Linux Based Virtual Operating System

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Abstract—Now-a-days we are giving the preference to windows operating system because it is user friendly and easy for installation. Even if its costly but piracy is high and easily available. But Linux is open source system. Linux is easy for reinstallation and security purpose. Linux is generally a more powerful system, with fewer requirements. It is highly configurable, flexible, and extremely low cost. However, it is typically more time-consuming and difficult to set up and maintain a Linux system.

Windows is less powerful in some aspects and has higher hardware requirements. It’s configurable and flexible too, but not nearly as much, and costs quite a bit more. However, Windows systems are generally quite easy to set up and maintain.

Virtual operating system is a concept in which we can use more than one operating system at the same time. In our project we can use Linux and windows operating system at the same time. All the command being used in windows platform will get executed on Linux platform, hence new user don’t need to learn Unix command and he can use Unix as efficiently as he use the windows. So in future any user can use Unix without any fair in mind and can do his work without losing time.

I. INTRODUCTION

Virtual operating system is a concept in which we can use more than one operating system at the same time. In our project we can use Linux and windows operating system at the same time. All the command being used in windows platform will get executed on Linux platform, hence new user don’t need to learn Unix command and he can use Unix as efficiently as he use the windows. So in future any user can use Unix without any fair in mind and can do his work without losing time.

The application will provide proper user Id and password, so that no one can misuse it. then we provide one window to enter proper command after entering it this command will get executed and output will be displayed on the same window hence the user will get output within short time. All this interface will done with the system kernel and we got proper output from kernel.

This system will be used in training phase of all the company where all new comers are not aware of Linux if any user feel difficult to use Linux at that place it will applicable as substitution. Also no any kind of special training needed for it.

Also the new user who want to use Linux but don’t know about it then they can start with this software.

Migrating operating system instances across distinct physical hosts is a useful tool for administrators of data centers and clusters: It allows a clean separation between hardware and software’s, and facilitate fault management, load balancing, and lower level system maintenance. By carrying out the majority of the migration while OS’s continue to run, we can achieve impressive performance with minimal service downtime; we demonstrate the migration of entire OS instances on a commodity cluster, recording service downtime as low as 60milisec. We show that our performance is sufficient to make live migration a practical tool even for servers running interactive loads.

II. ARCHITECTURE OF VOS

[Diagram of architecture]

Architecture of v.o.s. is shown in above fig. Application program send execution request to V.O.S then it executes the routine and send it to kernel through JVM.
JVM is the communication interface between V.O.S and kernel. Finally, kernel executes it on hardware.

III. PROPOSED WORK

Basically O.S runs on hardware and application program runs on O.S. O.S has 2 parts –

i. GUI

ii. Kernel

Application program sends execution request to GUI, then GUI executes routine for that request and kernel executes it on hardware.

V.O.S is based on O.S and communicate with OS through JVM. VOS applications are executed by VOS. When command is fired then execution request goes to VOS.

VOS checks whether it is a Linux command and if it is Linux command then it goes to GUI and through shell scripting it goes to kernel and kernel executes it on hardware.

If it is not Linux command then mapping of command takes place and GUI sends equivalent command to kernel through shell scripting and kernel executes it on hardware.
If equivalent command is not found then routine is executed through JVM and executed similarly on hardware.

For application software on VOS mapping takes place and executed by kernel on hardware.

IV. MATHEMATICAL MODULE

<table>
<thead>
<tr>
<th>Problem Description</th>
<th>UML Design Observation</th>
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<tr>
<td>Let V be the virtual operating system such that V={I,G,A,C</td>
<td>} where I is set of Interfaces; I={I0,I1,...,In</td>
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</table>

V. CONCLUSION

We have presented virtual operating system, in which we can use more than one operating system at the same time that is combination of windows operating system and Linux. The commands which will be used in windows platform will get executed on Linux platform and therefore the new user need not to be learn Linux command.

Possible applications include data management environments, office information environments, real-time process control environments, and program development environments, to name a few.

REFERENCES
