Practical No.7

<u>**Aim</u>**: Implement vlan concept with L2/L3 switches/nexus virtual switching (Titanium VM).</u>

<u>Steps:</u>

Load the .vmx file of titanium vm and power on the virtual machine



<u>Step1:</u>

When you Open Titanium in VMware, the ancient boot loader problem occurs



Step 2: To solve this problem, Click on Edit virtual machine settings. : select Serial port (named pipe). Remove the serial port 2 and use only serial port .Select one end as a server and other end as a application Copy paste the name in text file for later use \\.\pipe\com_1

Virtual Machine Settings	
Hardware Options	
Device Summary Image: Memory 2 GB Image: Processors 1 Image: Hard Disk (SCSI) 2 GB (Preallocated) Image: Network Adapter Host-only Image: Network Adapt Custom (VMnet2) Image: Network Adapt Custom (VMnet3) Image: Network Adapt Custom (VMnet4) Image: Serial Port Using named pipe \\.pip Image: Display Auto detect	Pevice status ✓ Connected ✓ Connect at power on Connection ● Use physical serial port: COM1 ● Use output file: ● Use named pipe: \\\.\pipe\com_1 This end is the server. The other end is an application. I/O mode ✓ Yield CPU on poll Allow the guest operating system to use this serial port in polled mode (as opposed to interrupt mode).
Add [Remove
	OK Cancel Help

<u>Step 3:</u> Now install the putty and open it with run as Administrator. Then select the serial and paste the output file name in serial line-\\.\pipe\com_1

Titanium-VM-5.1(2) - VMware W	orkstation		Contraction of the local division of the loc		
File Edit View VM Tabs	Help				
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Library ×	Home X Titanium-VM-5.1(2) X				
C Type here to search					
 My Computer Titanium-VM-5.1(2) 		PuTTY Configuration	?	2 x	
Shared VMs		Catagoor			
	Loa	- Session	Basic options for your PuTTY session		
		Logging	Specify the destination you want to connect to		
	Loa	Ieminal Keyboard	Serial line Speed	id	
	WAR	Bell	\\.\pipe\com_1 9600	limited!	
	-	Features ⊡-Window	Connection type: ◯ Raw ◯ Telnet ◯ Rlogin ◯ SSH ●) Serial	
		Appearance	Load, save or delete a stored session		
		Translation	Saved Sessions		
		Selection			
		Colours	Default Settings	oad	
		Data	Sa	Save	
		Proxy Telnet	De	lelete	
		Rlogin			
		⊞-SSH			
		John	Close window on exit: Always Never Only on clean exit	xt	
		About Help	Open Ca	ance	
To direct input to this VM, click inside	e or press Ctrl+G.				
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<u>Step 4:</u>

The terminal opens

_ _ [] \\.\pipe\com_1 - PuTTY ..done Sun Oct 8 10:38:27 UTC 2017 Load plugins that defined in image conf: /isan/plugin img/img.conf Loading plugin 0: core plugin... num srgs 1 0: swid-core-titanium, swid-core-titanium ty ma num srgs 1 0: swid-suple-ks, swid-suple-ks INIT: Entering runlevel: 3 Mounting other filesystems: [OK] 2017 Oct 8 10:38:43 switch %\$ VDC-1 %\$ %PLATFORM-2-PLUGIN ABSENT: Module in slo t2 (sw_card_id=50) has missing plugin 2017 Oct 8 10:38:43 switch %\$ VDC-1 %\$ %PLATFORM-2-MOD PWRDN: Module 2 powered down (Serial number) 2017 Oct 8 10:38:45 switch %\$ VDC-1 %\$ %PLATFORM-2-CHASSIS_CLKMODOK: Chassis cl ock module A ok 2017 Oct 8 10:38:45 switch %\$ VDC-1 %\$ %PLATFORM-2-CHASSIS CLKSRC: Current chas sis clock source is clock-A 2017 Oct 8 10:39:12 switch %\$ VDC-1 %\$ %PLATFORM-2-MOD DETECT: Module 2 detecte d (Serial number) Module-Type Titanium Ethernet Module Model 2017 Oct 8 10:39:12 switch %\$ VDC-1 %\$ %PLATFORM-2-MOD PWRUP: Module 2 powered up (Serial number)

<u>Step 5</u>: Enter the username as admin and password as cisco. Then switch# appears indicating that command can be entered.

	\\.\pipe\com_1 - PuTTY	_	x
	Last login: Sun Oct 8 10:41:38 on ttyS0		~
	Cisco NX-OS Software		
oad	Copyright (c) 2002-2010, Cisco Systems, Inc. All rights reserved.		
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	GNU Lesser General Public License. A copy of each such license is		=
	available at		
	http://www.gnu.org/licenses/gpl.html and		
	http://www.gnu.org/licenses/lgpl.html		
	switch#		-

<u>Step 6:</u> Enter the command 'show version' to view the version of the nexus software.



<u>Step 7:</u> Enter the command 'show interface brief ' to view the details of interfaces.

🛃 \\.\pipe	e\com_1 -	PuTTY						x
Core switch#	Plugin, show i	Ethern .nterfac	net Plu ce brig	ugin ef				*
Port	VRF	2	Status	IP Add	ress		Speed	MTU
mgmt0		ι	1p					1500
Etherne t Interfa	 t ce	VLAN	Type	Mode	Status	Reason	Speed	Por Ch
 Eth2/1			eth	routed		Administratively down	auto (D	
$E \pm h^2/2$			eth	routed	down	Administratively down	auto (D	,
Eth2/3			eth	routed	down	Administratively down	auto (D	
Eth2/4			eth	routed	down	Administratively down	auto (D)
Eth2/5			eth	routed	down	Administratively down	auto (D)
Eth2/6			eth	routed	down	Administratively down	auto (D) (11)
Eth2/7			eth	routed	down	Administratively down	auto (D)
Eth2/8			eth	routed	down	Administratively down	auto (D) =
Eth2/9	_		eth	routed	down	Administratively down	auto (D) (
switch#								-

Step 8: Enter the command 'sh vlan' to check the status of the vlans created.

🖉 \\.\pipe\c	om_1 - PuTTY							x
Eth2/5		eth	routed down	Admi	nistratively	down	auto (D)	A
Eth2/6		eth	routed down	Admi	nistratively	down	auto (D)	
Eth2/7		eth	routed down	Admi	nistratively	down	auto (D)	
Eth2/8		eth	routed down	Admi	nistratively	down	auto (D)	
Eth2/9		eth	routed down	Admi	nistratively	down	auto (D)	
switch# s	now vlan							
VLAN Name			S	tatus	Ports			
1 defa	ult		a	ctive				
VLAN Type	Vlan-mod							
Remote SP	AN VLANS							
Primary	Secondary	Туре	Po	rts				
								E

Step 9: Configure the terminal and enter the command to create vlan with id '10' and name 'ritu'. By default the status of vlan is active. TO CREATE VLAN 10 WITH NAME RITU switch# conf t switch(config)# vlan 10 switch(config-vlan)# name ritu switch(config-vlan)# state active switch(config-vlan)# state active switch(config-vlan)# exit TO CREATE VLAN 20 WITH NAME IT switch(config)# vlan 20 switch(config-vlan)# name it switch(config-vlan)# state active switch(config-vlan)# state active switch(config-vlan)# state active switch(config-vlan)# exit switch(config-vlan)# exit

🗗 \\.\pip	e\com_1 - PuTTY				
VLAN Ty	pe Vlan-mod	e			
1 en	et CE				
ac _{Remote}	SPAN VLANS				
Primary	Secondary	Туре	Ports		
Switch# Enter c	conf t onfiguration	commands, c	one per line. End	with CNTL/Z.	
switch(config)# vla config-vlan)	n 10 # name ritu			
switch(config-vlan)	# state acti	ive		
switch(config-vlan)	# exit			
switch(config) # vla	n 20			
switch (config-vlan)	# name it # state acti	770		-
switch(config-vlan)	# state acti	LVE		
switch (config)#				

Step 11: Enter the command 'sh vlan' to check the status of the vlans created.

یا∖ ⊈ے	\pipe\com_1 - PuTTY									
swit swit	switch(config)# exit switch# sh vlan									
VLAN	Name	Status	Ports							
a(1 IRI 10 20	default ritu it	active active active active								
VLAN	Type Vlan-mode									
1 10 20	enet CE enet CE enet CE									
Remo	te SPAN VLANs									
Prim	ary Secondary Type P	Ports								
				E						
swit	ch#			*						

<u>Step 12:</u> Enter the following command to check the vlan's created in the id range '1-55'. switch# show running-config vlan 1-55



Step 13: Enter the command 'show module' to verify the status(presence) of a module at any time.

ame ritu						
n 20 ame it						*
ch# sho	w module					
Ports	Module-T	ype		Model	Status	
0 9	Unknown 1 Titanium	Module Etherne	t Module	TITANIUM	active * ok	
Sw		Hw	World-Wide-Name	(s) (WWN)		
5.1(2)		0.14081				
NA		0.0				
MAC-Ad	dress(es)			Serial-Num		
00-19- 02-00-	07-6c-5a-a 0c-00-02-0	a8 to 00 D0 to 02	 -19-07-6c-62-a8 -00-0c-00-02-80	 T50569F000C NA		
is term	inal sess	ion				=
	Ch# sho Ports 9 Sw 5.1(2) NA MAC-Ad 00-19- 02-00- ils term ch#	Ch# show module Ports Module-T; 	ch# show module Ports Module-Type 0 Unknown Module 9 Titanium Etherne Sw Hw	ch# show module Ports Module-Type 0 Unknown Module 9 Titanium Ethernet Module Sw Hw World-Wide-Name 5.1(2) 0.14081 NA 0.0 MAC-Address(es)	Ach# show module Model Ports Module-Type Model 0 Unknown Module TITANIUM 9 Titanium Ethernet Module TITANIUM Sw Hw World-Wide-Name(s) (WWN) 5.1 (2) 0.14081 NA 0.0 MAC-Address(es) Serial-Num	Status Model Status 0 Unknown Module TITANIUM active * 9 Titanium Ethernet Module ok ok Sw Hw World-Wide-Name(s) (WWN)

Step 14: Enter the command 'feature interface-vlan' to enable the VLAN interface mode and configure the ip address.

switch# conf t

switch(config)# feature interface-vlan

switch(config)# interface vlan 10

switch(config-if)# ip address 192.168.1.1 255.255.255.0
switch(config-if)# exit

switch(config)# interface vlan 20

switch(config-if)# ip address 192.168.2.1 255.255.255.0
switch(config-if)# exit
switch(config)# exit



Step 15: Enter the command 'show interface brief ' to view

the details of interfaces.

Step 16: Enter the command 'switchport mode access' to set the access port to carry traffic for a different vlan. switch# conf t switch(config)# interface Eth2/1 switch(config-if)# switchport switch(config-if)# switchport mode access switch(config-if)# switchport access vlan 10 switch(config-if)# exit switch(config)# exit switch(config)# exit switch(config)# interface eth2/2 switch(config)# interface eth2/2 switch(config-if)# switchport switch(config-if)# switchport

switch(config-if)# switchport access vlan 20 switch(config-if)# exit switch(config)# exit

	🛃 \\.\pipe\com_1 -	PuTTY							×		
	Eth2/3		eth	routed	down	Administratively	down	auto (D)	*	
	Eth2/4		eth	routed	down	Administratively	down	auto (D)		
Loac	Eth2/5		eth	routed	down	Administratively	down	auto (D)		
	Eth2/6		eth	routed	down	Administratively	down	auto (D) (
	Eth2/7		eth	routed	down	Administratively	down	auto (D) (
Loat	Eth2/8		eth	routed	down	Administratively	down	auto (D) (
JARI	Eth2/9		eth	routed	down	Administratively	down	auto (D) (
-	switch# conf :	t									
	Enter configu	ration	comman	ds, one	per li	ne. End with CNTL,	/Z.				
	<pre>switch(config)# interface Eth2/1</pre>										
	switch(config-if) # switchport										
	switch(config-if) # switchport mode access										
	switch(config-if)# switchport access vlan 10										
	switch(config-if)# exit										
	switch(config) # exit										
	switch# conf 1	t									
	Enter configu:	ration	comman	ds, one	per li	ne. End with CNTL,	Ζ.				
	switch (config))# inte	rface (eth2/2							
	switch (config-	-if)# s	witchp	ort							
	switch (config-	-if)# s	witchp	ort mode	e acces	3					
	switch (config-	-if)‡ s	witchp	ort acce	ess vla	n 20					
	switch (config-	-if)# e	xit							Ξ	
	switch (config))# exit									
	switch#									Ŧ	

Step 17: Enter the command 'show interface brief ' to view the details of interfaces.

🛃 \\.\pip	oe∖com_1 -	PuTTY							x
switch switch	(config) # show i	# exit int brie	f						*
Port	VRF	£	Status	IP Addı	ress			Speed	MTU
mgmt0		l	ıp						1500
Etherne		VLAN	Туре	Mode	Status	Reason		Speed	Por
t Interfa #	ace								Ch
Eth2/1		10	eth	access	down	Administratively	down	auto (D)	
Eth2/2		20	eth	access	down	Administratively	down	auto (D)	
Eth2/3			eth	routed	down	Administratively	down	auto(D)	
Eth2/4			eth	routed	down	Administratively	down	auto(D)	
Eth2/5			eth	routed	down	Administratively	down	auto (D)	
Eth2/6			eth	routed	down	Administratively	down	auto (D)	
Eth2/7			eth	routed	down	Administratively	down	auto (D)	
Eth2/8			eth	routed	down	Administratively	down	auto (D)	
Eth2/9			eth	routed	down	Administratively	down	auto (D)	
switch	Ŧ								*

Step 18: Enter the command 'sh vlan' to check the status of the vlans created.

الا 🔁	\pipe\c	om_1 - PuTTY								×	
Eth2 swit	/9 ch# s	 h vlan	eth	routed	down	Admir	nistratively	down	auto (D))	Â
VLAN	Name				St	atus	Ports				
1	defa	ult			ac	tive					
10	ritu				ac	tive	Eth2/1				
20	lt				ac	tive	Eth2/2				
VLAN	Type	Vlan-mo	de								
1	enet	CE									
10	enet	CE									
20	enet	CE									
Remo	te SP	AN VLANs									
Prim	ary	Secondary	Type		Por	ts					
											_
											Ξ
swit	ch#										-