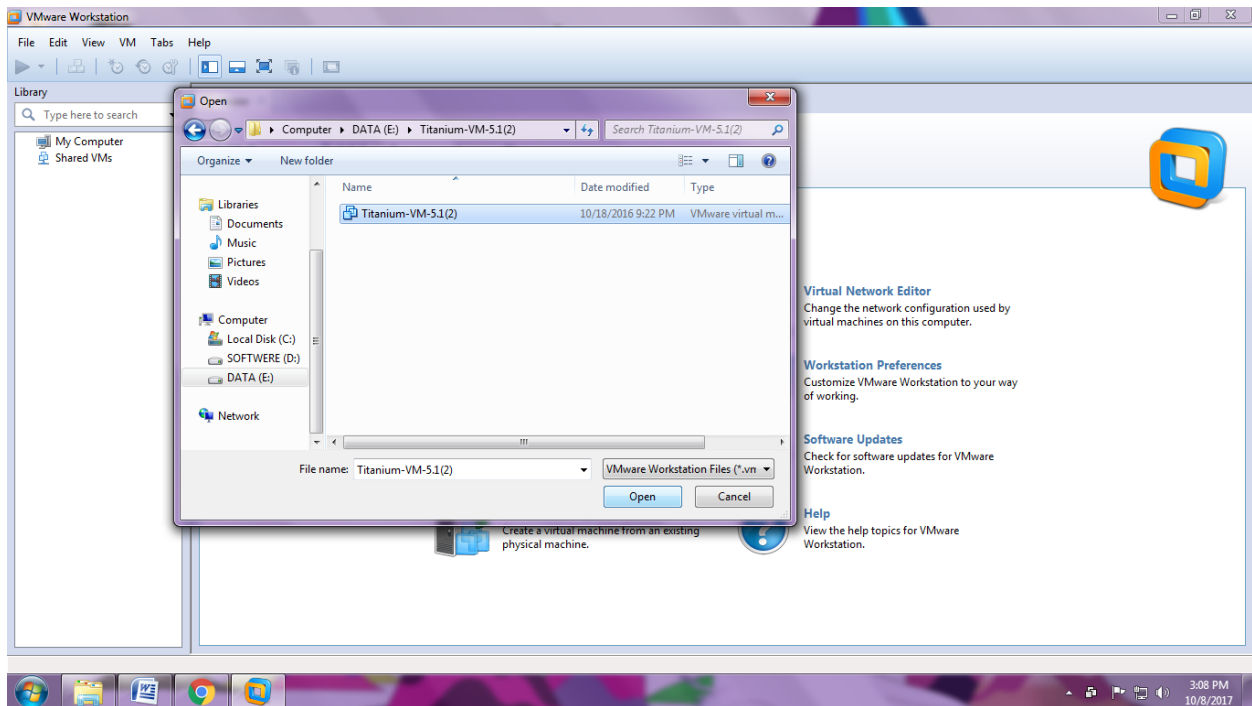


Practical No.7

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

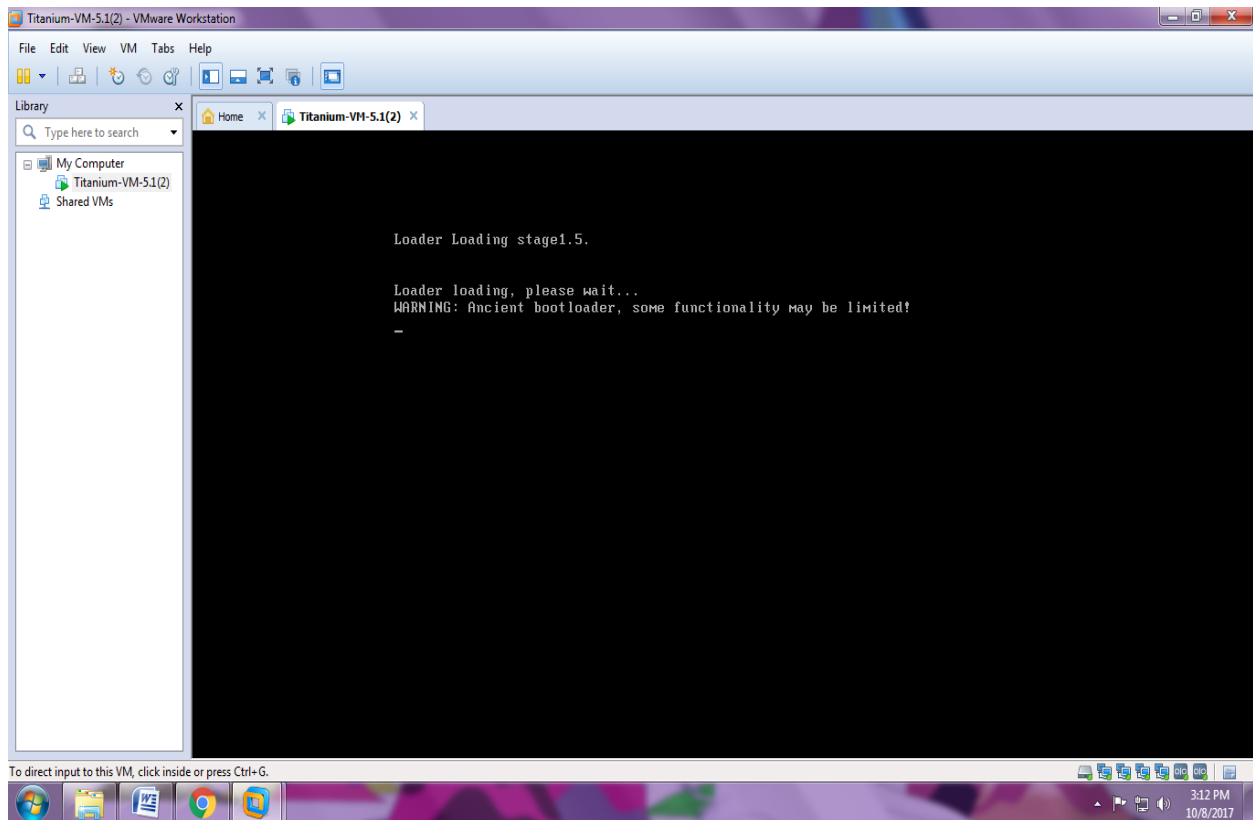
Steps:

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

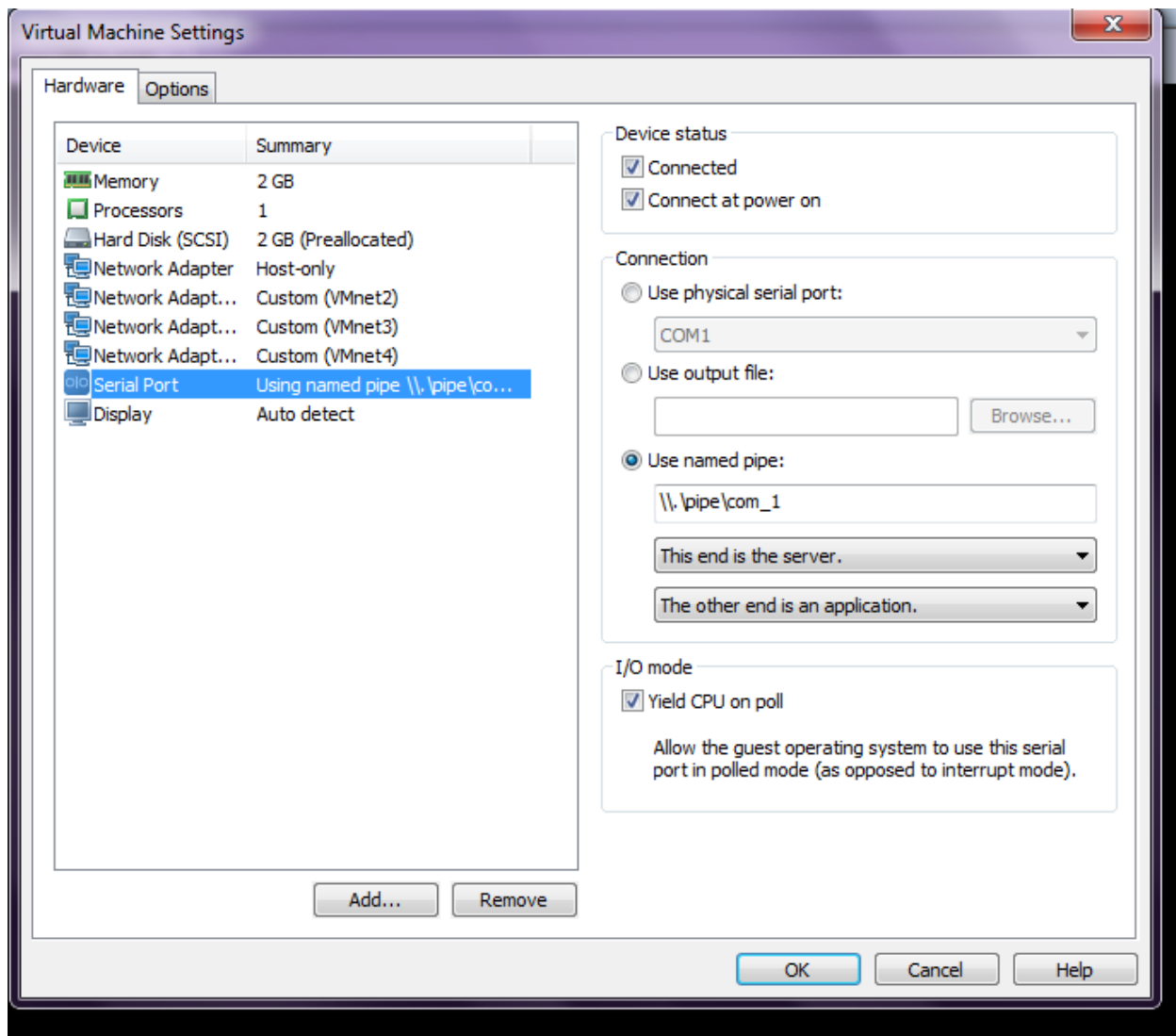


Step1:

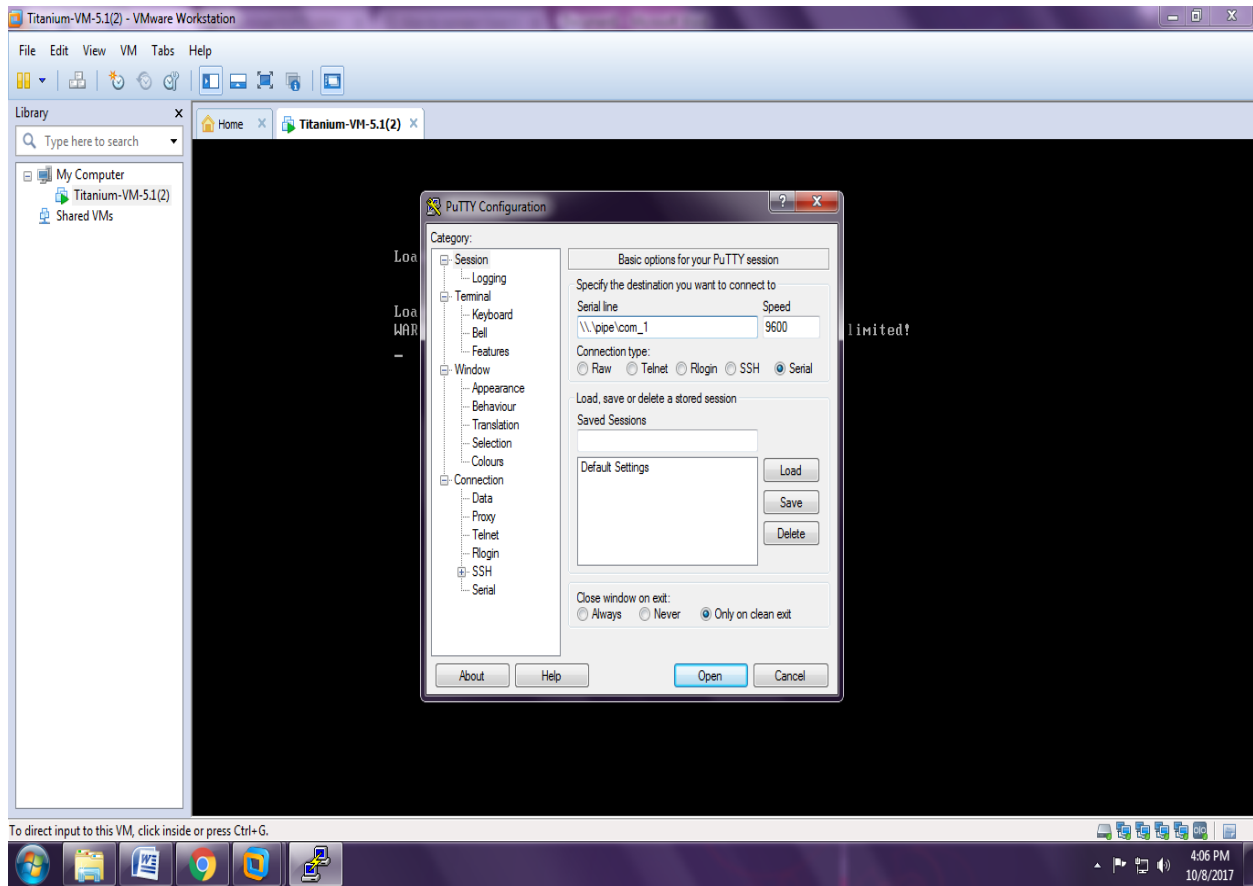
When you Open Titanium in VMware, the ancient boot loader problem occurs



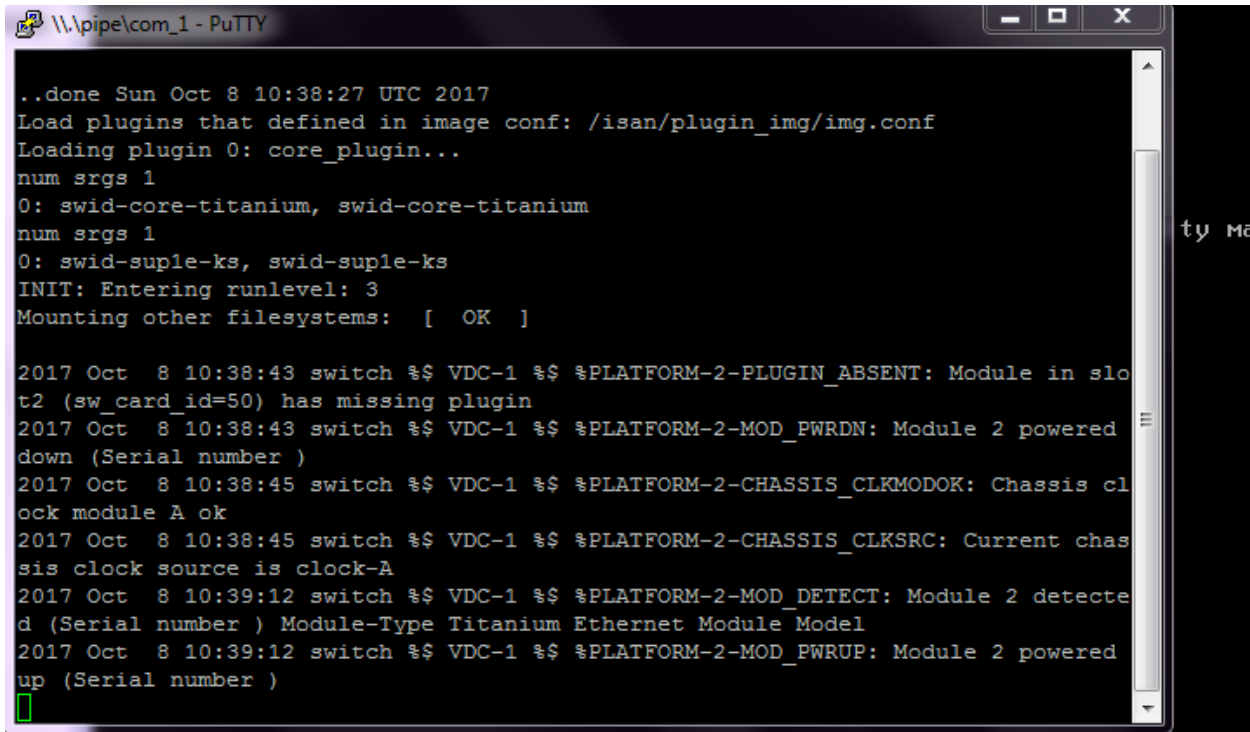
Step 2: To solve this problem, Click on Edit virtual machine settings. : select Serial port (named pipe). Remove the serial port 2 and use only serial port .Select one end as a server and other end as a application Copy paste the name in text file for later use `\\.\\pipe\\com_1`



Step 3: 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



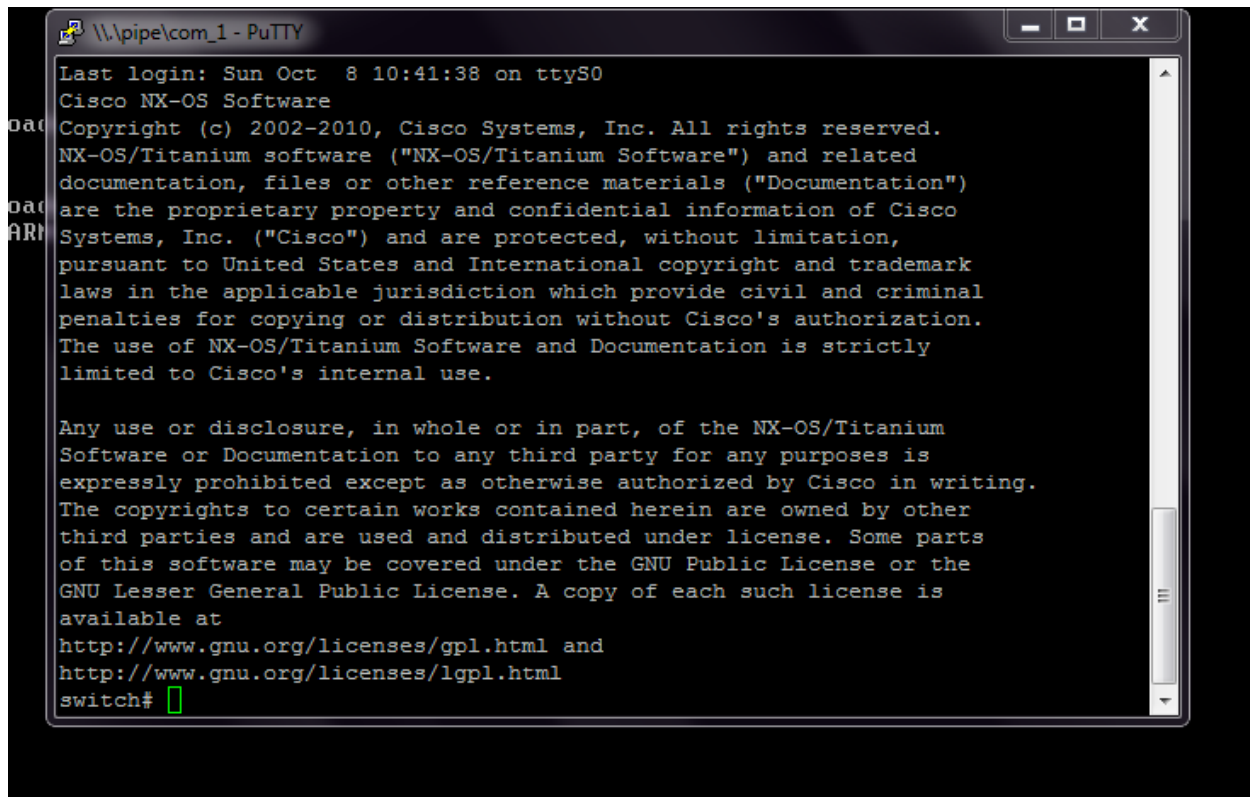
Step 4:
The terminal opens



```
..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
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 slot
2 (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 )
```

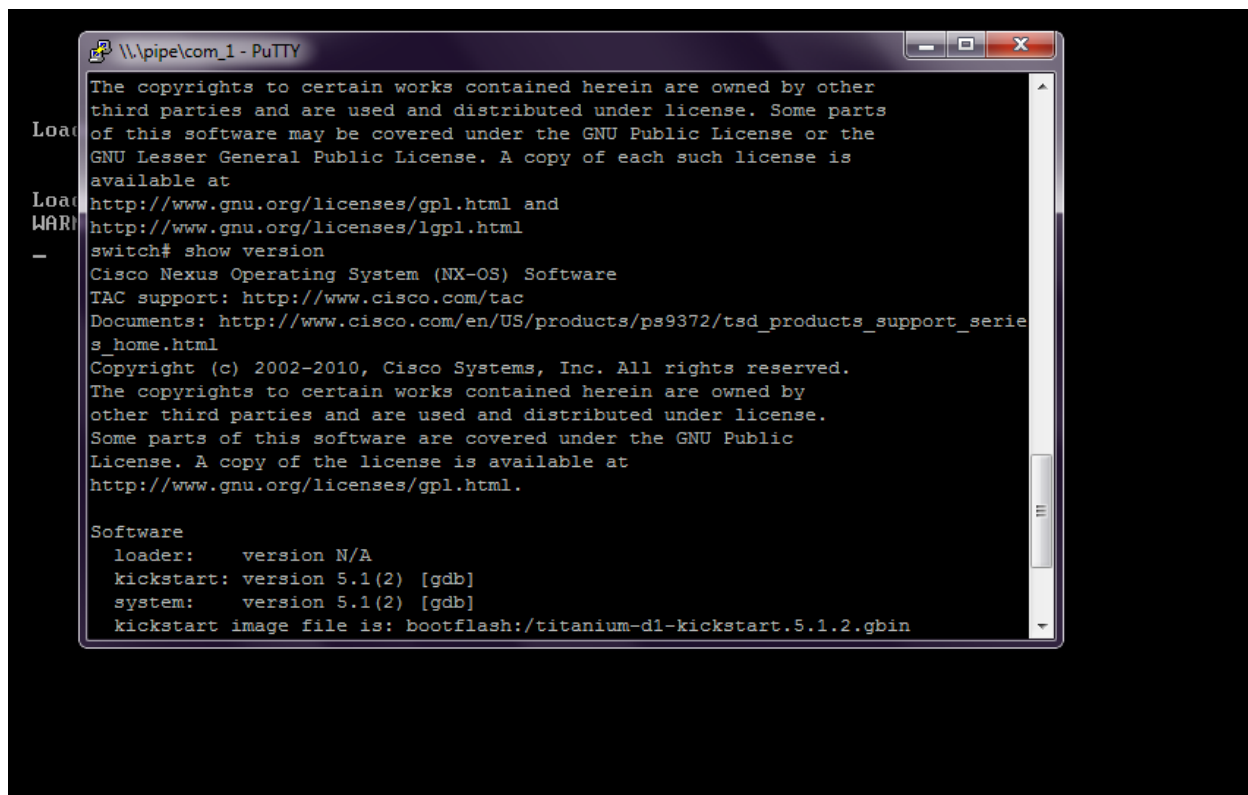
Step 5 : Enter the username as admin and password as cisco. Then switch# appears indicating that command can be entered.

A screenshot of a PuTTY terminal window titled "\\pipe\com_1 - PuTTY". The terminal displays the following text:

```
Last login: Sun Oct  8 10:41:38 on ttyS0
Cisco NX-OS Software
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third parties and are used and distributed under license. Some parts
of this software may be covered under the GNU Public License or the
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#
```

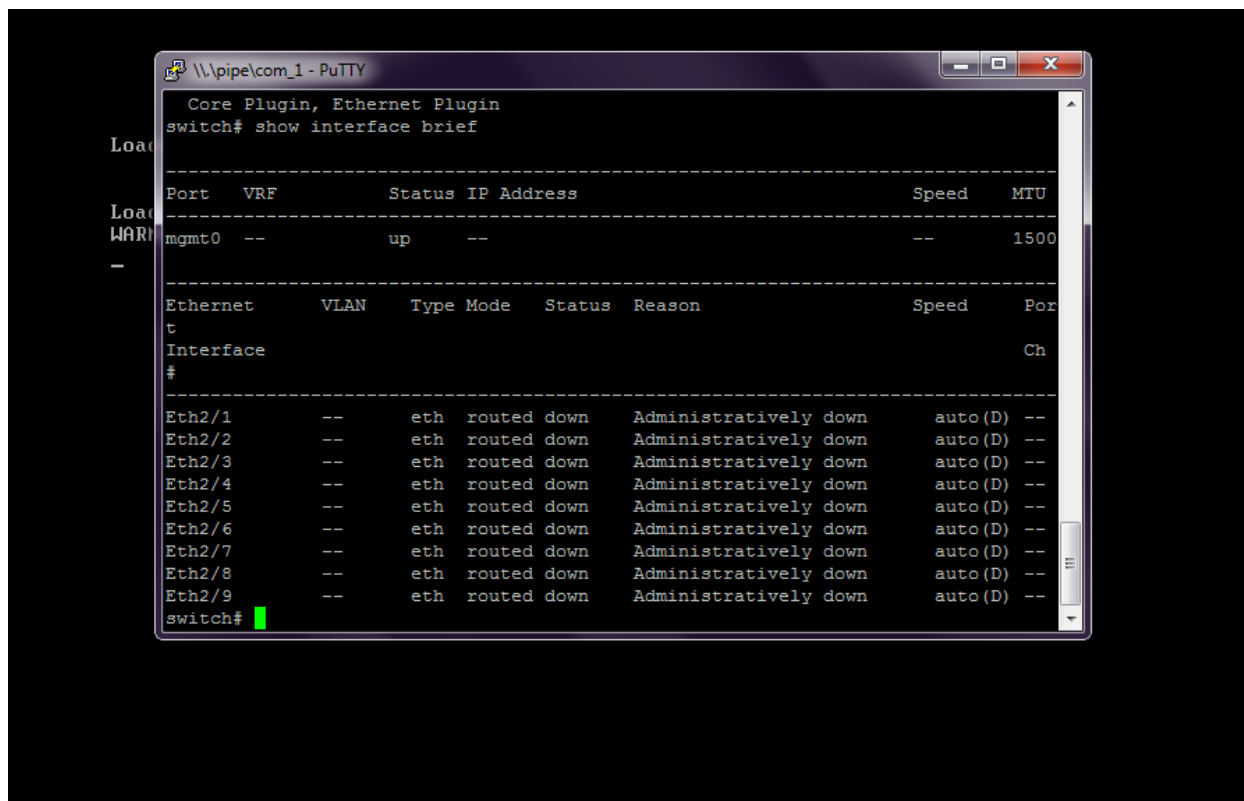
Step 6: Enter the command 'show version' to view the version of the nexus software.



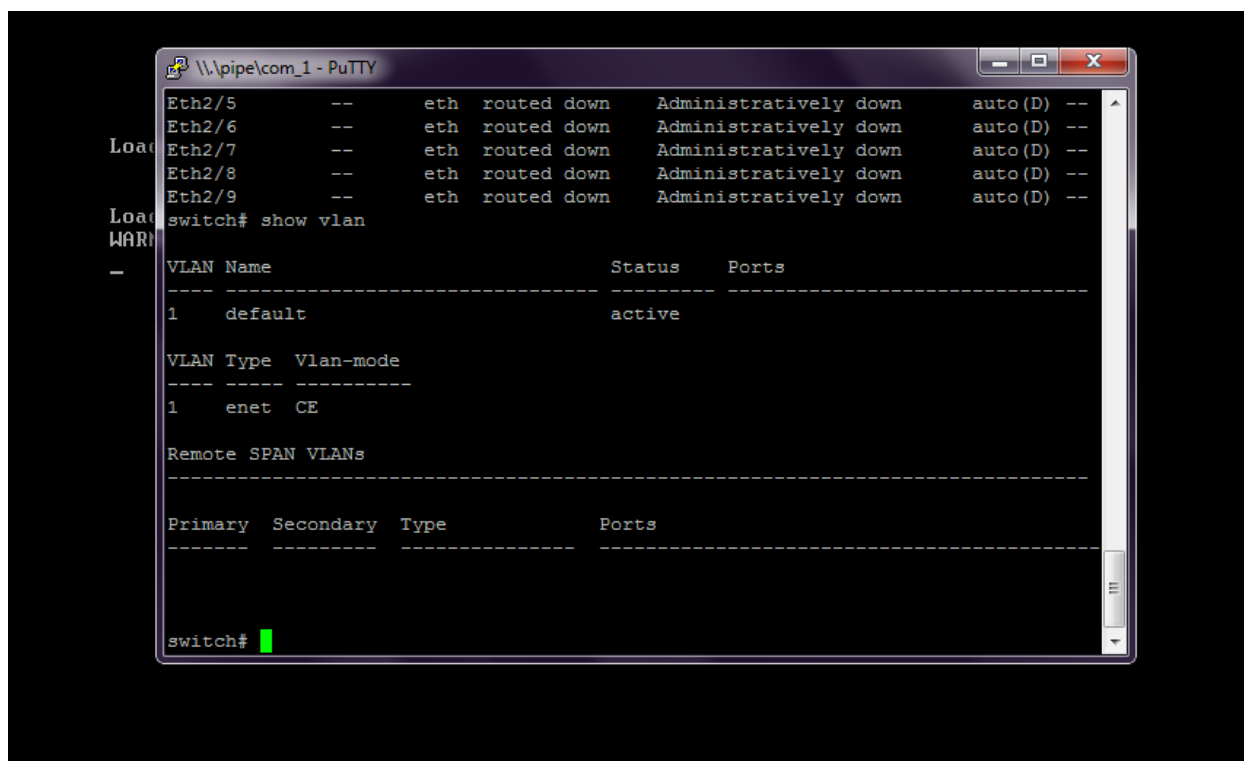
```
\\pipe\com_1 - PuTTY
The copyrights to certain works contained herein are owned by other
third parties and are used and distributed under license. Some parts
of this software may be covered under the GNU Public License or the
GNU Lesser General Public License. A copy of each such license is
available at
http://www.gnu.org/licenses/gpl.html and
http://www.gnu.org/licenses/lgpl.html
switch# show version
Cisco Nexus Operating System (NX-OS) Software
TAC support: http://www.cisco.com/tac
Documents: http://www.cisco.com/en/US/products/ps9372/tsd_products_support_series_home.html
Copyright (c) 2002-2010, Cisco Systems, Inc. All rights reserved.
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other third parties and are used and distributed under license.
Some parts of this software are covered under the GNU Public
License. A copy of the license is available at
http://www.gnu.org/licenses/gpl.html.

Software
  loader:    version N/A
  kickstart: version 5.1(2) [gdb]
  system:    version 5.1(2) [gdb]
  kickstart image file is: bootflash:/titanium-d1-kickstart.5.1.2.gbin
```

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



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



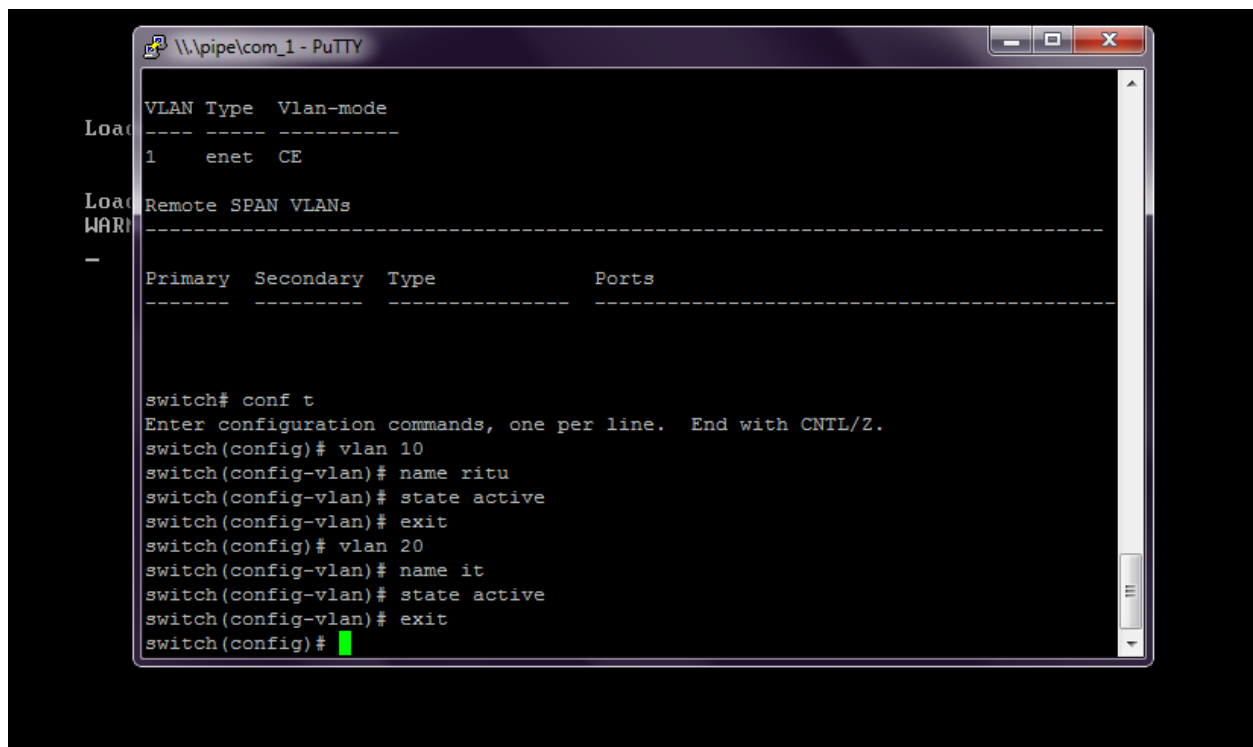
Step 9: Configure the terminal and enter the command to create vlan with id '10' and name 'ritu'. By default the status of vlan is active.

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)# 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)# exit
switch(config)# exit
```

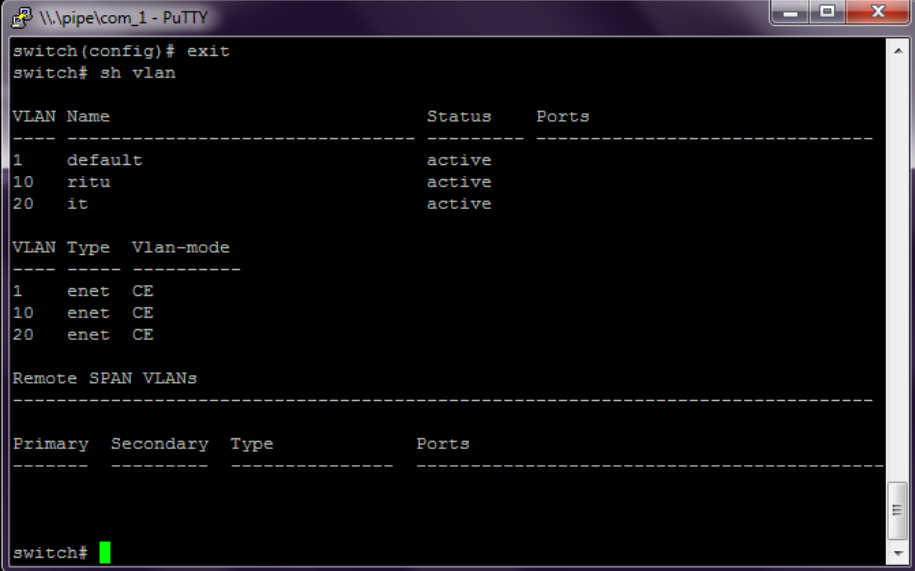


The screenshot shows a PuTTY terminal window titled "\\pipe\com_1 - PuTTY". The terminal displays the following output:

```
Load
VLAN Type  Vlan-mode
-----
1      enet  CE

Load
WARN
Remote SPAN VLANs
-----
Primary  Secondary  Type          Ports
-----
switch# conf t
Enter configuration commands, one per line.  End with CNTL/Z.
switch(config)# vlan 10
switch(config-vlan)# name ritu
switch(config-vlan)# state active
switch(config-vlan)# exit
switch(config)# vlan 20
switch(config-vlan)# name it
switch(config-vlan)# state active
switch(config-vlan)# exit
switch(config)#
```

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



```
switch(config)# exit
switch# sh vlan
VLAN Name                Status    Ports
-----
1    default                 active
10   ritu                    active
20   it                       active

VLAN Type  Vlan-mode
-----
1    enet    CE
10   enet    CE
20   enet    CE

Remote SPAN VLANs
-----
Primary  Secondary  Type      Ports
-----
```

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

```
Load
Load
WARN
-
10 enet CE
20 enet CE

Remote SPAN VLANs
-----
Primary Secondary Type Ports
-----

switch# show running-config vlan 1-55

!Command: show running-config vlan 1-55
!Time: Sun Oct 8 10:55:11 2017

version 5.1(2)
vlan 1
vlan 10
    name ritu
vlan 20
    name it
switch#
```

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

```
Load
Load
WARN
-
    name ritu
vlan 20
    name it

switch# show module
Mod Ports Module-Type Model Status
-----
1 0 Unknown Module TITANIUM active *
2 9 Titanium Ethernet Module ok

Mod Sw Hw World-Wide-Name(s) (WWN)
-----
1 5.1(2) 0.14081 --
2 NA 0.0 --

Mod MAC-Address(es) Serial-Num
-----
1 00-19-07-6c-5a-a8 to 00-19-07-6c-62-a8 T50569F000C
2 02-00-0c-00-02-00 to 02-00-0c-00-02-80 NA

* this terminal session
switch#
```

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
```

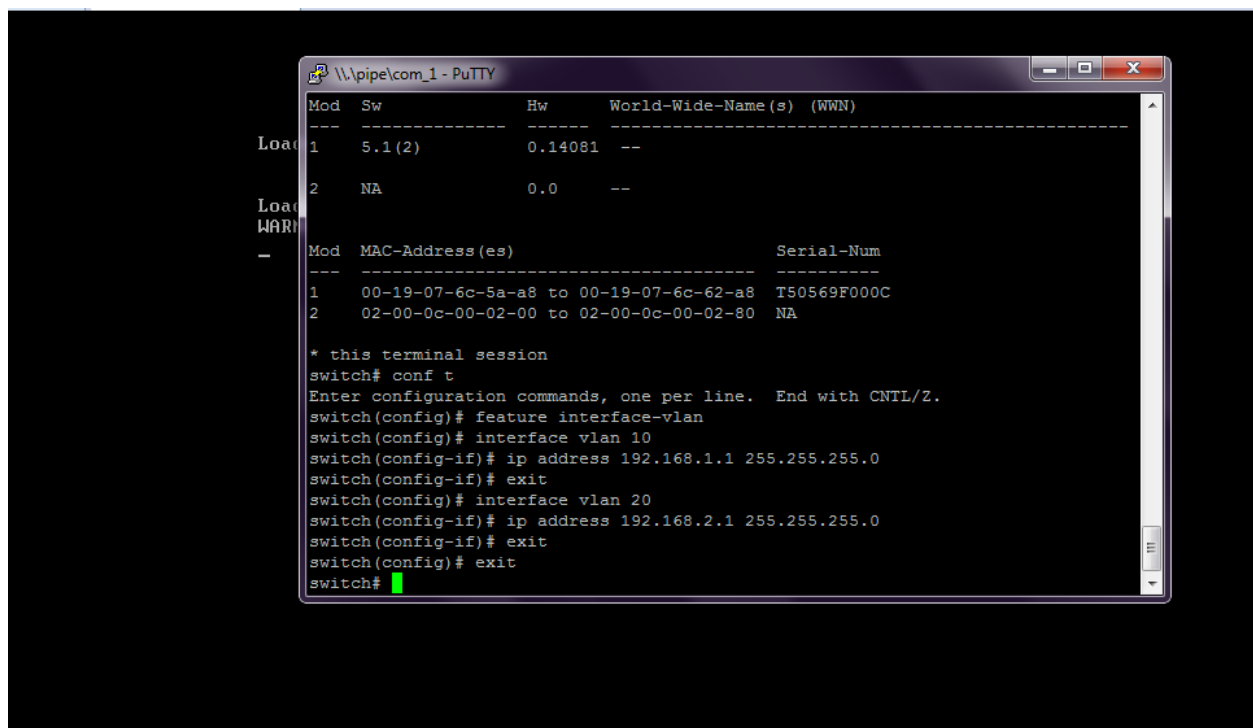
```
switch(config-if)# exit
```

```
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
```



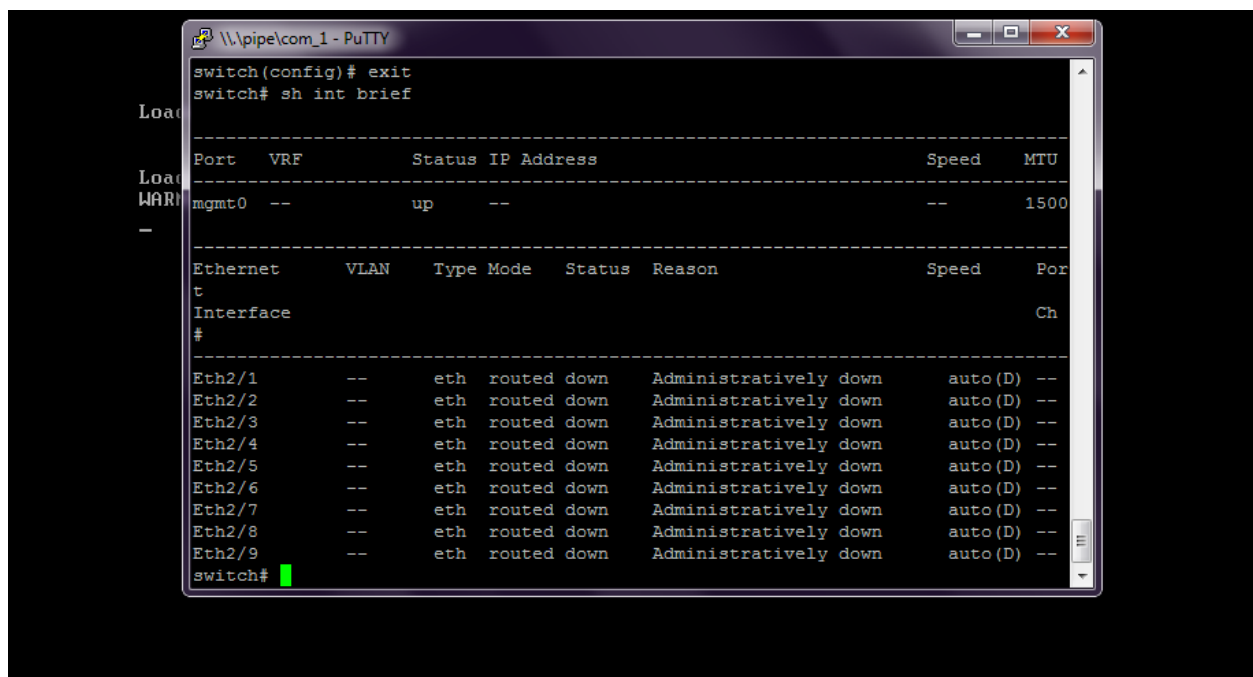
The screenshot shows a PuTTY terminal window titled '\\pipe\com_1 - PuTTY'. The terminal displays the following output:

```
Mod Sw Hw World-Wide-Name (s) (WWN)
-----
Load 1 5.1(2) 0.14081 --
Load 2 NA 0.0 --
WARN
- Mod MAC-Address(es) Serial-Num
-----
1 00-19-07-6c-5a-a8 to 00-19-07-6c-62-a8 T50569F000C
2 02-00-0c-00-02-00 to 02-00-0c-00-02-80 NA

* this terminal session
switch# conf t
Enter configuration commands, one per line. End with CNTL/Z.
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
switch#
```

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

the details of interfaces.



The screenshot shows a PuTTY terminal window titled "\\pipe\com_1 - PuTTY". The terminal output is as follows:

```
switch(config)# exit
switch# sh int brief
```

Port	VRF	Status	IP Address	Speed	MTU
mgmt0	--	up	--	--	1500

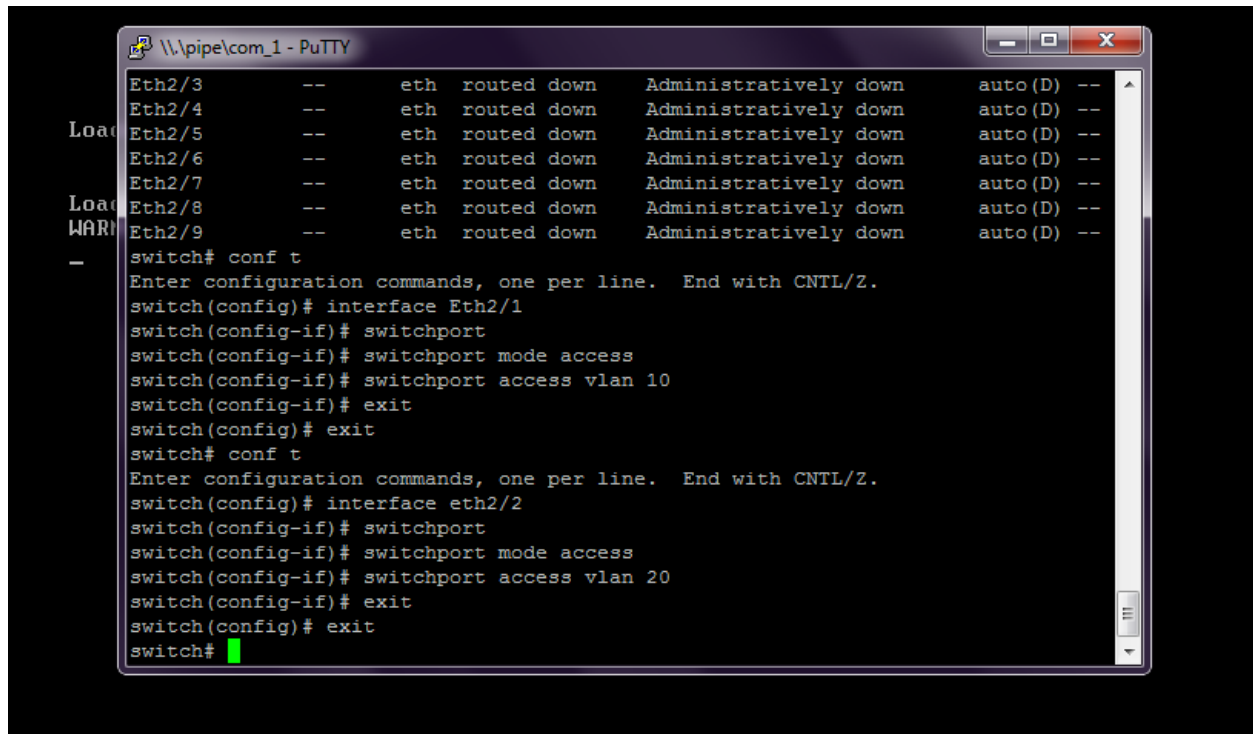
Ethernet Interface #	VLAN	Type	Mode	Status	Reason	Speed	Port Ch
Eth2/1	--	eth	routed	down	Administratively down	auto (D)	--
Eth2/2	--	eth	routed	down	Administratively down	auto (D)	--
Eth2/3	--	eth	routed	down	Administratively down	auto (D)	--
Eth2/4	--	eth	routed	down	Administratively down	auto (D)	--
Eth2/5	--	eth	routed	down	Administratively down	auto (D)	--
Eth2/6	--	eth	routed	down	Administratively down	auto (D)	--
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 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# conf t
switch(config)# interface eth2/2
switch(config-if)# switchport
switch(config-if)# switchport mode access
```

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



The screenshot shows a PuTTY terminal window titled "\\pipe\com_1 - PuTTY". The terminal displays the following output:

```
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# conf t
Enter configuration commands, one per line.  End with CNTL/Z.
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# conf t
Enter configuration commands, one per line.  End with CNTL/Z.
switch(config)# interface eth2/2
switch(config-if)# switchport
switch(config-if)# switchport mode access
switch(config-if)# switchport access vlan 20
switch(config-if)# exit
switch(config)# exit
switch#
```

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

```

switch(config)# exit
switch# show int brief
-----
Port      VRF      Status IP Address      Speed  MTU
-----
mgmt0    --      up      --              --    1500
-----
Ethernet  VLAN    Type Mode   Status Reason          Speed  Por
Interface                                #          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#

```

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

```

Eth2/9    --      eth  routed  down    Administratively down    auto(D) --
switch# sh vlan
-----
VLAN Name          Status    Ports
-----
1    default          active
10   ritu             active    Eth2/1
20   it               active    Eth2/2
-----
VLAN Type  Vlan-mode
-----
1    enet   CE
10   enet   CE
20   enet   CE
-----
Remote SPAN VLANs
-----
Primary  Secondary  Type          Ports
-----
switch#

```

