

# Intelligent Push Notification for Mobile Intranetwork in college environment using web server.

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## ABSTRACT

*Push notification is an important approach to provide required information to users from time to time. In recent years, there is an increase in development of mobile devices and mobile applications; push notification is getting efficient for the ordinary users. System also has shared connection scheme to reduce the resource cost. Push notifications allows users to get the context of whole message or information within. System has ability to target segment of users. It also targets single user. System also provides the status of seen or unseen user count. This system uses server ip address for securing the network and avoid the intrusion of third party.*

**Keyword:** *Push Notification, Load balancing, messaging service, Content match, Mobile handsets, Mobile communication.*

## 1. INTRODUCTION

A push-notification system delivers useful and well-timed information to users through mobile devices. Various types of information can be delivered to users by connecting devices to single or different information sources. Commonly push notification is provided as a cloud-based service, and a set of interfaces, including web interfaces and interfaces in other protocols, are defined for information sources and receivers as service API. With the fast development of smart devices, communication technologies and mobile applications, push notification is getting more and more popular. There are many legacy push systems for servers to communicate with their clients randomly. Some of these are proprietary while others are dependent on the carrier. This makes it difficult to get an open standard for push without any carrier or vendor interference. Most of the existing push systems do not allow flexibility for application developers. The convergence of mobile bring new challenges on how the system can handle the mixed push channels designed for M2M (Machine to Machine) communication and human interaction, and enable the effective interaction with both human and mobile devices involved.

To enable push notifications for both of mobile devices, there are some functional and non-functional requirements for push notification systems. It also has QoS (Quality of Service) requirements. In some cases, the notification should be delivered to the receiver by at least once. However, in some other cases, it is acceptable that some of the receivers missed the notification.

System has an efficient algorithm to make the message matching fast. The context management module enables pushing notifications to receivers with special contexts, which makes the push notification more efficient.

A load balancer also known as the “traffic cop” sits in front of our servers and routing client requests across all servers capable of completing those requests in a manner that maximizes speed and capacity utilization. It makes sure that no single server is overworked, which could degrade performance. If a single server goes down, the load balancer redirects traffic to the remaining online servers. If a new server is added to the server group, then the load balancer automatically starts to send requests to it.

## 2. LITERATURE SURVEY

There are also some industry works on mobile push notification services. Currently the push notification service providers can be divided into two categories. Some of the services/products provide basic push notification service, and the other services/products provide enhanced push notification services. They can support multiple platforms, pushing rich media messages, scheduling time to push notification, and pushing notification to receivers at a special location. However, the functionalities and performance of such services highly dependent on the basic services.

A form of basic push notification service plus enhancement service cannot jointly optimize the performance and resource cost. It may result in a waste of computing/storage resources and decrease the performance. In addition, as the user's context information may be stored by many enhanced push notification services, it increases the risk of privacy issues.

Push notification system has large number of subscription and this method is not very efficient. M. Aguilera et al. proposed a tree-based content-matching method. However, it suffers from the large amount of content comparing.

In 2015, Zhaotai Pan, Xiaoxing Liang, Yu Chen Zhou, Yi Ge, and Guo Tao Zhao. Suggests the intelligent push notifications in network of IoT devices. [1]

In 2015, Dominik Weber , Alireza Sahami Shirazi , Niels Henze these authors aims to create an understanding of when and how notifications on smart TVs should be used in order to create a meaningful experience for the users. [2]

In 2015, Alireza Sahami Shirazi, Niels Henze their results showed that users prefer to have more control over whether and how notifications are displayed. [3]

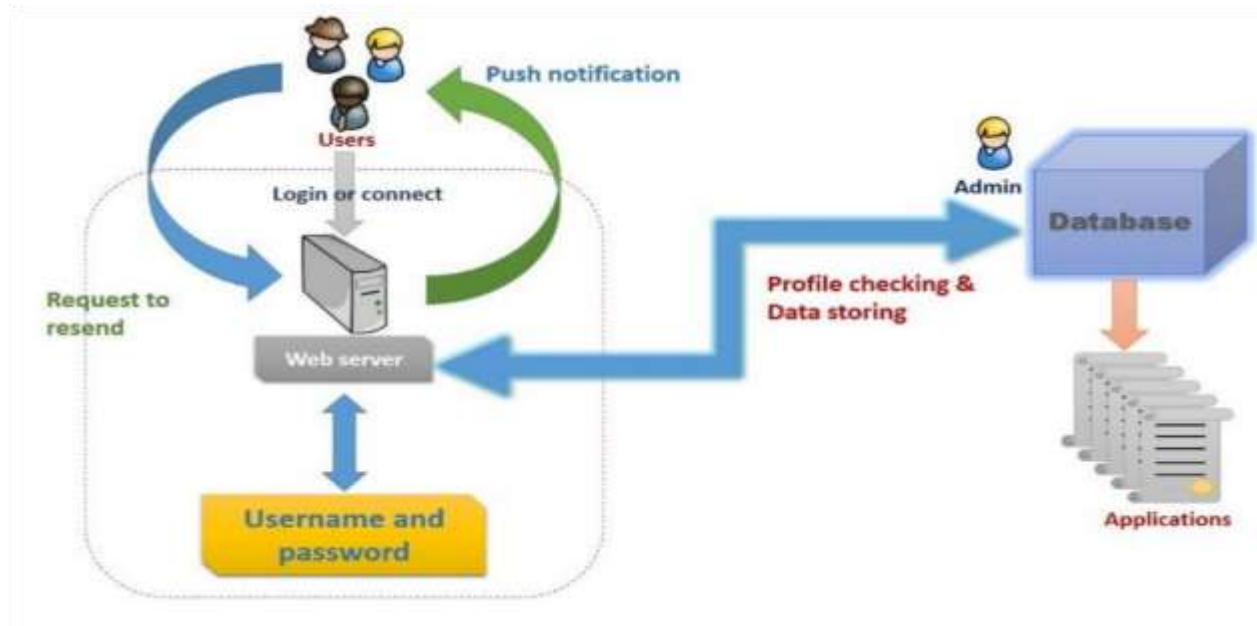
In 2014, A.Push Wizard. They aims at building of robust notification. This increases robustness of the system. [4]

## 2. PROPOSED SYSTEM

Notification is the main part of any smartphone. Here these notifications can be personalized. Notifications can be managed for periodic or regular timing. Major institutes like colleges or shopping centers can use this notification system to promote special notifications to a segment of users. In this system user can create localized versions of the same message within a single campaign to target specific language groups. Moreover, send push notifications to a single user via a web server call from a third-party system, using the push API.

In this system architecture, multiple users are connected to web server using Wi-Fi. Then they login in server. For each user have own user name and their password. If user enter wrong user name or password then re-login is also allowed. After entering the correct username and password then at server, the administrator checks username and password in database. When they found the any users information in database, they send push notification to specific users. These push notifications can be sent in format of collection of users or any particular type of users for example, students, staff, males, females, etc. Database contains different user related application and that provided to

users as per their request. In this system, single administrator has responsibility to handle web server and database. Administrator can also set permission, manage user profiles, and can edit applications related to notifications.



**Fig -1:** System Architecture of Push Notifications using web server.

Also at web server load balancing is important. Load balancing refers to efficiently distributing incoming network traffic across a group of backend servers, also known as a *server pool*. Modern high-traffic websites must serve hundreds, if not thousands, of concurrent requests from users or clients and return the correct notifications or application data, all in a fast and reliable manner.

## 2. RESULT AND PERFORMANCE ANALYSIS

Results based on this following hardware:

Hardware description: Intel quad core, 4GB RAM, Windows Operating System.

Editor: Notepad++.

Programming language: PHP, HTML

Database: MySQL server.

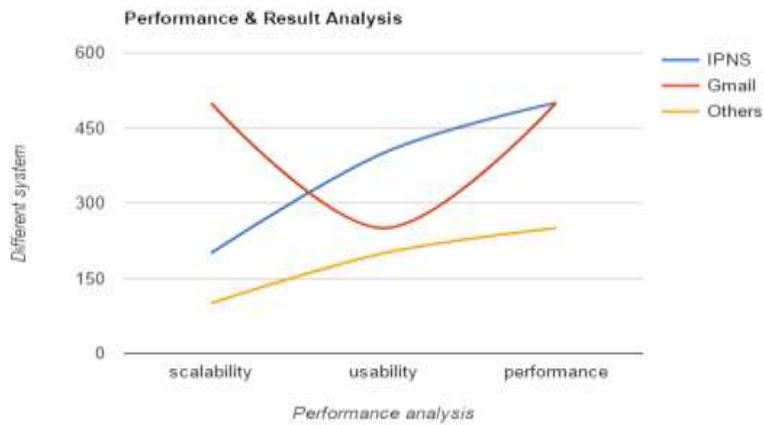


Chart -1:

### 3. EXECUTION



Fig -2: Home Page



Fig -3: SignUp Page



Fig -4: Login Page

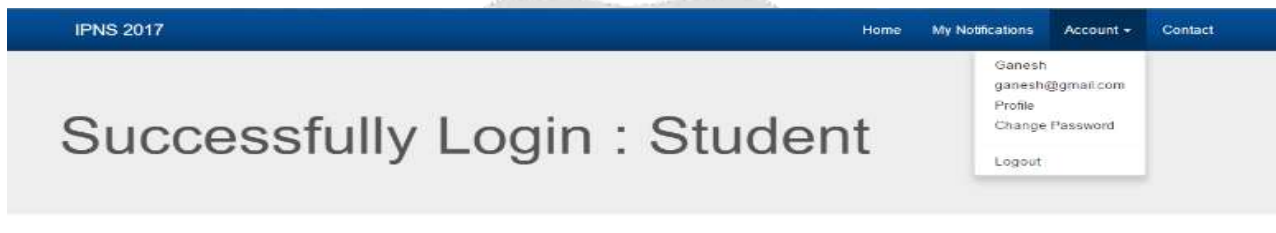


Fig -5: Successful logged in

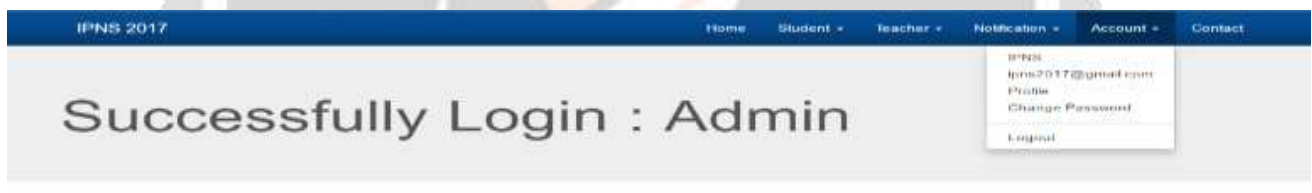


Fig -6: Admin Account



Fig -7: Activating User Status

Student ID	Name	Email	Mobile	User Ip	Server Ip	Status	Update
25	shivanjall	shivanjall@gmail.com	9788631535	::1	::1	Active	<a href="#">Update</a>
26	anita	anita@gmail.com	837654528	::1	::1	Active	<a href="#">Update</a>
27	Ganesh	ganesh@gmail.com	9887634211	::1	192.168.70.9	Active	<a href="#">Update</a>

Fig -8: User Activated with IP address

**Add New Notification**

Review of Project

Students

Review scheduled on 3rd April 2017 at 9 a.m.

[Add Notifications](#)

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Fig -9: Add Notification

IPNS 2017

Home My Notifications Account + Contact

**Subject : Review of Project**

**Message**

Review scheduled on 3rd April 2017 at 9 a.m.

anita  
anita@gmail.com  
Profile  
Change Password  
Logout

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Prof. Shrikant Nagure  
Anita Phatak  
Hanraj Sate  
Sivraj Khatavkar

Fig -10: Notification View

NotificationID	Date	Subject	NotificationType	Message	Status
12	2017-04-02 11:48:12	Review of Project	Students	Review scheduled on 3rd April 2017 at 9 a.m.	<a href="#">View Status</a>
11	2017-03-27 13:22:32	Final exam April	Students	Come to exam	<a href="#">View Status</a>
10	2017-03-27 13:11:00	Farewell	Students	Today is farewell	<a href="#">View Status</a>
9	2017-03-27 13:07:52	Prelim Exam 2017	All	Today is exam	<a href="#">View Status</a>
8	2017-03-26 10:22:00	College News	All	College News	<a href="#">View Status</a>

Fig -11: Notification List

IPNS 2017				Home	My Notifications	Account	Contact
NotificationID	Subject	Status					
12	Review of Project	View					
11	Final exam April	View					
10	Farewell	View					
9	Prelim Exam 2017	View					
8	College News	View					
6	exam2017	View					

Fig -12: Sent Notification

### 3. CONCLUSION

Mobile communication as well as mobile application more and more meaningful role in technology in recent years, inevitably accompanied with more and more challenges and issues in various aspects. In this survey paper, we provided a comprehensive review on the related research literature on push notification and web services. We discussed many novel proposed schemes and techniques in different research areas ranging from media messages, scheduling of push notifications, cost as well as their performance related to web server and their services. Admitting these proposals address many issues and improve the network performance, there are still challenging and critical problems that are left for researcher to handle. Nevertheless, a good understanding of the web services and push notifications would allow sustainable data center.

### 3. REFERENCES

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