



Pinnacle Application Note IP Tunneling Test Results

PinApp #04-005
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Objective

Determine network communications functionality of Pinnacle Application deployed in routable and non-routable multicast environments.

Test Details

The tests were performed first with all broadcast/multicasting protocols enabled and the same tests were repeated with broadcast/multicasting disabled.

The tests:

1. Confirm 2 connections between the workstation and server.
 - a) Confirm IP multi-casts are being received.
 - b) Confirm connectivity from the workstation to the database on the server is functional
2. Confirm with IP Tunneling enabled that a ping initiated at the server is received at the workstation
3. Confirm a ping initiated at the workstation is received at the server and its reply is received at the workstation.
4. Confirm the client can login / use the application
5. Confirm the server is logging events created by the client.

Results

Findings:

- 1) The Pinnacle application performed as expected in 12 different network configurations.
- 2) Pinnacle tunneling solution operates as expected in a multicast routed network environment.
- 3) Pinnacle can tunnel the application in a VPN connection
- 4) Pinnacle can tunnel through firewalls that pass IPSEC traffic / PPTP

INFO	Default Installation: No Tunneling	Router Mode	tcp / udp ports net cidr 224/X	Router Configuration	Routing Protocol	Network Topology	Login	Run Application	Submit Queries	SERVER DIAGNOSTIC	CLIENT DIAGNOSTIC	
CONFIGURATION DETAILS	Client / Server Installation Default installation or enabling tunneling manually	Router configuration for network traffic	TCP / UDP PORT NUMBERS - communications ports assigned to the application CIDR - classless inter. domain routing tcpip network address masks	The router config filename	Routing protocols for network RIP2 - Broadcast routing updates OSPF (open shortest path first) - Static routes created to hosts EIGRP (Enhanced Interior Gateway Routing Protocol) - proprietary Cisco Broadcast and Static routing	LAN - no remote connections - network is in 1 building / site WAN - remote sites are connected via VPN or dedicated comm links LAYER-3 SWITCH - forwards packets and routes packets	Can Client get the Login Prompt?	Can the Client get past the login and into Pinnacle?	Can the Client Use Pinnacle (e.g. add - remove / change / create reports)?	SERVER CHKPING.exe test results	CLIENT CHKPING.exe test results	
	CLIENT server	no router	all	no router	spanning-tree / broadcast	LAN	YES	YES	YES	REPLY	REPLY	
TUNNELING DISABLED	CLIENT server	no router	all	allow.cfg	spanning-tree / broadcast	LAN-LAYER 3 SWITCH	YES	YES	YES	TIMEOUT	TIMEOUT	
	CLIENT server	allow multicast	udp 500.4500	multi.cfg	rip2	LAN/WAN	YES	YES	YES	REPLY	REPLY	
	CLIENT server	allow multicast	udp 1353/4553	multi.cfg	rip2	LAN/WAN	YES	YES	YES	REPLY	REPLY	
	CLIENT server	block multicast	net 224/8	b_multi.cfg	ospf	LAN/WAN	YES	YES	NO	TIMEOUT	TIMEOUT	
	CLIENT server	block multicast	net 224/8	b_multi.cfg	ospf	LAN/WAN	YES	YES	NO	TIMEOUT	TIMEOUT	
	CLIENT server	block broadcast	net 255/8 224/8	b_broad.cfg	ospf	LAN/WAN	YES	YES	NO	TIMEOUT	TIMEOUT	
	CLIENT server	block broadcast	net 255/8 224/8	b_broad.cfg	ospf	LAN/WAN	YES	YES	NO	TIMEOUT	TIMEOUT	
	CLIENT server	BLOCK IPSEC	udp 500/4500	b_tunn.cfg	eigrp	LAN	YES	YES	YES	TIMEOUT	TIMEOUT	
	CLIENT server	BLOCK IPSEC	udp 1353/3553	b_tunn.cfg	eigrp	LAN	YES	YES	YES	TIMEOUT	TIMEOUT	
	TUNNELING ENABLED	TUNNELING ENABLED IN CLIENT CONFIG	router mode	tcp / udp ports net cidr 224/X	router configuration	Routing Protocol	NETWORK TOPOLOGY AND HARDWARE	Can login to database?	Can connect to Pinnacle?	User is able to Modify or Read Pinnacle data?	RESPONSE IN SERVER CHKPING.EXE	RESPONSE IN CLIENT CHKPING.EXE
CLIENT server		no router	all	no router	spanning-tree / broadcast	LAN	YES	YES	YES	REPLY	REPLY	
CLIENT server		no router	all	no router	spanning-tree / broadcast	LAN	YES	YES	YES	REPLY	REPLY	
CLIENT server		allow all	all	allow.cfg	spanning-tree / broadcast	LAN-LAYER 3 SWITCH	YES	YES	YES	REPLY	REPLY	
CLIENT server		allow all	all	allow.cfg	spanning-tree / broadcast	LAN-LAYER 3 SWITCH	YES	YES	YES	REPLY	REPLY	
CLIENT server		allow (default)	udp 500.4500	allowall.cfg	rip2	LAN	YES	YES	YES	REPLY	REPLY	
CLIENT server		allow (default)	udp 1353. 4553	allowall.cfg	rip2	LAN	YES	YES	YES	REPLY	REPLY	
CLIENT server		allow multicast	net 224/8 udp>1500	multi.cfg	rip2	LAN	YES	YES	YES	REPLY	REPLY	
CLIENT server		allow multicast	net 224/8 udp<1500	multi.cfg	rip2	LAN	YES	YES	YES	REPLY	REPLY	
CLIENT server		block multicast	net 224/8	b_multi.cfg	ospf	LAN/WAN	YES	YES	YES	REPLY	REPLY	
CLIENT server		block multicast	net 224/8	b_multi.cfg	ospf	LAN/WAN	YES	YES	YES	REPLY	REPLY	
CLIENT server		block broadcast	net 255/8 224/8	b_broad.cfg	ospf	LAN/WAN	YES	YES	YES	REPLY	REPLY	
CLIENT server	block broadcast	net 255/8 224/8	b_broad.cfg	ospf	LAN/WAN	YES	YES	YES	REPLY	REPLY		
CLIENT server	BLOCK TUNNELING	udp 500.4500	b_tunn.cfg	eigrp	LAN	YES	YES	YES	TIMEOUT	TIMEOUT		
CLIENT server	BLOCK TUNNELING	udp 1353. 4553	b_tunn.cfg	eigrp	LAN	YES	YES	YES	TIMEOUT	TIMEOUT		

Checkpoint Systems Pinnacle Application Test Lab configuration

