Ascend/Cisco 250X Interoperability II

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1.0 Introduction

This technical brief describes how to configure IP routing between Ascend Pipelines and Cisco 2500-series routers **without assuming an imaginary wan address** on ascend routers. It was developed from various problems solved using Pipeline 50/130 and Cisco 250x in frame relay and ISDN networks.

This technical brief assumes knowledge of IP routing and differences between interface-based routing and system-based routing. It also assumes no problem in physical and data link layers

2.0 Scenario

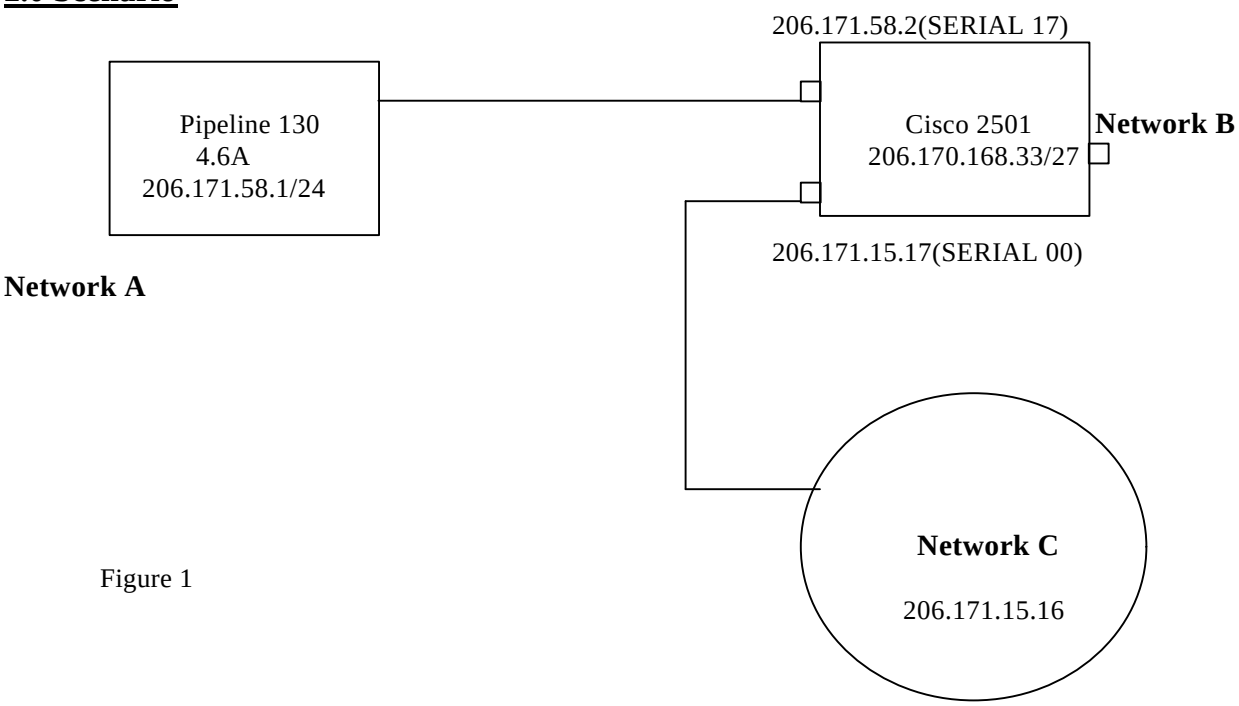


Figure 1

Pipeline Settings		Cisco Settings
my address	= 206.171.58.1/24	ip route 206.171 58.0 255.255.255.0 serial 17
rem address	= 206.170.168.33/27	(means route to 206.171.58.0 via 206.171.58.2)
WAN alias	= 206.171.58.2	

Note : The Cisco tech support I worked with insisted on the above settings. The *WAN alias* has the same
network address as *my address*(they belong to the same subnet)

Problem :

		Ping		
Network		A	B	C
A	x	yes	no	
B	yes	x	yes	

C no yes x

3.0 Solutions

Choose one the followings :
(1) upgrade software to 4.6ai12 on pipeline router
(2) change the default gateway from 206.171.58.2 to 206.170.168.33 on pipeline router
(3) assume an imaginary wan address on pipeline router and have 3 subnets for routing

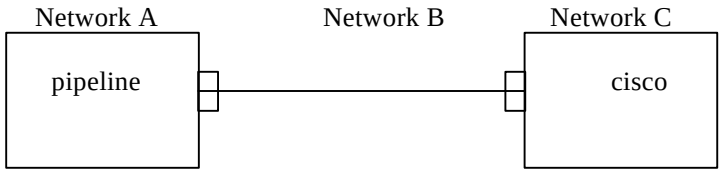


Figure 2

Note : Solution 3 is what we usually suggest but customers may not want to do that because they have to "sacrifice" one network address for the WAN interfaces

3.1 Upgrade Software

With software version 4.5B to 4.6ai7(I haven't tried any software prior to 4.5B), if the *WAN alias* on the pipeline router has the same network address as the ethernet address, packets destined for a default destination will be routed through the ethernet interface.

Referring to Section 2.0 :
When you type "sh ip route" in terminal server, you will see .....

Destination	Gateway	Interf
0.0.0.0/0	206.171.58.2	ie0
206.170.168.32/27	206.171.58.2	wan0

The routing entries above explain why from Network A we can ping Network B but not Network C.

By upgrading the software to 4.6ai12, the customer can ping network C from Network A because the "Bug" has been fixed. The routing table will be....

Destination	Gateway	Interf
0.0.0.0/0	206.171.58.2	wan0
206.170.168.32/27	206.171.58.2	wan0

3.2 Change the Ip address of the Default Gateway

Referring to Section 2.0 and Figure 1 , if the customer doesn't want to upgrade the software, he/she needs to go to :

Main Edit Menu -> Ethernet -> Static Rtes -> Default

and change the *gateway* **from** 206.171.58.2 **to** 206.170.168.33 while *destination* is 0.0.0.0/0

The routing table will be :

Destination	Gateway	Interf
0.0.0.0/0	206.170.168.33	wan0
206.170.168.32/27	206.171.58.2	wan0

This will force Ip packets destined for default destination to be routed through the wan interface .

3.3 Assume Imaginary WAN Address

Refer to “Ascend Communications Technical Brief” Number 04, dated July 26 1994 for more information.