"Cloud Computing Along Web-Os" (How Webos Uses the Concept of Cloudcomputing in Data Storage)

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ABSTRACT :
With the increasing use of high-speed Internet technologies during the past few years, the concept of cloud computing has become more popular. Especially in this economy, cloud services can provide speed, efficiencies and cost savings. In cloud computing, users work with Web-based, rather than local, storage and software. These applications are accessible via a browser and look and act like desktop programs. With this approach, users can work with their applications from multiple computers. In addition, organizations can more easily control corporate data and reduce malware infections. Now, a growing number of organizations are adding to the cloud concept by releasing commercial and open source Web-based operating systems. This paper deals with how Web OS uses cloud computing concept. The Web OS goes beyond basic desktop functionality. It also includes many of a traditional OS's capabilities, including a file system, file management, and productivity and communications applications. In the case with Web-based applications, the Web OS functions across platforms from any device with Internet access. The Web OSs that run on the browser are platform-independent, since browsers are built to work across different operating systems. As users become more comfortable working over the Web, the Web OS could become more popular.

I. INTRODUCTION

As the days progresses, the web applications and the usage of web also increases. This lead to the development of many computing technologies and the recent computing technology is Cloud Computing. Since cloud computing operates only with internet, this leads to the development of Web OS. Cloud computing makes collaboration easier and can reduce platform-incompatibility problems. While the idea isn't new, the proliferation of users and applications distributed over the Web, including those at scattered corporate sites, has made it more interesting, relevant, and, vendors hope, commercially viable. In addition, distributed groups can collaborate via the technology. Currently, available Web Os include G.ho.st Inc.'s Global Hosted Operating System (http://g.ho.st), Fearsome Engine's Zimdesk (www. zimdesk.com), WebShaka Inc.'s experimental YouOS (www.youos. com), the eyeOS Project's open source eyeOS (www.eyeos.com), Sun Microsystems' Secure Global Desktop (SGD, www.sun.com/ software/products/sgd/index.jsp), and Sapotek's Desktoptwo (English language, https://d esktoptwocom) and Computadora.de (Spanish, https://computadora.de). Of course, the Web OS won't replace the traditional operating system any time soon. But as users become more comfortable working over the Web, the Web OS could become more popular.
Nonetheless, the technology still has several important shortcomings that proponents must address.

II. DRIVING THE WEB OS

The Web OS—which functions much like a traditional operating system, although it doesn't include drivers for computer hardware—is becoming a subject of increasing interest. One contributing factor is Internet technologies' increasing bandwidth, which enables the faster movement of applications and data via the Internet to and from Web OSs.

EARLY DEVELOPMENTS

One of the Web OS's predecessors was Tarantella, which the Santa Cruz Operation launched in 1993. It was a Unix-based X Window System that worked over corporate networks and let PCs display a Unix desktop. However, the technology never caught on commercially. Sun acquired Tarantella in 2005 and

integrated it into the SGD. In 1992, University of California, Berkeley, researchers began work on what, four years later, became WebOS. The system delivered OS like functionality via the Internet. The effort demonstrated the feasibility of technologies that could be used in Web-based operating systems, such as a file system that identifies data by URLs, a location independent resource-naming system, and secure remote execution, noted UC Berkeley professor David Culler, who worked on the project.

III. ADVENT OF WEB OS

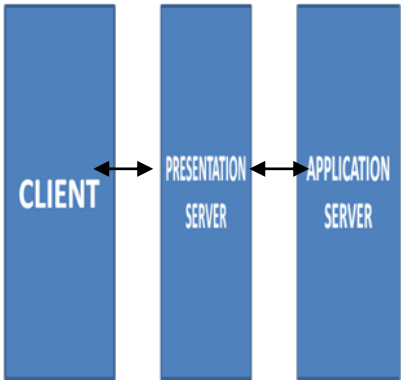
A key driving force behind the development of Web OSs has been the rise of Web-based applications. Several of these applications have started gaining traction in recent years, particularly those for email (such as Hotmail and Gmail), instant messaging, and storage (like X drive). Recently, there have also been Web-based word-processing and spreadsheet applications (such as Google Docs and Numbler). With the first generation of Web applications, implementing even some modest functions— like dragging and dropping files, making minor changes to documents without having to refresh the entire page, and caching data locally—was difficult. However, this has changed with technologies such as Ajax (Asynchronous JavaScript and XML), Adobe Flash, Adobe Integrated Runtime (AIR), Google Gears, and Microsoft Silverlight, which enable the development of rich Web applications, noted Guy Creese, analyst with the Burton Group, a market research firm. One of the Web OS's key challenges has been working around security limits, such as browsers' sandbox functionality, designed to restrict the local execution of Web applications.

IV. INSIDE THE WEB OS

Web OSs bring together Web-based applications using the browser as the interface, which is designed to look like a traditional operating system's interface, as Figure 1 shows. They work with a URL-based file system that lets a Web-based application access files from the OS provider's server online via a domain-name-system query. Similarly, the technology uses a location-independent resource naming system that lets applications make calls to services and resources on remote severs.

V. ARCHITECTURE

Web OSs use variations on the same basic architecture. The SGD uses a three-tier architecture, noted Mark Thacker, Sun's group product manager for security and virtualization. The application server hosts virtual machines that run programs and push



them to a presentation server, which manages the client connection. The thin client runs the application and passes user input back to the application server. Either the Web OS provider or a host company or data center can house the application and presentation servers. Simpler Web operating systems such as eyeOS use a two-tier architecture in which one machine acts as both application and presentation server. The client is the

second tier. More complex systems, such as G.ho.st, use a group of servers in place of a single application server and a single presentation server. In this case, the group of servers looks like one machine to the user. This type of system leverages the multiple servers computing and storage capacity to provide more scalability and reliability.

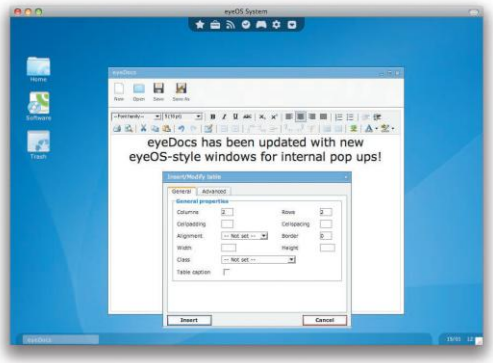
VI. NUTS AND BOLTS

Because browsers are built to work across different operating systems, the Web OSs that run on them are also platform-independent. Depending on the OS, the user can either execute applications locally via a program such as Flash, or the Web OS servers can execute the program remotely and display it in the client's browser window. Either way, users modify data locally and the client uploads the modified data via the Internet back to the Web OS server. When Web applications need overall changes or updates, the Web OS provider uploads them within its servers. These changes appear the next time clients download the programs, without users having to do anything. In G.ho.st, users have the option of storing data in a local cache so that they can work with it offline. Communications between the browser-based interface and the Web OS server, between the server and applications being used, and between programs that must interact with one another while clients are working with them occur via standard protocols such as HTTP and FTP. Generally, the Web OS providers' back-end servers handle file management and security, and help integrate applications with one another so that they can interact. **Web OSs use encryption to obfuscate data sent between the client and server.** The providers also run a standard suite of intrusion detection and antivirus applications. Users add security to their Web OS operations via their own applications. Unless users choose to run applications or save data locally, they leave no trace of their work on the
computers they use.

VII. APPLICATIONS

Most Web OSs, such as eyeOS and Desktoptwo, feature APIs that let programmers write new programs for the operating system.

Figure 1. Web-based operating systems, such as eyeOS, have interfaces designed to look like those of traditional OSs, to make using them easier and more familiar.



VIII. DATA SECURITY

As far as the internet is concerned, whatever the application that is published in the web is prone to attack. So security is always the major issue to be concerned. But we have the solution to this problem. The solution is the use of "Double Login System". Whenever a user registered using his email id and password, a secret key is generated and given to him. This key acts as a part of key for second login.

(**Algorithm**)

If(registered user)
Enter the email id and password.

If(email id and password are not valid)
Enter the valid email id and password.

Else

Goto second login page.

[Generate the key which is a part of the next login and send it to the valid email id. The key is then concatenated with the secret key, which is provided at the time of registration for each user. This concatenated key is used for second login.]

Enter the concatenated key.

If(concatenated key is not valid)
Enter the valid concatenated key.

Else
Goto the homepage.

Endif

Endif

Else[not a registered user]
Register using the email id and password.

Endif

IX. ADVANTAGES

A Web OS runs on any Internet enabled computer or device. This is important for mobile workers or people who don't have their own computers and must work out of Internet cafes, libraries, or schools. Also, Web OS users can work, log out, and then log in later from a different computer. In addition, because the same Web OS can run on different computers, the technology facilitates collaboration among multiple work centers. The traditional OS runs on only one computer. Extensions such as the *Network File System*—a way for different machines to import and export local files—and *remote desktop*— a way to control one computer by using another device—allow easier access to information from multiple locations and better user collaboration. However, these techniques are limited to a set of machines on the same network or specific computers that have been linked. With a Web OS, users can store, find, and otherwise manage files and services, such as calendars and email, from a Web desktop. And storing applications, files, and services on an OS provider's servers, rather than on the user's computer, makes them harder for a PC or laptop thief to use. Web OS users don't have to back up or archive work because the provider's remote server handles these functions. The technology also promises to reduce users' long-term computer and device costs because much of the heavy processing is concentrated in providers' remote servers, Sun's Thacker said. Because the Web OS operates across platforms, it eliminates compatibility issues between applications and operating systems. Thus, the same Web OS will run on a Windows, Mac, or Linux machine. Application developers create an application only once for a Web OS, rather than many times for each of the traditional operating systems. And system administrators have to deploy an application only once for a given Web OS. They can then easily distribute it online to users. Because the Web OS and its applications are generally based in servers that can be monitored and secured from one location, they provide centralized malware protection.

X. CONCLUSION

Thus the Web OS provide all the facilities and more UI interface similar to that of the traditional OS for the users to work. If the limitations are overcame, then the users will shift to the Web OS from the traditional OS and it will turned out to be the OS for the future.

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