Prototype Topology SDN for Simple Network Campus

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Abstract

The use of communication networks is increasingly felt increasingly sophisticated. This can be seen with the use of innovative network infrastructure that provides connection services to users. Virtual service network can be a prototype of a software-based network logic in this case is a software-defined network. This software is open source-based or a lot of the paid version. Where this software serves as a bridge between networks that use routers or router software logic. Using a software-defined network on the router logic can be made very flexible and easy to integrate with a stable condition.

Keywords : Software Defined Network, Virtual Service, Router

Background

With current Events, network conditions often become obstacles in delivering the connection. For the first problem we can design the network topology. The computer network is a collection of computers, printers and other equipment are connected in one unit. Information and data moving through wires or wirelessly, allowing users of computer networks can exchange documents and data, print on the same printer and together using hardware / software that is connected to the network. Each computer, printer or peripherals connected to the network are called nodes. A computer network can have two, tens, thousands or even millions of nodes. Computer Network Topology is a term used to describe the way how computers are connected in a network. Topology outlines the actual layout of the hardware topology of the network while also me-breaks down the behavior of the computer on the network from the viewpoint of the operator, in this case the human is the physical topology. A network topology based on the way a number of nodes or a central hub in the form of a network system. The network topology is commonly used: Mess, Star (Star), Bus, Tree, and Ring (Ring). The terms of the network topology refers to the spatial organization of network devices, network cabling (Physical Routing) and the flow of data packets from one dot is connected to another connection point.
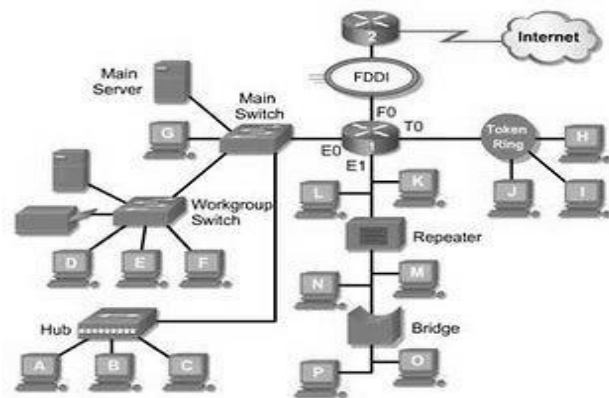

Network connection point can be any device such as a computer system, printer or router that is linked to the network that can send and receive data packets. Broadly speaking, the transmission technology can be divided into two, namely the transmission of point-to-point transmission with relationships and share. Computer network that uses the relationship in point-to-point pair consists of a number of existing computers on a computer network where data packets transmitted from source to destination will pass koputer that mediates the result into a route and its distance is different and requires multiple transmission lines if the number of connection points in large numbers

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Trend Method and Solution SDN

The idea of SDN continues to grow until the year 2011 appearOpenFlow Network Foundation, an organization started by the various companies in the world. Some boards include Google, Yahoo, and NTT. While as a member there CISCO, Juniper, IBM, DELL, HP, etc. The reasons behind the various global IT companies join in OpenFlow Network Foundation due to see the great potential of the transition to the next era of its SDN.
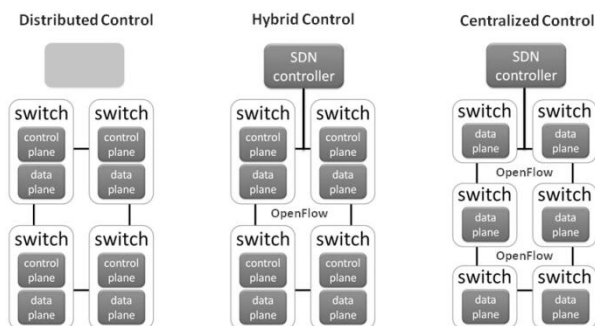

Starting in 2004 coined the idea of the idea of the New Way of Managing Network who wants a new method of network applications. Furthermore, in 2008 the initial idea evolved and gave birth to a concept known as Software Defined Network. Literally can be regarded as a network system whose performance is governed by specific software. As a preliminary prototype software created regulatory network called NOX. NOX is one of the pioneers of SDN is developed using C language development SDN One try pioneered its implementation at Stanford University into the intra-campus network in 2008. Publication of the journal of the results of this implementation introduces the concept of OpenFlow as a form of topology implementations of SDN.

Network Operating System

SDN developments in 2012 more fascinating. It can be said in a few years its development has been popular, and SDN become a global issue in network technology. One reason was because SDN is universal platform without a vendor or a specific product is limited in its implementation. In addition, the implementation can be said to occur SDN

masive due to the support of various IT companies in the world.
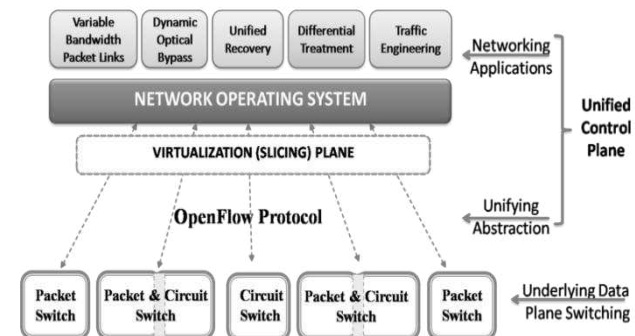
SDN achieve the same abstraction that tidak.Dengan hardware virtualization hardware virtualization, hypervisor inserts himself between the physical components of a computer (motherboard, main bus, processor, memory, etc.) and system operating operasi.Sistem see virtualization components and operate with them, and the hypervisor itself translates the instructions it comes to virtualization components into the instruction of the underlying physical hardware can handle.

As a result, you can move virtual machines to a different computer consisting of different hardware for the hypervisor is the same or compatible. That's because the operating system in a virtual machine must know just how to talk to virtual components, but can not see or interact directly with hardware.AbstraksiThis gives more freedom and the ability to configure and reconfigure computers and servers as ongoing operational needs dictate.
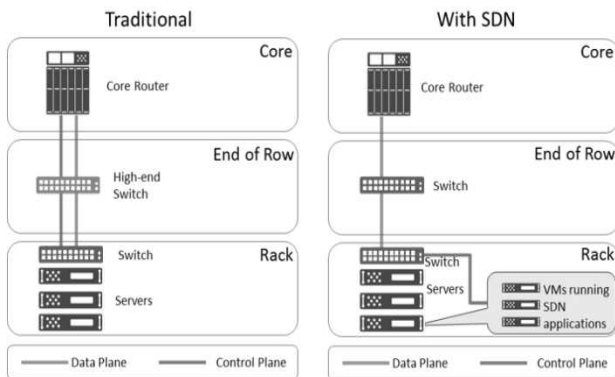
Compare SDN

Basically, SDN taking virtualization phenomenon that has swept the data centers around the world over the past few years and expanded from computer hardware and storage devices to the network infrastructure itself. By incorporating intelligent software layer between network devices (such as switches, routers and network cards) and operating system that speaks to the wire, software defined networking allows IT professionals or administrators to configure the network to use the software it.Not again should he traveled to each physical device and configure-or, in many cases, re-configure the settings.

This abstraction is the same idea in SDN. It just involves a different part of hardware.Jaringan is virtual so that the software can configure how the network is built, directed and configured. While the underlying physical network components still route the actual traffic, where the traffic flow is controlled is called the control plane in the SDN-term move from hardware to software running on it.

OpenSource Virtual Router

SDN evolution of virtualization primarily because of its utility in the public and private cloud scenarios. Running clouds involves a large number of network configuration and planning. Especially in a disaster recovery scenario, it is very valuable to be able to quickly reconfigure a network of software.
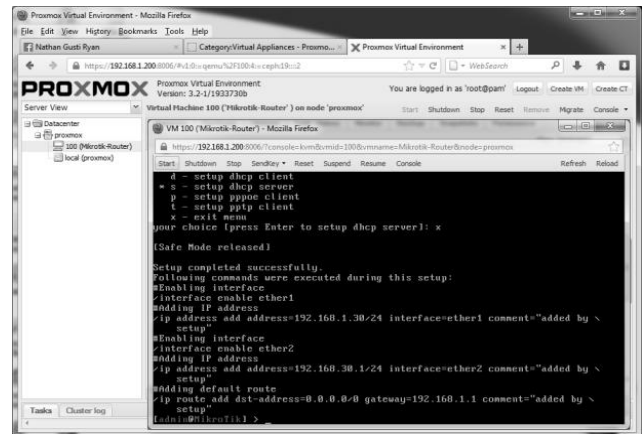
Conclution

In addition, most of the open source implementation of the SDN-or at least based on a widely accepted international standards and thus are supported by a variety of different vendors. It's kind of vendor neutrality is implemented by a set of APIs called OpenFlow.PikirkanOpenFlow as a mechanism behind the engine and apply the SDN. Most tools that allow you to manage and configure virtual networks using OpenFlow to communicate with a variety of physical devices on the network.

In the past, the network may have several different profiles between different vendor capabilities represented in the infrastructure. Having a holistic implementation of SDN enables administrators to manage the entire network using a set of known universal capabilities without having to worry about some of the equipment vendors only support a few specific abilities and not others.

SDN is taking particular advantage of late because it is basically the last frontier of physical devices yet for easier virtualization management and usability. Hardware virtualization has been around for a while, virtualization software is old age, but the network is the last stone has been left unturned in the "virtual" new way of thinking. In addition, the mainstream operating systems began adding direct support to manage and configure the software defined networks. Windows Server 2012 and Windows Server 2012 R2, especially coming both offer increased support for managing the implementation of SDN.

The main problem with SDN is that it is new. Because these infants, many believe SDN implementations are not ready for prime time. Backbone network and perform an important role in the operation of the core and IT companies. Plus,

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given the state a bit patchy from both OpenFlow APIs themselves and also for their vendor support, it stands to reason that you should not plan to rely on network virtualization and implementation of SDN fully at this time. (That said, as a mature OpenFlow interface stacks, and network component vendors decided to fully implement standards-based compatibility SDN, SDNs would appear to be due.)

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