

A Seminar Report

on

# **CLOUDS-PI**

*by*

**Prashant Kumar**

**Roll No: 71813716H**

*Under the guidance of*

**Dr. Jayashree Rajendra Prasad**



**Sinhgad Institutes**

Department of Computer Engineering  
Sinhgad College of Engineering, Pune-41

*Accredited by NAAC*

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Department of Computer Engineering  
Sinhgad College of Engineering , Pune-41



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## CERTIFICATE

This is to certify that Mr. Prashant Kumar has successfully completed **his** seminar work titled “CLOUDS-PI” at Department of Computer Engineering, SCOE, Pune for the partial fulfillment of the Bachelor Degree of Computer Engineering , Savitribai Phule Pune University, in semester-II, academic Year 2019-2020.

Dr. Jayashree Rajendra Prasad  
Internal Guide

Prof. M . P. Wankhede  
Head  
Department of Computer Engineering

Dr. S.D. Lokhande  
Principal  
Sinhgad College of Engineering

## **Abstract**

The research explained the reason why we need personal cloud storage. This research will show steps on how to build a personal cloud storage by using credit card size Raspberry Pi (minicomputer), which will help the user to enable cloud storage mode to their external hard drive. However, other cloud storage services like Dropbox, Google Drive, and iCloud gives limited amount of storage. This research will help the users to use (1TB) or above size external hard drive to be use and have access anywhere from any device over internet. Also the second part of this research focus on replace the laptops to raspberry pi that lecturers use in the classroom to play PowerPoint slides, and videos at university.

Universities use laptops to plug and play their educational slides and videos. All these laptops price and maintenance cost lot to the university, if we look deeply just for play slides we do not have to buy a laptop which cost \$300 and also the lecturer have to carry the laptops all the times from the faculty to classes, moreover most of the times the laptops are not available. Overcome above statement, all the laptops can be replaced to “Raspberry Pi” which cost \$35 and it does not need any maintenance.

Software-defined networking (SDN) is rapidly transforming the networking ecosystem of cloud-computing datacenters. However, replicating SDN- enabled cloud infrastructures to conduct practical research in this domain requires a great deal of effort and capital expenditure. This article presents the CLOUDS-Pi platform, a small-scale cloud datacenter for doing research on software- defined clouds. As part of it, Open vSwitch is integrated with Raspberry-Pis, low-cost embedded computers, to build up a network of OpenFlow switches. The article provides two use cases and reports on validation and performance evaluation. It also discusses the benefits and limitations of CLOUDS-Pi in particular and SDN in general.

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**Prashant Kumar**  
**Roll no : 71813716H**

## List of Tables

Table No.	Title	Page No.
3.1	Specifications of machines in CLOUDS-Pi.	10
3.2	The transmission time and average bandwidth with and without dynamic flow scheduling.	15

## List of Figures

Figure No.	Title	Page No.
2.1	Cloud Computing Stack (Schuller, 2010)	4
2.2	Image representing the clear idea of Cloud Computing Deployment Models	6
3.1	The different literature sources (Saunders et.al. 2009)	9
3.2	System Architecture of Clouds-Pi	11
3.3	The software stack on the controller node	12
3.4	Sample network traffic in CLOUDS-Pi visualized by the Status Visualizer	13
3.5	Physical-network topologies detected by OpenDaylight	15
3.6	The impact of VM live migration on the bandwidth of a communicating VM pair.	17

## **Acronyms**

SDN	Software Defined Networking
SDC	Software Defined Clouds
VM	Virtual Machine
OVS	Open Vswitch
NAT	Network Address Translation
VPN	Virtual Private Network
ETH	Ethernet
ODL	OpenDaylight

# Contents

	Page No.
<b>Certificate</b>	
<b>Abstract</b>	i
<b>Acknowledgement</b>	ii
<b>List of Tables</b>	iii
<b>List of Figures</b>	iv
<b>Acronyms</b>	v
<b>Chapter-1 Introduction</b>	1
1.1 Motivation	1
1.2 Timeline /evolution	3
1.3 Organization of the report	3
<b>Chapter-2 Literature Review</b>	4
<b>Chapter-3 Methodology</b>	8
3.1 Motivation	8
3.1.1 Data collection	
3.2 System Architecture	9
3.2.1 Physical Infrastructure	
3.2.2 Software	



3.3	Use Cases	
3.3.1	Dynamic Flow Scheduling	
3.3.2	Virtual Machine Management	

<b>Chapter-4</b>	<b>Discussion and Future Direction</b>	18
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<b>Chapter-5</b>	<b>Conclusion</b>	20
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5.1	Conclusion	
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<b>References</b>	21
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