



**SANGFOR**

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# SANGFOR WANO CIFS Acceleration Guide

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# WANO CIFS Acceleration Guide

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# 1.Information Confirm

## 1.1 Network Confirm

Topology map, server subnet, client subnet, whether server join domain, client version, server version, transfer protocol, authentication type, whether sign.

If no domain environment, keep default configuration and enable CIFS proxy test.

## 1.2 How to confirm

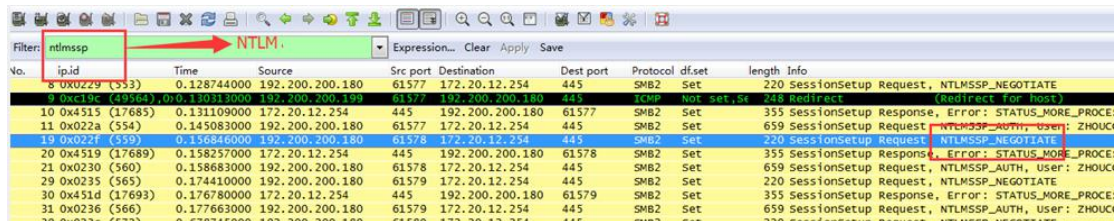
How to confirm transfer protocol:

Client system below vista or server system below server 2008 all use SMB,

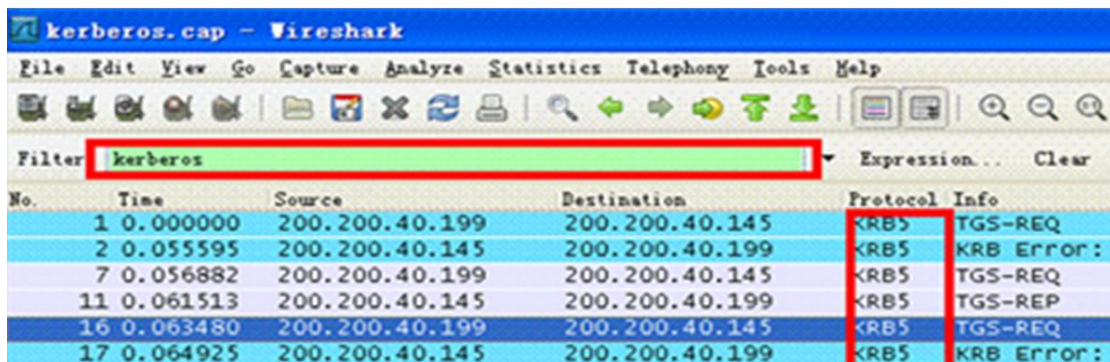
Client system above vista and server system above 2008 all use SMB2.

How to confirm authentication:

Capture normal user's packets and analysis.



No.	Time	Source	Destination	Protocol	df	set	length	Info
8	0.000000	192.200.200.180	172.20.12.254	SMB2	Set		220	SessionSetup Request, NTLMSSP_NEGOTIATE
9	0.000000	192.200.200.180	172.20.12.254	ICMP	Not set	Set	248	Redirect (Redirect for host)
10	0.000000	172.20.12.254	192.200.200.180	SMB2	Set		355	SessionSetup Response, Error: STATUS_MORE_PROCE
11	0.000000	192.200.200.180	172.20.12.254	SMB2	Set		659	SessionSetup Request, NTLMSSP_AUTH, User: ZHOUC
19	0.000000	192.200.200.180	172.20.12.254	SMB2	Set		220	SessionSetup Request, NTLMSSP_NEGOTIATE
20	0.000000	172.20.12.254	192.200.200.180	SMB2	Set		355	SessionSetup Response, Error: STATUS_MORE_PROCE
21	0.000000	192.200.200.180	172.20.12.254	SMB2	Set		659	SessionSetup Request, NTLMSSP_AUTH, User: ZHOUC
29	0.000000	192.200.200.180	172.20.12.254	SMB2	Set		220	SessionSetup Request, NTLMSSP_NEGOTIATE
30	0.000000	172.20.12.254	192.200.200.180	SMB2	Set		355	SessionSetup Response, Error: STATUS_MORE_PROCE
31	0.000000	192.200.200.180	172.20.12.254	SMB2	Set		659	SessionSetup Request, NTLMSSP_AUTH, User: ZHOUC
32	0.000000	192.200.200.180	172.20.12.254	SMB2	Set		220	SessionSetup Request, NTLMSSP_NEGOTIATE



No.	Time	Source	Destination	Protocol	Info
1	0.000000	200.200.40.199	200.200.40.145	KRB5	TGS-REQ
2	0.055595	200.200.40.145	200.200.40.199	KRB5	KRB Error:
7	0.056882	200.200.40.199	200.200.40.145	KRB5	TGS-REQ
11	0.061513	200.200.40.145	200.200.40.199	KRB5	TGS-REP
16	0.063480	200.200.40.199	200.200.40.145	KRB5	TGS-REQ
17	0.064925	200.200.40.145	200.200.40.199	KRB5	KRB Error:

How to know whether CIFS enable sign:

Capture normal user's packets and analysis.

21	0x0230 (560)	0.158683000	192.200.200.180	61578	172.20.12.254	445	SMB2	Set	659	SessionSetup Request, NTLMSSP_AU
22	0x451a (17690)	0.161840000	172.20.12.254	445	192.200.200.180	61578	SMB2	Set	131	SessionSetup Response, Error: ST
27	0x0234 (564)	0.170281000	192.200.200.180	61579	172.20.12.254	445	SMB2	Set	162	NegotiateProtocol Request

SMB2 (Server Message Block Protocol version 2)  
SMB2 Header  
Server Component: SMB2  
Header Length: 64  
Credit charge: 1  
Channel Sequence: 0  
Reserved: 0000  
Command: NegotiateProtocol (0)  
Credits requested: 31  
Flags: 0x00000000  
Chain offset: 0x00000000  
Command Sequence Number: 0  
Process ID: 0000ffff  
Tree ID: 0x00000000  
Session Id: 0x0000000000000000  
Signature: 00000000000000000000000000000000  
Response in: 281  
NegotiateProtocol Request (0x00)

ALL 0 is not enable sign

## 2. Analysis

If POC not in domain, we don't need to do delegation, just use TCP proxy or enable CIFS proxy.

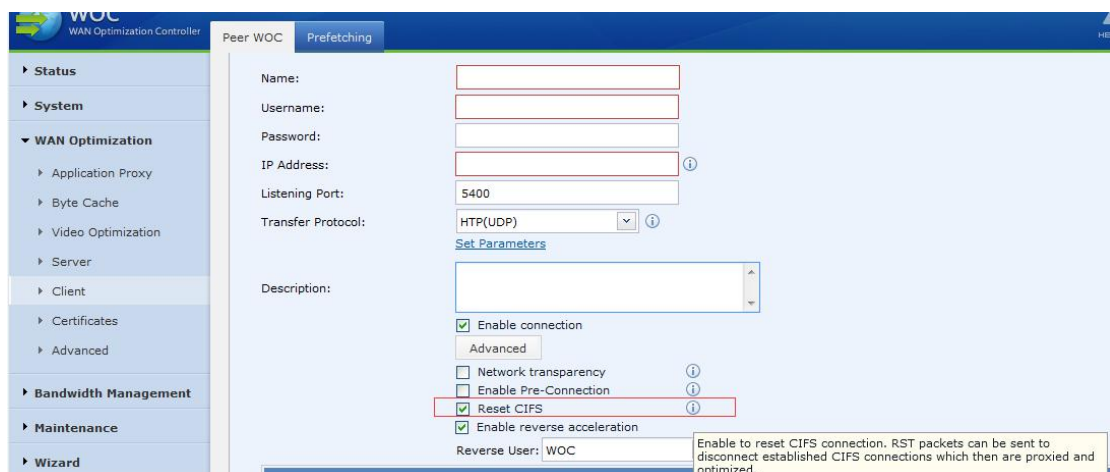
If POC in domain environment, we need to do more thing to confirm.  
We can disable CIFS proxy, then WANO will use TCP proxy to accelerate, it doesn't need to do delegation, but if it has no acceleration effect ,we must enable CIFS proxy and according the following excel whether it need to do delegation.



CIFS proxy in  
domain environmen

## 3. Configuration

To test accelerate CIFS, we'd better enable reset CIFS.



**WANO WAN Optimization Controller**

Peer WOC Prefetching

Name:

Username:

Password:

IP Address:  ⓘ

Listening Port:

Transfer Protocol:  ⓘ

[Set Parameters](#)

Description:

☒ Enable connection

☐ Network transparency ⓘ

☐ Enable Pre-Connection ⓘ

☒ Reset CIFS ⓘ

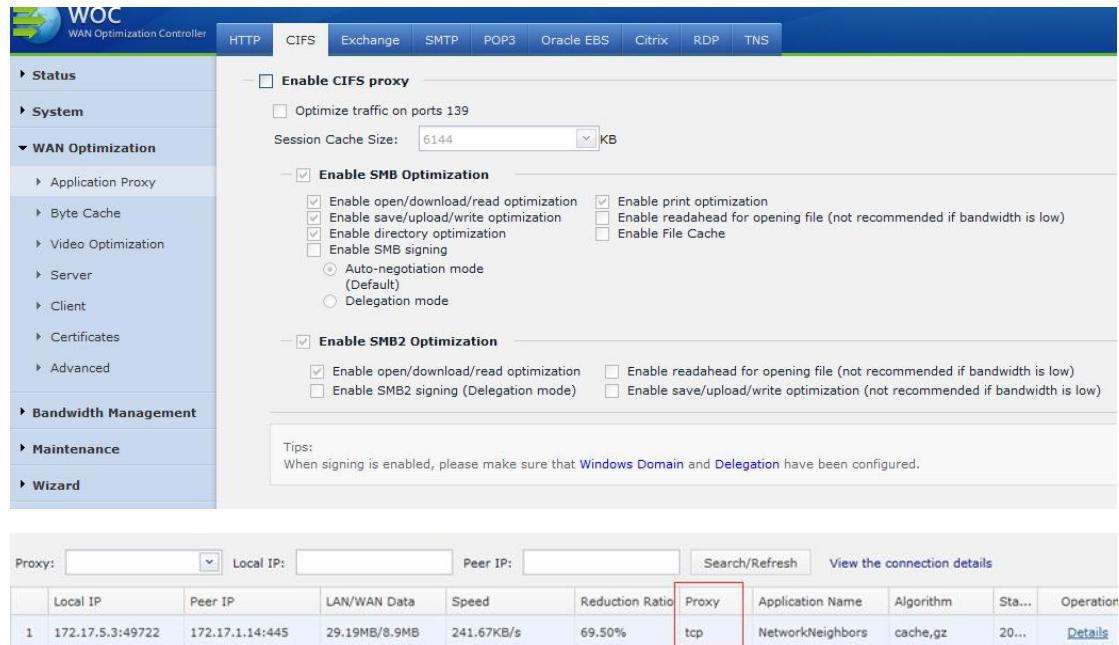
☒ Enable reverse acceleration

Reverse User:

Enable to reset CIFS connection. RST packets can be sent to disconnect established CIFS connections which then are proxied and optimized.

## 3.1 Ordinary environment

1. Keep default configuration, not enable CIFS proxy, WANO will use TCP proxy to accelerate CIFS.



WOC WAN Optimization Controller

HTTP CIFS Exchange SMTP POP3 Oracle EBS Citrix RDP TNS

▶ Status

▶ System

▶ WAN Optimization

▶ Application Proxy

▶ Byte Cache

▶ Video Optimization

▶ Server

▶ Client

▶ Certificates

▶ Advanced

▶ Bandwidth Management

▶ Maintenance

▶ Wizard

☐ Enable CIFS proxy

☐ Optimize traffic on ports 139

Session Cache Size: 6144 KB

☒ Enable SMB Optimization

☒ Enable open/download/read optimization

☒ Enable save/upload/write optimization

☒ Enable directory optimization

☐ Enable SMB signing

☒ Auto-negotiation mode (Default)

☐ Delegation mode

☒ Enable print optimization

☐ Enable readahead for opening file (not recommended if bandwidth is low)

☐ Enable File Cache

☒ Enable SMB2 Optimization

☒ Enable open/download/read optimization

☐ Enable SMB2 signing (Delegation mode)

☐ Enable readahead for opening file (not recommended if bandwidth is low)

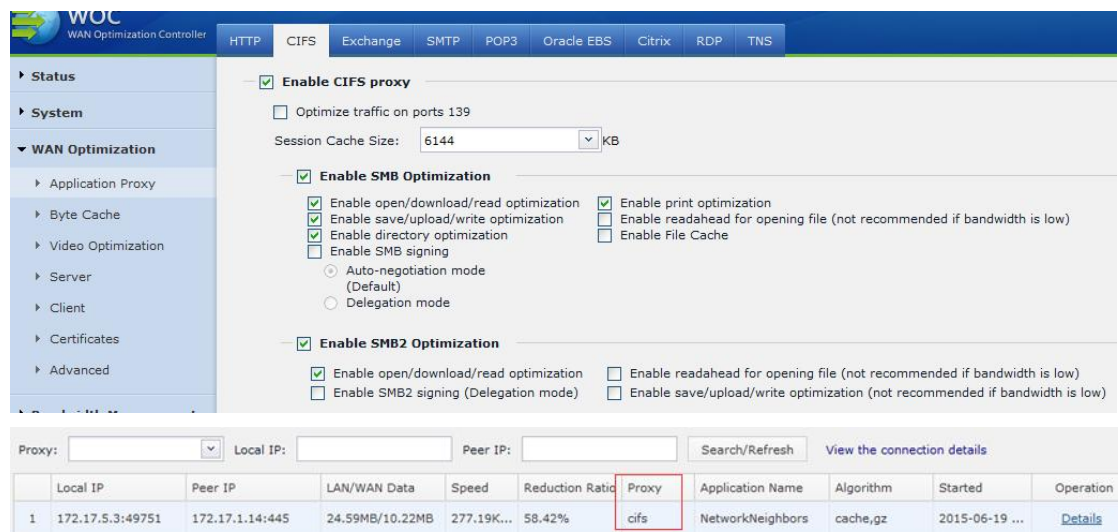
☐ Enable save/upload/write optimization (not recommended if bandwidth is low)

Tips:  
When signing is enabled, please make sure that Windows Domain and Delegation have been configured.

Proxy: Local IP: Peer IP: Search/Refresh View the connection details

	Local IP	Peer IP	LAN/WAN Data	Speed	Reduction Ratio	Proxy	Application Name	Algorithm	Sta...	Operation
1	172.17.5.3:49722	172.17.1.14:445	29.19MB/8.9MB	241.67KB/s	69.50%	tcp	NetworkNeighbors	cache,gz	20...	<a href="#">Details</a>

2. Enable CIFS proxy, WANO will use CIFS proxy to acceleration CIFS.



WOC WAN Optimization Controller

HTTP CIFS Exchange SMTP POP3 Oracle EBS Citrix RDP TNS

▶ Status

▶ System

▶ WAN Optimization

▶ Application Proxy

▶ Byte Cache

▶ Video Optimization

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☐ Enable readahead for opening file (not recommended if bandwidth is low)

☐ Enable File Cache

☒ Enable SMB2 Optimization

☒ Enable open/download/read optimization

☐ Enable SMB2 signing (Delegation mode)

☐ Enable readahead for opening file (not recommended if bandwidth is low)

☐ Enable save/upload/write optimization (not recommended if bandwidth is low)

Proxy: Local IP: Peer IP: Search/Refresh View the connection details

	Local IP	Peer IP	LAN/WAN Data	Speed	Reduction Ratio	Proxy	Application Name	Algorithm	Started	Operation
1	172.17.5.3:49751	172.17.1.14:445	24.59MB/10.22MB	277.19K...	58.42%	cifs	NetworkNeighbors	cache,gz	2015-06-19 ...	<a href="#">Details</a>

## 3.2 Domain environment

1. Just like ordinary environment disable CIFS proxy and enable CIFS proxy, if this two method have no effect, we should to do more thing.

2. Capture packets of a normal PC copy data from CIFS server, analysis the transfer protocol/ authentication/whether sign.

A. CIFS server side WANO join domain.

Deployment Local Subnet **Windows Domain** VPN Interface VLAN NIC

Domain Name:  NTLM service should be enabled on domain controller. [Configuration Manual](#)

Domain Controller:  (optional) Enter name of domain controller rather than the IP address

Username:  Please use an account that has permission to join domain (for details, view the Configuration Manual)

Password:

Confirm Password:

Preferred DNS:

Status: In domain faelabtest.com

NetBIOS Domain Name: FAELABTEST

## B. Create a delegation user in domain

**New Object - User**

Create in: sf.com/Users

First name:  Initials:

Last name:

Full name:

User logon name:

User logon name (pre-Windows 2000):

< Back Next > Cancel

```

C:\> Administrator: Command Prompt
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\Administrator>setspn -A http/daserver vincent
Registering ServicePrincipalNames for CN=vincent,CN=Users,DC=sf,DC=com
http/daserver
Updated object

C:\Users\Administrator>
  
```

**vincent Properties**

Member Of: Dialin Environment Sessions

Remote control Remote Desktop Services Profile

Personal Virtual Desktop COM+ **UNIX Attributes**

General Address Account Profile Telephones **Delegation** Organization

Delegation is a security-sensitive operation, which allows services to act on behalf of another user.

☐ Do not trust this user for delegation

☒ Trust this user for delegation to any service (Kerberos only)

☐ Trust this user for delegation to specified services only

☐ Use Kerberos only

☒ Use any authentication protocol

Services to which this account can present delegated credentials:

Service Type	User or Computer	Port	Service Name

☐ Expanded Add... Remove

**Add Services**

To allow services to be delegated for a user or computer, select the appropriate users or computers, and then click the services.

To select one or more user or computer names, click Users or Computers...

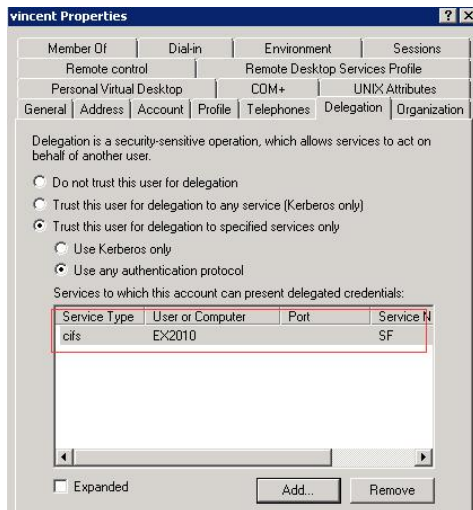
Available services:

Service Type	User or Computer	Port	Service Name
alerter	EX-2010	SF	
appmgmt	EX-2010	SF	
browser	EX-2010	SF	
cifs	EX-2010	SF	
clbcatq	EX-2010	SF	
clpssvc	EX-2010	SF	
clpssvc	EX-2010	SF	
clpssvc	EX-2010	SF	
Dfsr-12F9A2...	ex2010.sf.com		

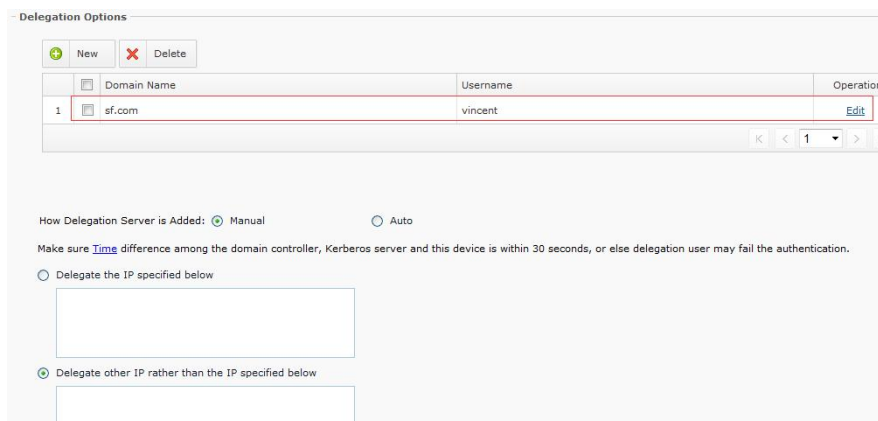
Select All OK Cancel

chose CIFS server

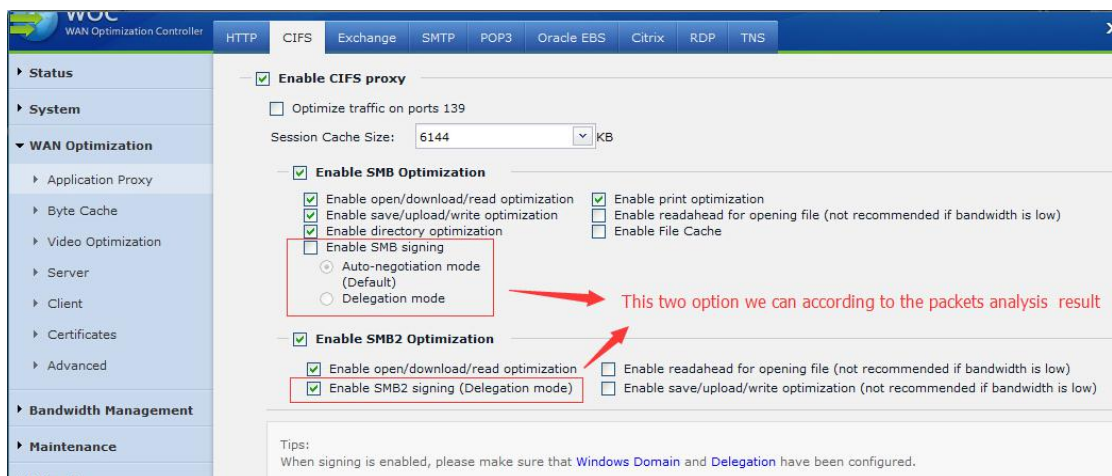




C. add delegation user to CIFS server side WANO.



D. Enable CIFS proxy.



## 4. Troubleshooting

A. The most important thing is environment confirm.

B. Capture one normal PC copy file from CIFS server and analysis packets.

C. If acceleration tunnel reconnect, we should close and clean CIFS session and wait for a while test again.

net use \* /del can clean PC session

```
C:\Users\Administrator>net use * /del
You have these remote connections:

        \\TSCLIENT\C
        \\TSCLIENT\D
        \\TSCLIENT\E
        \\TSCLIENT\F

Continuing will cancel the connections.

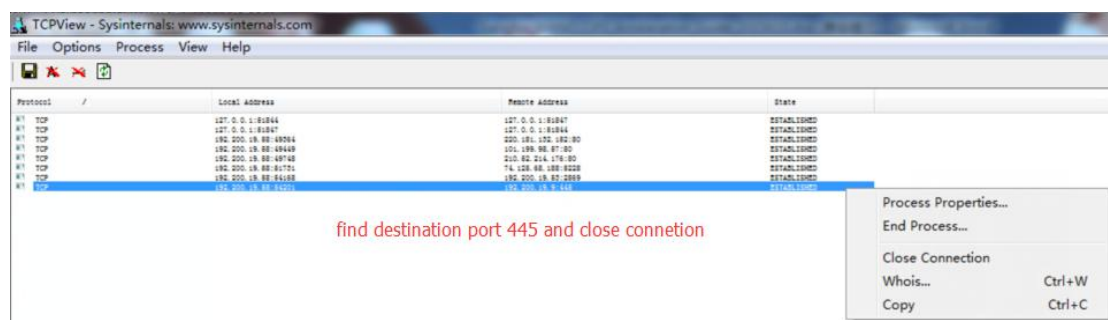
Do you want to continue this operation? (Y/N) [N]: Y
The command completed successfully.

C:\Users\Administrator>
```

we can also use tool to clean old session



Tcpview.exe



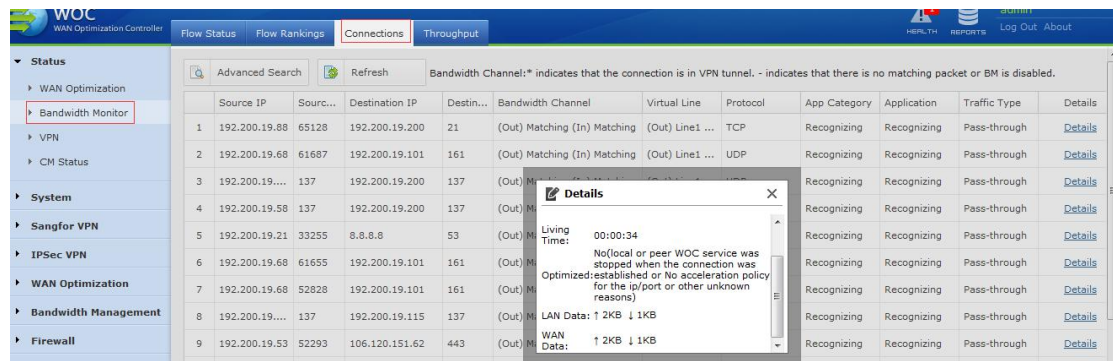
D. Check debug logs

ug	17:36...	[gw 4756]pdcifs-smb2,please config delegation user,truly_authtype:4, src:172.17.5.3:49784, dst:172.17.1.9:445(session_...	
ug	17:36...	[gw 4756]pdcifs-smb2,use local user or other domain	[gw 4756]pdcifs-smb2,please config delegation user,truly_authtype:4, src:172.17.5.3:49784, ...
ug	17:36...	[gw 4756]pdcifs-smb2, delegation or kerberos type	dst:172.17.1.9:445(session_cifs_base.cpp,6421) }784, des:172.1...

E. Check health status, whether it has alarm.



## F. Monitor connections.



**WOC**  
WAN Optimization Controller

Flow Status | Flow Rankings | **Connections** | Throughput

Bandwidth Channel:\* indicates that the connection is in VPN tunnel. - indicates that there is no matching packet or BM is disabled.

	Source IP	Source Port	Destination IP	Destination Port	Bandwidth	Channel	Virtual Line	Protocol	App Category	Application	Traffic Type	Details
1	192.200.19.88	65128	192.200.19.200	21	(Out) Matching	(In) Matching	(Out) Line1 ...	TCP	Recognizing	Recognizing	Pass-through	<a href="#">Details</a>
2	192.200.19.68	61687	192.200.19.101	161	(Out) Matching	(In) Matching	(Out) Line1 ...	UDP	Recognizing	Recognizing	Pass-through	<a href="#">Details</a>
3	192.200.19.137	137	192.200.19.200	137	(Out) Matching	(In) Matching	(Out) Line1 ...	TCP	Recognizing	Recognizing	Pass-through	<a href="#">Details</a>
4	192.200.19.58	137	192.200.19.200	137	(Out) Matching	(In) Matching	(Out) Line1 ...	TCP	Recognizing	Recognizing	Pass-through	<a href="#">Details</a>
5	192.200.19.21	33255	8.8.8.8	53	(Out) Matching	(In) Matching	(Out) Line1 ...	TCP	Recognizing	Recognizing	Pass-through	<a href="#">Details</a>
6	192.200.19.68	61655	192.200.19.101	161	(Out) Matching	(In) Matching	(Out) Line1 ...	TCP	Recognizing	Recognizing	Pass-through	<a href="#">Details</a>
7	192.200.19.68	52828	192.200.19.101	161	(Out) Matching	(In) Matching	(Out) Line1 ...	TCP	Recognizing	Recognizing	Pass-through	<a href="#">Details</a>
8	192.200.19.137	137	192.200.19.115	137	(Out) Matching	(In) Matching	(Out) Line1 ...	TCP	Recognizing	Recognizing	Pass-through	<a href="#">Details</a>
9	192.200.19.53	52293	106.120.151.62	443	(Out) Matching	(In) Matching	(Out) Line1 ...	TCP	Recognizing	Recognizing	Pass-through	<a href="#">Details</a>

**Details**

Living Time: 00:00:34

No(local or peer WOC service was stopped when the connection was Optimized:established or No acceleration policy for the ip/port or other unknown reasons)

LAN Data: ↑ 2KB ↓ 1KB

WAN Data: ↑ 2KB ↓ 1KB