintaining record of user, code, compilation and execution.

### 3) User

Users are android mobile users. Users are responsible for typing their program and upload that program on the server then server executes the program and displays the result on user's screen.

## B. Working of System

The user will first select the language of the program that is C/C++/JAVA and then writes their program on editor or download the program which is available. Then upload the program on server by clicking on upload button. When user click on upload button an android java activity will be executed and the program file will get wrapped into JSON object. After that the program is send in JSON string format to the server program request the device .Then program is save on the cloud server and returns the program ID on user mobile.

After clicking on compile button the program is sent for compilation. A java application is stored onto the server which will recognize the program file data which is in JSON string layout. Then it will retrieve the required data and make two files one for program code and other for its particular input file. Then the program file will its respective input file is compile on minGW compiler and the outcome is store in a file. If program contain errors then errors of the compile program file is wrap in JSON layout and conveyed back to android device in JSON string format. And if program does not contain any errors then message "Compiled successfully" is demonstrated on the user's screen. Then user will click on execute button the respective program is executed on server and result is again wrapped into the JSON string format and received result is display on the device. Systems are used REST web service over SOAP.

## IV. CONCLUSION

In this, systems have introduced three online mobile cloud based compilers C, C++ and JAVA. Because now a days to run and execute need of computer to execute any simple program and different compilers a must be installed on it. It is time consuming process and also number of resources is required. Therefore to avoid the dependency on computer and reduce installation time we are established an "online mobile cloud based compilers with security approach" using which anytime anywhere users can run and execute their programs using their android smart phones and can store the codes at the centralized This application is helpful for students, teachers, programmers as well as developers .The ability to use compiler application on mobile devices is that a programmer can easily access the code and provides most provide tool to compile the code and remove the errors.

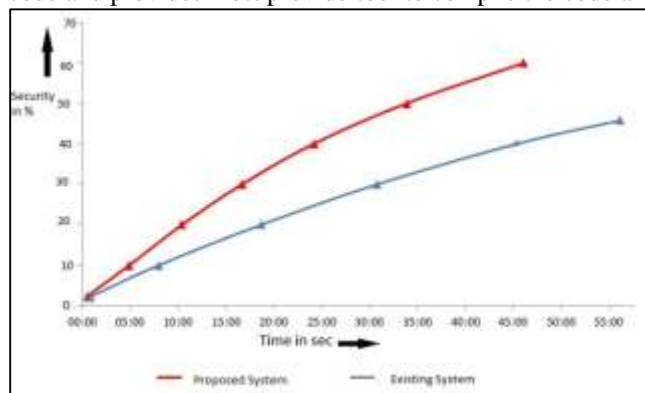


Fig. 3: Compilers comparison graph

Bellow Table and Graph shows the overall result status-

Table – 1  
Comparison of existing system with proposed system.

Existing System	Proposed System
Handle only one compiler.	Handle combo compiler.
Does not provide facility to upload program & save a program on server side.	Provide facility to upload program & save a program on server side.
They doesn't provide grouping of client program.	They doesn't provide grouping of client program.
Doesn't give security to user.	As a security purpose use captcha password.

### ACKNOWLEDGEMENT

Our Software, which we are going to develop, is the result of many peoples dedication. It is the cumulative efforts of many minds working together day and night that gave us the contentment of designing the software. Special thanks to, the Project-coordinator Prof. Vikas Mapari of computer Department, for his great support. We express our gratitude to our project guide Prof. Santosh Biradar and H.O.D of computer department Prof. Sandeep Kadam for guidance and who kept the things on track and also to all other faculty members who helped us directly or indirectly. Our acknowledgement goes to all the well-wishers of our project and to all our class mates for their excellent support in all aspects.

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