

PHP Desk

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Abstract— We use web browser to download HTML, CSS and JS code and execute it. This HTML/CSS/JS code is an output produced by server after processing PHP or JSP pages. So this implies that actual process is completed by server. This is the only disadvantage with this kind of system. We can avoid this problem, if we use our new proposed system called PHP Desk. PHP Desk system does not bring any time overhead to load pages as it completes all processes on client side only. In other words it will make application work fast enough to look like they are real-time projects or desktop applications.

As we have said that PHP Desk makes a web script look like it is executing as desktop application. It means a web developer can become desktop developer. He/she does not need to learn any special programming language or any technology to develop desktop applications. With their current knowledge they can build good quality desktop applications using PHP Desk system. PHP Desk helps to use Graphics of Web Standards for desktop applications with the same ease of their use in Web Applications. PHP Desk is also useful to utilize CMS technologies for rapid development of new applications.

PHP Desk system has to deal with many issues like encryption and decryption to provide security to data and code. This code is actually a PHP code which carries critical business logic and data storage information or database connections. This code is not to be disclosed to clients and other developers. But if we deploy the project to client then the code will be accessible to client. To avoid this we have developed concepts like HK, ECF, SCG, and SCD.

We encrypt PHP code using DES algorithm for security purpose. A key of 56 bits is used for encryption which is then processed by SHA algorithm to generate HK (Hashed Key) to be included as Digital Certificate. Code after encryption is called as ECF (Encrypted Code Format) which is generated by SCG (Secure Code Generator). SCG is developer's tool. Developer will utilize it to provide security to the code. SCD is supportive tool to client side Apache, which is responsible for decryption of Apache's decrypted code and it also communicates with apache server. Using the above proposed techniques we can overcome the security issues associated earlier.

Index Terms - Secure Code Generator, Secure Code Decryptor, Hashed Key, Encrypted Code Format.

I. INTRODUCTION

A. OVERVIEW

WAMP server is a tool to run PHP application on desktop system as dummy web server and web host. When PHP code is deployed to client side i.e. desktop system, the client can have full access to PHP code through WAMP server. The client can make unwanted changes to PHP code being deployed to his/her side. To avoid these unwanted changes to PHP code there is need of some technique which we are trying to implement. Interactive applications which use JQuery, Flex, Flash, etc for providing graphics to the applications, put unnecessary load on the server. To avoid this load we can execute PHP code at client side using its own processor. This execution load transfers from server side to client side. The Web developer can become Desktop developer.

B. BRIEF DESCRIPTION

The main purpose of PHP Desk system is to bring web technology to client side. Most often PHP code is developed on server side and it requires much time to be interpreted by Zend engine on Server side. But we are bringing Zend Engine technology for interpreting PHP Code on client side. We are developing Secure Code Generator (SCG) and Secure Code Descriptor (SCD) for encryption and decryption respectively. Using SCG and SCD; PHP code remains secure while deploying it to the client side. System will provide graphics of Web Standard. The striking thing is that PHP Desk technology will be useful for both users and developer.

C. PROBLEM DEFINITION

PHP Desk is a new approach to bring web application to desktop application. Usually web applications are not time efficient but we can make them time efficient by deploying that web application on desktop system. In this scenario (PHP Desk), code and graphics will remain same; also user environment will remain same.

II. TECHNOLOGIES USED IN PHP DESK

A. APACHE SERVER

The Apache HTTP Server, commonly referred to as Apache, is a web server software program notable for playing a key role in the initial growth of the World Wide Web. In 2009 it became the first web server software to surpass the 100 million website milestone. Apache was the first viable alternative to the Netscape Communications Corporation web server (currently named Oracle iPlanet Web Server). Typically Apache is run on a Unix-like operating system, and was developed for use on Linux. Apache is developed and maintained by an open community of developers under the auspices of the Apache Software Foundation. The application is available for a wide variety of operating systems, including Unix, FreeBSD, Linux, Solaris, Novell NetWare, OS X, Microsoft Windows, OS/2, TPF, and eComStation. Released under the Apache License, Apache is open-source software

B. ZEND ENGINE

The Zend Engine is the open source scripting engine that interprets the PHP programming language. It was originally developed by Andi Gutmans and Zeev Suraski while they were students at the Technion - Israel Institute of Technology. They later founded a company called

Zend Technologies in Ramat Gan, Israel. The name Zend is a combination of their forenames, Zeev and Andi.

C. WEB BROWERS

A web browser is a software application for retrieving, presenting and traversing information resources on the World Wide Web. A web browser can also be defined as an application software or program designed to enable users to access, retrieve and view documents and other resources on the Internet. Although browsers are primarily intended to use the World Wide Web, they can also be used to access information provided by web servers in private networks or files in file systems. The major web browsers are Chrome, Firefox, Internet Explorer, Opera, and Safari. The following diagram depicts the communication system of web browser, Apache Server and SCD. We will see the detailed description of diagram in working principle.

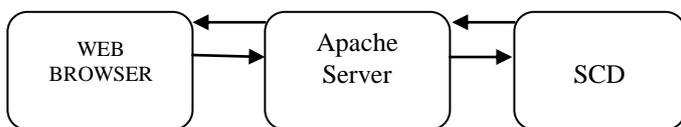


Fig. 1 Communication Diagram

III. WORKING PRINCIPAL OF PHP DESK

As stated earlier, PHP desk is a technology for the desktop application development. It is to bring web to you. The web technology makes developers to build code for both web applications and desktop applications (stand alone applications). The applications which are built using this technology can work on fully stand alone as well as dynamic (depend on other web apps).

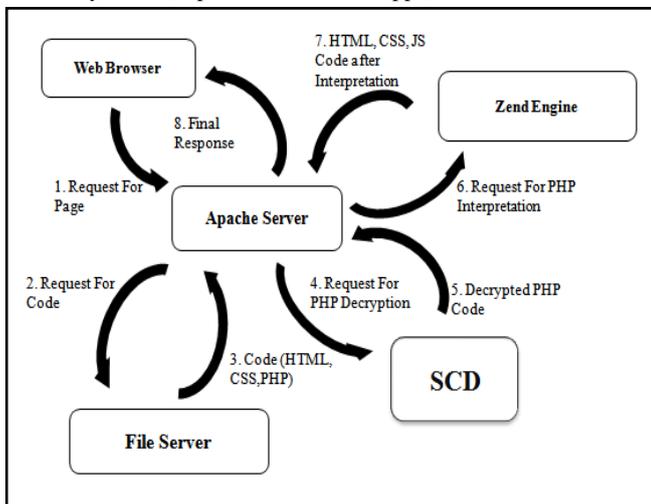


Fig. 2 Working Principle

1. The web pages are stored on client side
2. The web pages may be completely designed in HTML or PHP with HTML
3. Firstly browser sends the request for PHP page.
4. After receiving the request, it is processed by apache server
5. Apache server forwards page name that requests Zend Engine to interpret the PHP code.
6. Zend engine interprets code and converts it into HTML/CSS/JS code which is understood by the browser

7. This code is then processed by web browser to display the appropriate output.
8. This is the way in which PHP desk works.

IV. Security Issues

In development of any technology security is an important issue as we know the code which is deployed to client side or stand alone system is visible to user. This may violate copyright issues or may be copied and used by some other organization to produce similar applications. In this scenario the code security is very important. This can be achieved by encrypting the code. In order to achieve this we need to modify Apache server, web browser and also Zend engine.

In other words we need to make complete new combined software package for these changes. This includes changed apache server, web browser (Mozilla Firefox as it is open source) and also Zend engine. We need to include an encryption/decryption system in between the processing of page and loading content to the browser.

When the browser sends request for page which is to be processed by apache server. Apache will then decide what to do with this. If the request is for php page then it will forward it to Zend engine. But as the code is encrypted it has to be taken to SCD (Secure Code Decrypter). SCD is new technology proposed by us to make it easy to secure the code. In simple words it's nothing but encryption/decryption software, which will manage this for PHP Desk system. When the request is received by SCD, it navigates to that code. It will process it to decrypt it and will forward original code of this page to the Zend engine.

There is no need to process the images by SCD as we need not worry about their security. Before all this, we need to encrypt the pages which are to be deployed to stand alone system. This is also done by a similar system like SCD called as SCG (Secure Code Generator). This is special software paired with SCD. The code generated by the Secure Code Generator can only be decrypted by SCD.

A. Working Principle of SCG

Following are the steps used to generate the secure code from the code given by us to SCG.

1. The code is given to SCG system.
2. The SCG firstly analyzes the code for malwares and other security issues.
3. Then SCG generates the hash code from the whole code using SHA1 namely CIDF (Code Identification).
4. Then a random key is selected from the large database of keys (Standard of the SCG).
5. The key is used in encryption using DES (Data Encryption Standard).
6. We will encrypt the whole code using DES called ECF (Encrypted Code Format).
7. Then the key is also hashed using the SHA1 called HK (Hashed Key).

Thus, in the above mentioned way we can deal with security issues related to this technology, which is our primary concern.

A.1 Following is the file structure of file generated by SCG.

1. Firstly the SCG Version Identification or SCG Type Identification is added to file.
2. Then the HK is added to File
3. After that it comes to ECF.
4. At last we add CIDF.

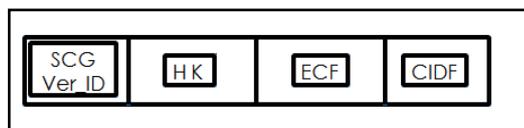


Fig. 3 File Structure of file generated by SCG

This is very simple format and can be improved with new ideas and new encryption techniques.

V. Applications

A. Simple Client Applications

These applications are like Store Management, School Management, and Employee Relationship Management. Such application can be developed with lots of ease.

B. CMS Technologies

This Technology can be used along with CMS technologies. This will help developers to build the application more rapidly. The GUI and Used interface provided by these technologies is just ultimate. So it will be very useful for this scenario.

C. Interactive Graphical Applications

These application use special technologies like Flash, Flex, JQuery to build the interactive and user friendly Graphical Design. These application bring large load on the server as they carry large amount of data or code related to this graphics. This can be reduced if we are able to put that load on users processor and can be made faster enough to look like its fully running on your system.

D. Distributed Way

The application need not be fully deployed on client side. The code causing overhead can only be deployed client side. So the application can work faster enough. This will bring new era of programming. This will help build more interactive applications

VI. Conclusion

The developed technology is applicable for both desktop development and web development. It supports all current trending technologies like CMS, Interactive Web Applications, etc. Using this technology required changes can be done in apache server. There is no such tool in the market which can provide facility to build both web application and desktop application. That's why we are building this new tool PHP Desk which can provide facility to build such applications. Developer writes a PHP code which can be used as web application as well as Desktop application. PHP Desk

tool will support currently trending technologies like CSS 3, HTML 5.0, JQuery in the market. We can easily modify request response of apache server using apache SVN.

VII. REFERENCES

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