**VISHWAKARMA INSTITUTE OF INFORMATION TECHNOLOGY, PUNE**

**COMPUTER ENGINEERING DEPARTMENT**

**APRIL-MAY 2018**

**Synopsis**



**Group number: 17**

**Group Members :**

1.Pratiksha Kallure-pratikshakallure@gmail.com-8600816226

2. Arati Kaljate-kaljatearati@gmail.com-9665271721

3.Ashwini Kumbhar-kumbharashwini045@gmail.com-7768929679

4. Kajal Mane-kajalshivajimane1@gmail.com-7767827952

**Title :**

Build Openflow Based SDN Enviornment With Controller And Vitual Network.

**Objective :**

Provide a solution that run experiments in our campus networks using SDN network(Controller),if we can figure out then extend the technique to other campuses to benefit to whole community.

**Abstract :**

Traditional network environment require application-specific policies such as security and access control,virtual area network traffic isolation and quality of service to be provisioned across the network one switch at a time. This consumes a significant amount of resources and results in static network that cannot be easily updated as business requirements evolve or new application need to be deployed. In contrast,SDN-enabled networks can dynamically allocate network resources in real time to meet the needs of running applications. Custom built or prepackaged SDN application running on the SDN controller can use input from many sources-including predefined application-specific security and QoS requirements. Physical network statistics. User activity,security threat analysis and so on-to allocate and protect network resources,set access control rules and prioritize traffic in fully dynamic fashion. The open flow switch it is possible to provision the network to treat the packets flows for video,audio and web differently based on user needs and requirements. The idea is provide a better network efficiency ,low bandwidth wastage.In this project we first introduce new architecture for campus networks by leveraging SDN and OpenFlow.

**Briefs about Contents:**

* **Introduction :**

In our project we are SDN based network enviornment.

SDN stands for Software Defined Network.

In that we can separate the control plane from the data plane.

In that have centralized controller which is manage whole network.

In that we are reducing the hardware cost which is required in traditional network.



* **Technical Details :**

C.2 SOFTWARE DEFINED NETWORKING

1. C.2.1Design and Implementation
2. Protocol Options for the Southbound Interface
3. Northbound APIs for Networking Applications

ii. C.2.2 The OpenFlow Protocol

iii.C.2.3 Innovation through SDN based Network Application

1. SDN Network Management and Traffic Engineering
2. Load Balancing for Application Servers
3. Security and Network Access Control
4. SDN Based Network Virtualization

* **Working :**

Creating communication between multiple host using software defined network (Controller) to share data among them. Our project is sharing of packets between multiple host using centralized controller.



Our project execution step, are as follows:

 Create UML diagram of project.

 Create architecture of our system.

 Create all literature survey of our project.

 Implementation of our idea.

* **Applications:**

1.Data centre

2.Large network in oraganization

**References/Bibliography:**

[1] Hyojoon Kim and Nick Feamster, “Improving Network Management with Software Defined Networking”,Georgia Institute of Technology IEEE Communications Magazine • February 2013.

[2]Nick McKeown ,Guru Parulkar ,Tom Anderson,Larry Peterson ,”OpenFlow :Enabling Innovation in Campus Networks”,ACM SIGCOMM Computer Communication Review April 2008.

[3]BROCADE “Software Defined Networking in Campus Network”,White Paper.

[4]Depandra Dhakal,Bishal Pradhan,Sunil Dhimal,”Campus Network using Software Defined Networking”, International Journal of Computer Application ,march 2016.

[5]Wolfgang Braun \* and Michael Menth,”Software-Defined Networking Using OpenFlow: Protocols,Applications and Architectural Design Choices”,Future Internet 2014, 6, 302-336; doi:10.3390/fi6020302.