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ENHANCING PERFORMANCE AND ENERGY EFFICIENCY FOR HYBRID WORKLOADS IN VIRTUALIZED CLOUD ENVIRONMENT

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Abstract: Virtualization has attained mainstream status in enterprise IT industry. Despite its widespread adoption, it is known that virtualization also introduces non-trivial overhead when tasks are executed on a virtual machine (VM). In particular, a combined effect from device virtualization overhead and CPU scheduling latency can cause performance degradation when computation intensive tasks and I/O intensive tasks are co-located on a VM. Such an interference also causes extra energy consumption. In this paper, we present Hylics ,a novel solution that enables efficient data traverse paths for both I/O and computation intensive workloads. This is achieved with the provision of in-memory file system and network service at the hypervisor level. Several important design issues are pinpointed and addressed during our prototype implementation, including efficient intermediate data sharing, network service offloading, and QoS-aware memory usage management. Based on our real-world deployment on KVM, we show that Hylics can significantly improve computation and I/O performance for hybrid workloads. Moreover, this design also alleviates the existing virtualization overhead and naturally optimizes the overall energy efficiency

Keywords

VRM	Virtual reality Machine
IDE	Integrated Development Environment
KVM	Kernel based Virtual Machine

I.INTRODUCTION

Architecturally, JSP may be viewed as a high-level abstraction of Java servlets. JSP pages are loaded in the server and are operated from a structured special installed Java server packet called a Java EE Web Application, often packaged as a .war or .ear file archive.JSP allows Java code and certain pre-defined actions to be interleaved with static web markup content, with the resulting page being compiled and executed on the server to deliver an HTML or XML document. The compiled pages and any dependent Java libraries use Java bytecode rather than a native software format, and must therefore be executed within a Java virtual machine (JVM) that integrates with the host operating system to provide an abstract platform-neutral environment.JSP syntax is a fluid mix of two basic content forms: scriptlet elements and markup. Markup is typically standard HTML or XML, while scriptlet elements are delimited blocks of Java code which may be intermixed with the markup. When the page is requested the Java code is executed and its output is added, in situ, with the surrounding markup to create the final page. JSP pages must be compiled to Java bytecode classes before they can be executed, but such compilation is needed only when a change to the source JSP file has occurred. Java code is not required to be complete (self contained) within its scriptlet element block, but can straddle markup content providing the page as a whole is syntactically correct (for example, any Java if/for/while blocks opened in one scriptlet element must be correctly closed in a later element for the page to successfully compile). This system of split inline coding sections is called step over scripting because it can wrap around the static markup bystepping over it. Markup which falls inside a split block of code is subject to that code, so markup inside an if block will only appear in the output when the if condition evaluates to true; likewise markup inside a loop construct may appear multiple times in the output depending upon how many times the loop body runs.The JSP syntax adds additional XML-like tags, called JSP actions, to invoke built-in functionality. Additionally, the technology allows for the creation of JSP tag libraries that act as extensions to the standard HTML or XML tags. JVM operated tag libraries provide a platform independent way of extending the capabilities of a web server. Note that not all commercial Java servers are Java EE specification compliant.MySQL is a relational database management system (RDBMS)[2] that runs as a server providing multi-user access to a number of databases. The SQL phrase stands for Structured Query Language.

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The software components used in our project are as under: 1.Eclipse, 2.MySQL database

OBJECTIVE

- Implement a computationally light weight efficient password protection called enhancing performance energy efficiency in virtualized cloud environment
- To design and implement the service layers to expose this password protection layer to various other layers in the server side architecture
- To implement the solution in such a way that it should be easier to integrate this with existing systems
- To prove that the proposed scheme provides a strong security against various kinds of attacks.
- To provide an efficient user interface access to the clients to access the portal
- To deploy the project over the cloud so that it can be accessed from various geographical location from any device.

SCOPE

By securing the password the online sites can provide security and protected from the cracking password. Passwords in the authentication data table presented in the form of hashed passwords. Processor resources and storage resources are becoming more and more abundant, so that the hashed passwords cannot resist pre computation attacks, such as rainbow table attack and lookup table attack. Moreover, they download and use attack tools without the need of any professional security knowledge. Some powerful attack tools, such as hash, Rainbow Crack and John the Ripper, provide functions, such as multiple hash algorithms, multiple attack models, multiple operating systems, and multiple platforms, which grand higher demand for secure password storage. In these situations, attacks are usually carried such as adversaries pre compute a lookup table, where the keys are the hash values of elements in a password list which contains frequent used passwords, and the records displayed are corresponding plain passwords in the password list. From the low security system generate a authentication data table .Finally, they search for the plain passwords in the lookup table with corresponding matching hashed passwords in the authentication data table and the keys in the lookup table. Then, by log into higher security systems through cracked usernames and passwords, they could steal more sensitive information of users.

II. ANALYSIS

SYSTEM ANALYSIS

System design is the process of defining the architecture, components, modules, interfaces and data for a system to satisfy specified requirements. It could be seen as the application of system theory to product development.

PROBLEM IDENTIFICATION

Systems make it easy for a user to discover a valid user ID, displaying a message when a logon failure occurs. Such messages may say Invalid user ID, telling the hacker that he or she should keep guessing user IDs. When a valid user ID is found, a malicious hacker may then be shown another revealing message, such as, "Invalid password." Ideally, a system's logon failure message should be generic, such as, "Invalid user ID or password," regardless of the reason for failure. Otherwise, the hacker could enumerate a valid user ID and start guessing passwords, looking for a weak one, which brings us to the next point.Weak passwords are a significant authentication system security weakness. If at all possible, enforce password rules for every system on the network, especially for systems at the network border. Password and account rules should at least require a mix of letters and numbers, and should specify a minimum password length, password history, account lockout and password expiration. If possible, set password rules that do not allow a password to be the same as the user ID or the user's first or last name, as these are easy to guess. The goal is to force users to choose strong passwords.

Existing System :

In particular, a combined effect from device virtualization overhead and CPU scheduling latency can cause performance degradation when computation intensive tasks and I/O intensive tasks are co-located on a VM. There is an interference also causes extra energy consumption

Proposed System [r1]

In this paper, We present Hylics a novel solution that enables efficient data traverse paths for both I/O and computation intensive workloads. This is achieved with the provision of in-memory file system and network service at the hypervisor

III. SYSTEM DESIGN

A design is a plan or specification for the construction of an object or system or for the implementation of an activity or process, or the result of that plan or specification in the form of a prototype, product or process.

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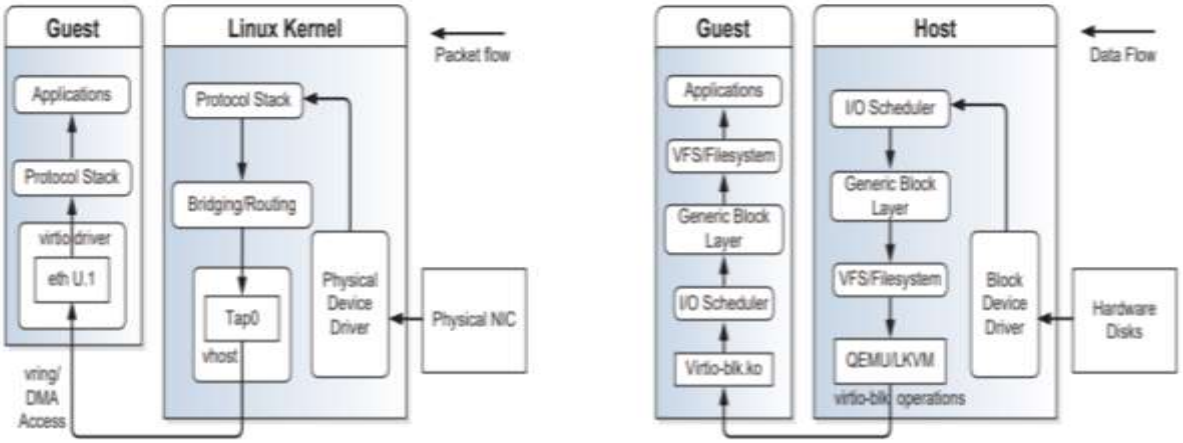
SYSTEM ARCHITECTURE

A system architecture is a conceptual model that defines structure and behavior and more views of a system. An architecture description is a formal description and representation of a system, organized in a way that supports Reasoning about that structure and behavior of the system



IV .DATABASE DESIGN

Database Design is defined as a collection of steps that help with designing, creating, implementing, and maintaining a business's data management systems. The main purpose of designing a database is to produce physical and logical models of designs for the proposed database system.

1.Database Design for Data Owner registration

S.NO	Field Name	Field Type
1	Name	Varchar
2	Password	Varchar

2. Database Design for Data User Login

S.NO	Field Name	Field Type
1	Name	Varchar
2	Mobile Number	Int

3. Database Design for Add Data Owner

S.NO	Field Name	Field Type
1	Name	Varchar
2	Email id	Varchar
3	Phone	Int
4	Password	Varchar

V . MODULES

1.Data Owner Registration
2.Data User Registration
3.Data Owner Login
4.Data User Login

1. DATA OWNER REGISTRATION

Initially Data Owner must have to register their detail and after login. Then data Owner can upload files into cloud server with encrypted keywords and hashing algorithms. He she can view the files that are uploaded in cloud. Data Owner can approved oreject file request sent by data users.

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1.1Login/Registration:

In order to be a part of domain, user needs to register on the portal. In order to register on the portal, user need to provide some personal information which will be stored at back-end. At the time of login the credentials Username and password will be used to authenticate the user.

1.2View Files(Search):

It is the core module for the Data user. In this module user can search specific files (desired). User can search specific file by providing a tag (can be part of content or name of the file) in the searching bar, if the file exists for the particular tag value, the file title will be shown on the dashboard. In the case of wrong tag insertion for search, the returned output will be null.

1.3Download Files:

This module depends on the Search module. After searching files if some files list returned, User gets option for downloading the files. User can select specific file and download it by providing the respected private key (which is mailed him/her by the data owner)

2 . DATA USER REGISTRATION

Initially Data Users must have to register their detail and then login into cloud. Data Users can search all the files upload by data owners. He she can send request to the files and then request will send to the data owners. If data owner approve the request then he/she will receive the decryption key in registered

2.1 Login Module:

Data Owner need to login on the portal in order to upload the data on the cloud.

2.2 Data Upload:

This module is dedicated for the process of uploading the content on the cloud server. Data owner have to select any data file (text) from the local machine in order to upload it on cloud server.

2.3 Files(Search): View

If the data owner wants to search any specific file, this module provides the option. The output of search operation will provide the list of the files; the module will also have the option for deletion of specific file.

2.4 File Share:

This module provides the option for file sharing. The module is somehow depends on the View file module. After searching files, the data owner can select specific file(s) and select specific user(s) with whom he want to share with.

VI.CONCLUSION

A computerized alumni management system has been developed and the system was tested with sample data. The system results in regular timely preparations of required outputs. In comparison with manual system the benefits under a computer system are considerable in the saving of man power working hours .It also increases the feasibility Provision for addition and deletion of student /faculty is there in the system.It is possible to view information of other student/faculty after successfully logging in. The entire project runs on windows environments. The system can be used to increase student faculty interaction and also increase their involvement with the college.

VII. FUTURE ENHANCEMENT

The Important design issues are pinpointed and addressed during our prototype implementation, including efficient intermediate data sharing, network service offloading, and QoS-aware memory usage management.

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