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A SURVEY OF CLOUD BASED SECURED WEB APPLICATION

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ABSTRACT

Cloud computing is a schema for allowing appropriate onrequest network access to a shared pool of configurable computing resources, that can be rapidly delivered and released by minimal management effort or service provider. In cloud computing, you need a Web browser to access to everything needed to run your business from the required applications, services, and infrastructure.

Many web developers are not security-aware. As a result, there exist many web sites on the Internet that are vulnerable. More and more Web-based enterprise applications deal with sensitive financial and medical data, which, if compromised, in addition to downtime can mean millions of dollars in damages. It is crucial to protect these applications from malicious attacks. In this paper we present a comprehensive survey of cloud based secure web application in the literature. The goal of this paper is to present a comparison of various previous methods proposed in the literature and a comparison between Python to other used programming languages.

Keywords: Web Application, Cloud computing, Security, Method Taxonomy, Programming Language

1. INTRODUCTION

Cloud Computing is a paradigm in which information is always stored in servers on the internet and cached temporarily on clients that include desktops, entertainment centers, table computers, notebooks, wall computers, hand-held, etc.". These services are generally divided into three types: Infrastructure-as-a-Service (IaaS), Platform-as-a-Service (PaaS) and Software-as-a-Service (SaaS). Cloud computing model advances several web applications as of its elasticity nature. This form of computing increases the efficiency of computing and decreases operating cost. Web applications involve of several different and interacting technologies, these connections between different technologies can cause vast security problems. Today's combat zone for both ethical and unethical hackers is the web. Rapid growth of web sites and web applications gives way to deliver complex business applications through the web. As the web dependency increases, so do the web hacking activities. Web applications are normally written in scripting languages like JavaScript, PHP

embedded in HTML allowing connectivity to the databases, retrieving data and putting them in the WWW site, As many as 70% of websites have vulnerabilities that could lead to the theft of sensitive corporate data such as credit card information and customer lists, Accessible 24/7 from anywhere in the world, insecure web applications provide easy access to backend corporate databases and also allow hackers to perform illegal activities using the compromised site [1].

Cloud Web Application Security (CWAS) crawls website and automatically analyzes web applications to discover security holes in web applications that an attacker would likely abuse to gain illicit access to your systems and data. It looks for multiple vulnerabilities including SQL injection, Cross Site Scripting, Broken Authentication and Session Management, Insecure Direct Object References and Cross-Site Request Forgery.

CWAS doesn't just let see how website is vulnerable. It also consider an important tool for web developers because provides concise reports for each weakness identified and can be used to increase the security of the web application being tested where web applications need to be fixed; Reporting was found to be sufficient. The reports are clean, easy to read.

In this paper we present a comprehensive survey of cloud-based Web application in the literature. The aim of this paper is to provide a comparative study between the various previous proposed methods in the literature, and compared between Python and other programming languages used. This paper is organized as follows: Section 2 introduces the related works. Section 3 presents Comparison Python to other languages, conclusions and future works are presented in section 4.

2. RELATED WORK

In this section we introduced a briefly comparison between the related work as shown in table (1), according to the attack, algorithm, language, technique model, analysis study, and testes case no web, for more information see, [2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53].

Table 1: Comparison of related works

Title	Attack	Algorithm	Language	Technique model	Analysis Study	Tests case No web	year
A New Security Testing Method for Detecting Flash Vulnerabilities by Generating Test Patterns							2010
1	Flash application			VM		many test patterns	
An Automated Vulnerability Scanner for Injection Attack Based on Injection Point							2010
2	Injection Attack	Automated Vulnerability Scanner	PHP5+MySQL	VM	Black	7 NVD	
An Effect Evaluation Model for Vulnerability Testing of Web Application.pdf							2010
3	Common Vulnerabilities and Exposures (CVE)		PHP5+MySQL	Analytic Hierarchy Process (AHP)		IPB (Invision Power Board)	
State of the Art Automated Black-Box Web Application Vulnerability TestinG.pdf							2010
4	Vulnerability TestinG	Common Vulnerabilities and	PHP5+MySQL	Black-Box Web Application Vulnerability		Drupal, phpBB2, Wordpress	

D-WAV: A Web Application Vulnerabilities Detection Tool Using Characteristics of Web Forms							2010
5	Xss injection		Java HTML	Web Forms	Web Application Vulnerabilities	Custom web application	
An Advanced Web Attack Detection And Prevention Tool							2011
6	detects common web attacks	flexible attacks search engine WAFs	PHP5+MySQL	pattern recognition. stored XSS can be detected	dotDefender ModSecurity	OWASP, using over 200 attack patterns	
Early Detection of Security Misconfiguration Vulnerabilities in Web Applications							2011
7	audits security configuration settings of server		Apache, PHP and MySQL	components of security configuration Auditor,	eleven real-life web application	Windows, Linux and MacOS	
Security Model Evolution of PHP Web Applications							2011
8	Security Model Evolution	Model extraction PSP computation	control flow graph (CFG)	Property Satisfaction Profiles (PSP)	31 phpBB	phpBB bulletin board	
Using SQL Hotspots in a Prioritization Heuristic for Detecting All Types of Web application Vulnerabilities							2011
9	a heuristic for prediction of all vulnerability types	to improve the prioritization of security fortification efforts	Apache, PHP and MySQL	SQL Hotspots	15 of two WordPress wikkaWik	of two open source PHP web applications	
Security Testing of Web Applications aSearch Based Approach for Cross-Site Scripting Vulnerabilities							2011
1	Xss	Genetic algorithms local search	PHP	AI Search Based Approach	Static analysis	Yapig open-source PHP application	
Improving penetration testing through static and dynamic analysis.pdf							2011
1	Improving penetration		Java serverlet	prototype tool, SDAPT	two popular penetration	nine Java-based web applications	

	on testing				n testing tools		
Mutation Analysis of Magento for Evaluating Threat Model-Based Security Testing.pdf							2011
1	Evaluating Threat Model			Mutation Analysis	two security testing techniques	Magento fully-fledged open source e-commerce web application	
Search-based Application Security Testing Towards a Structured Search Space.							2011
1	XSS			Structured Search Space	Web Application Vulnerability Testing	web applications	
Trustworthiness Benchmarking of Web Applications Using Static Code Analysis.pdf							2011
1	Injection		Java	SCAs: Static Code Analysis	FindBugs Yasca , IntelliJ Idea Analyzer	seven distinct open source web forums,	
Finding Vulnerabilities in Rich Internet Applications (FlexAS3) Using Static Techniques							2012
1	Adobe Flex	regular expressions	Action Script 3.0.	Vulnerability Detection			

Testing Websites by P3R2							2012
This paper proposes a new PPPRR (P3R2) MODEL for website testing.							
1	Testing Websites		Ajax	P3R2 Model			
A novel method for SQL injection attack detection based on removing SQL query attribute values							2012
1	Injection	combined static and dynamic analysis		removing SQL query attribute values	SQLCheck and AMNESIA	five types of web applications	
Web Application Security by SQL Injection DetectionTools							2012
1	Injection			Comparison of SQL Injection Detection			

3. COMPARING PYTHON TO OTHER LANGUAGES

In this section we introduced a briefly comparison for the used programming language, as shown in Table (2), between Python,PHP, and RUBY according to Version, Purpose, Creator And Year Release, Influenced By, Site Built Using It, Usability, and Ease Of Learning. This comparison concentrates on language issues only. In practice, the choice of a programming language is often dictated by other realworld constraints such as cost, availability, training, and prior investment, or even emotional attachment. Since these aspects are highly variable, it seems a waste of time to consider them much for this comparison.

Table 2: Compare Python to other languages

	PHP	RUBY	PYTHON
Current Version	PHP: 5.3.8 AUGUST 23, 2011	RUBY: 1.9.3 OCTOBER 31, 2011	python 3.2.2 September 4,2011
Purpose	Php was designed for web development to produce dynamic web pages	Ruby design to make programming fun and flexible for the programmer	Python was design to emphasize productivity and code readability
Creator And Year Release	1995 RASMUS LERDORF	1995 YUKIHIRO “MATZ” MATSUMOTO	1991 GUIDO VAN ROSSUM
Influenced By	C/TCL/PERL/JAVA/C++	ADA/C++/CLU/ DYLAN/IEFFEL/ LISP/PERL/PYTHON	ABC/ ALGOL68/ C/C++/ICON/ JAVA/LISP/PERL
Site Built Using It	WIKIPEDIA UDEMY FACEBOOK	TWITTER HULU GROUPON	YOUTUBE/GOOGLE
Usability	PHP FOLLOWS A Classic approach and is extensively documented	Programmers describe ruby code as elegant, powerful and expressive. It is highly usable because of its principle of least astonishment ,enforced to minimize for users	Python uses strict indentation enforcements .python is arguably the most readable programming language
Ease Of Learning	Php is easy to learn for former c programmers	Ruby is better for programmer who already knows a language or two	Python is great for beginners ,often recommended by programmers due to the simplicity of its syntax

CONCLUSIONS

There is a demand need, to presents a solution that allows users to test their Website for vulnerabilities, and conduct quick assessments entirely in the cloud by works as a black box, scan for vulnerability alsotests for web applications and all the security test cases, and to obtain reliable results of those tests. In this paper we present two tables one for comparison of the previous works and the other for comparison Python to the other used programming language.

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