

SMB (Server Message Block) Issues

SMB is the network protocol used for file sharing between Windows and IBM i. This protocol gives RVI users access to the IMAGE and OPTICAL directories from Windows allowing customers to view and upload documents using TCP-UNC mapping.

Changes related to SMB support for Windows 7 - 10 and IBM i O/S V7R3 have adversely affected RVI customers using TCP-UNC mapping.

SMB Changes:

- **Windows 7 - 10**

The latest release of Windows 10 does not enable SMB 1.0. Windows caching creates timing issues with document retrieval.

NOTE: Upgrading to Windows 10 from an older operating system allows SMB 1.0 to remain enabled and working. However, if a clean installation of Windows 10 is used, SMB 1.0 will not be enabled.

- **IBMi V7R3**

IBM i NetServer was enhanced in V7R3 to include SMB 2.0 which is now the default protocol.

Current PTFs include a fix for SMB 2.0 compatibility issues. Customers should download and apply MF64871 (V7R3) before trying the options below.

<https://www-01.ibm.com/support/docview.wss?uid=nas3MF64871>

Commonly reported issues related to SMB changes:

1. Error 'File Not Found'
2. Access blocked to TCP-UNC path ([\\systemname\IMAGE](#)) or ([\\ipaddress\IMAGE](#))
3. Repetitively viewing the same image
4. Error (384) Failed To Initialize System Profiles

Options to resolve SMB issues:

Option 1: Use SMB 2.0 with TCP-UNC

- a. Disable Opportunistic Locking
- b. Disable SMB 1.0 on PC
- c. Windows Registry Update

Option 2: Use SMB 1.0 with TCP-UNC (not recommended)

- a. Disable Opportunistic Locking
- b. Disable SMB 2.0 on IBMi
- c. Enable SMB 1.0 on PC

Option 3: Use FTP

- a. Setup user/device to FTP mapping

Disable Opportunistic Locking

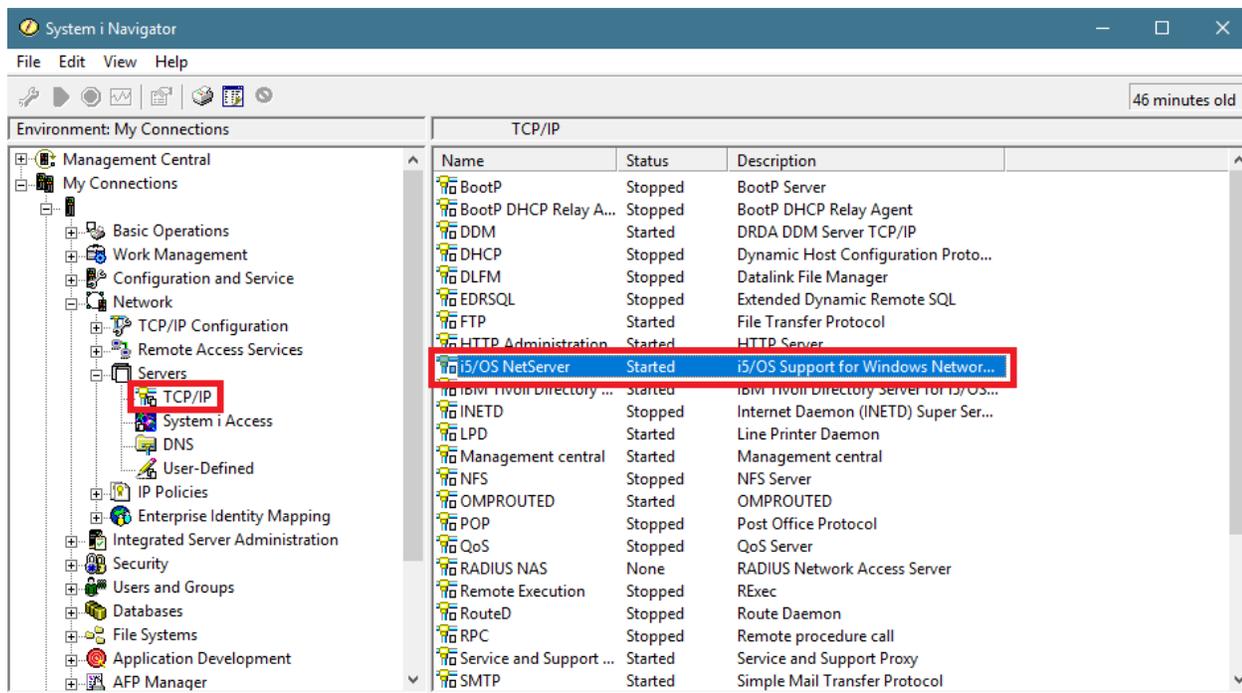
Using IBM System i Navigator to disable **Allow Opportunistic Locking**. (IBM System i Navigator must be installed on the pc to access this option.)

1. Select 

2. Select 

3. When System i Navigator opens

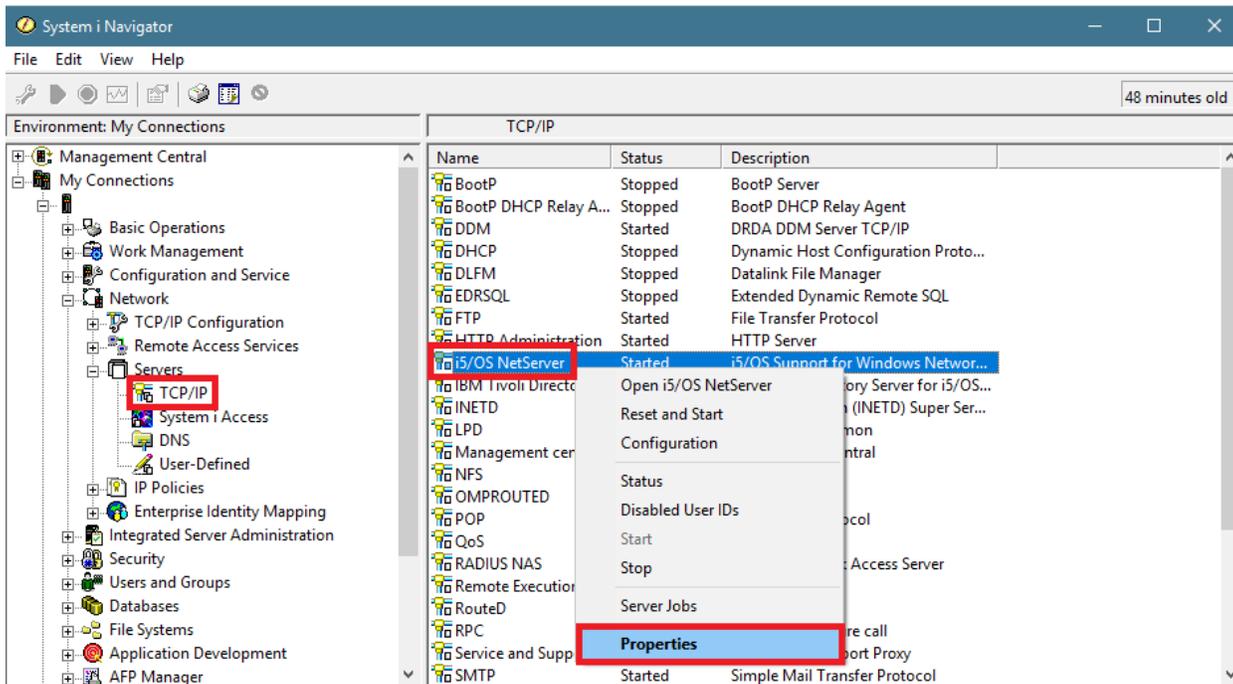
- a. Expand 'My Connections'
- b. Select your iSeries/IP Address
- c. Expand 'Network'
- d. Expand 'Servers'
- e. Select 'TCP/IP'
- f. Right-mouse click 'Netserver'



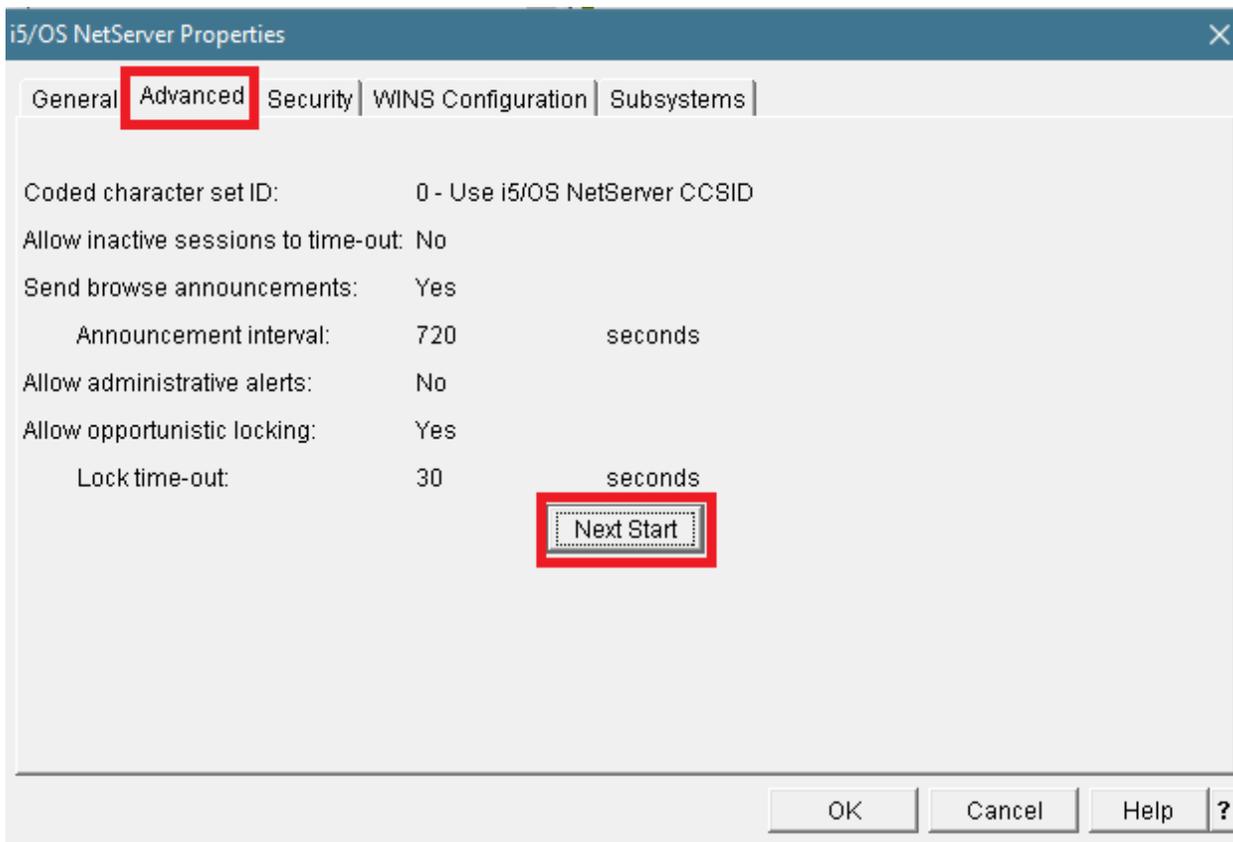
The screenshot shows the IBM System i Navigator application window. The left pane displays a tree view of the system configuration, with 'TCP/IP' selected under the 'Servers' category. The right pane shows a table of TCP/IP services. The 'i5/OS NetServer' entry is highlighted with a red box, indicating it is the target for the next step.

Name	Status	Description
BootP	Stopped	BootP Server
BootP DHCP Relay A...	Stopped	BootP DHCP Relay Agent
DDM	Started	DRDA DDM Server TCP/IP
DHCP	Stopped	Dynamic Host Configuration Proto...
DLFM	Stopped	Datalink File Manager
EDRSQL	Stopped	Extended Dynamic Remote SQL
FTP	Started	File Transfer Protocol
HTTP Administration	Started	HTTP Server
i5/OS NetServer	Started	i5/OS Support for Windows Networ...
IBM i/vol Directory ...	Started	IBM i/vol Directory server for i5/OS...
INETD	Stopped	Internet Daemon (INETD) Super Ser...
LPD	Started	Line Printer Daemon
Management central	Started	Management central
NFS	Stopped	NFS Server
OMPROUTED	Started	OMPROUTED
POP	Stopped	Post Office Protocol
QoS	Stopped	QoS Server
RADIUS NAS	None	RADIUS Network Access Server
Remote Execution	Stopped	RExec
RouteD	Stopped	Route Daemon
RPC	Stopped	Remote procedure call
Service and Support ...	Started	Service and Support Proxy
SMTP	Started	Simple Mail Transfer Protocol

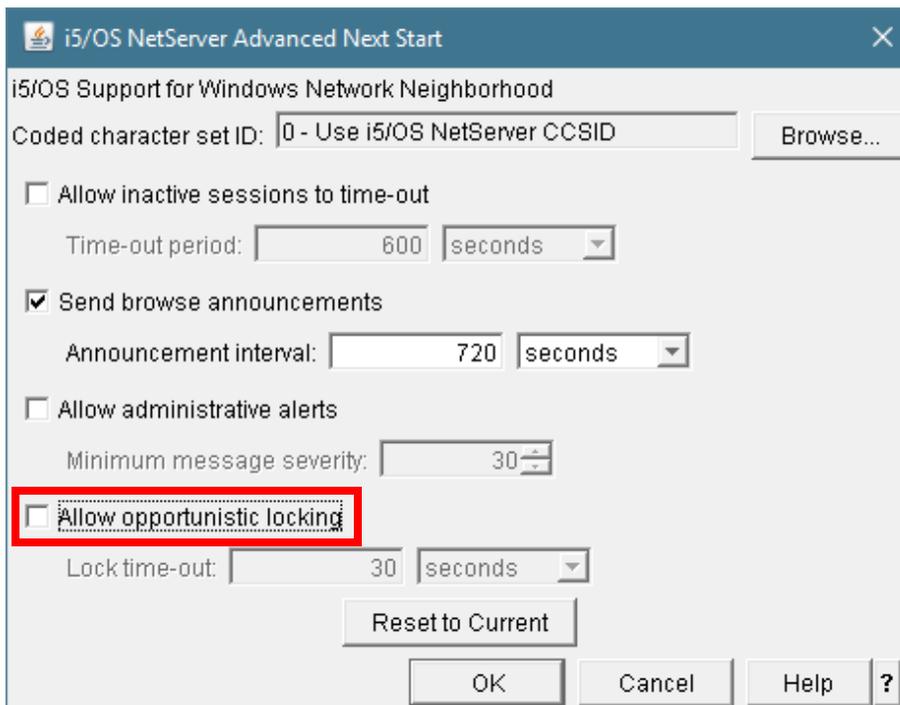
- g. Select 'Properties'



- h. Select 'Advanced' tab
- i. Press 'Next Start' button



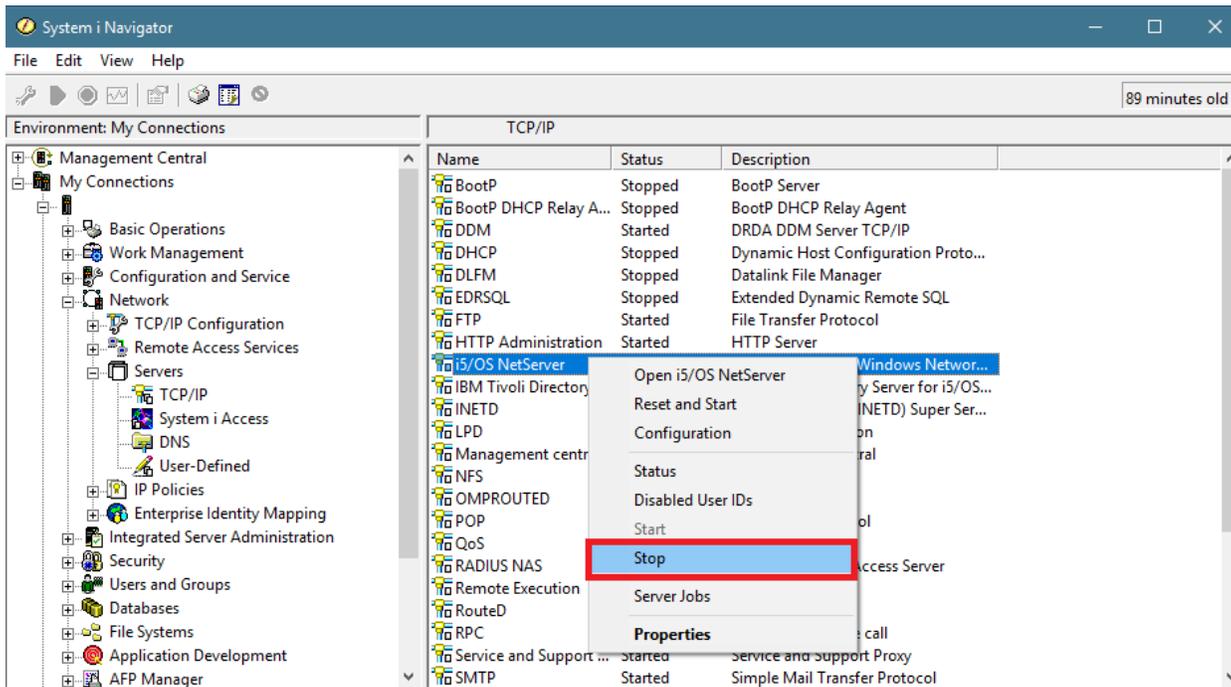
- j. Uncheck 'Allow opportunistic locking'
- k. Press 'OK' button



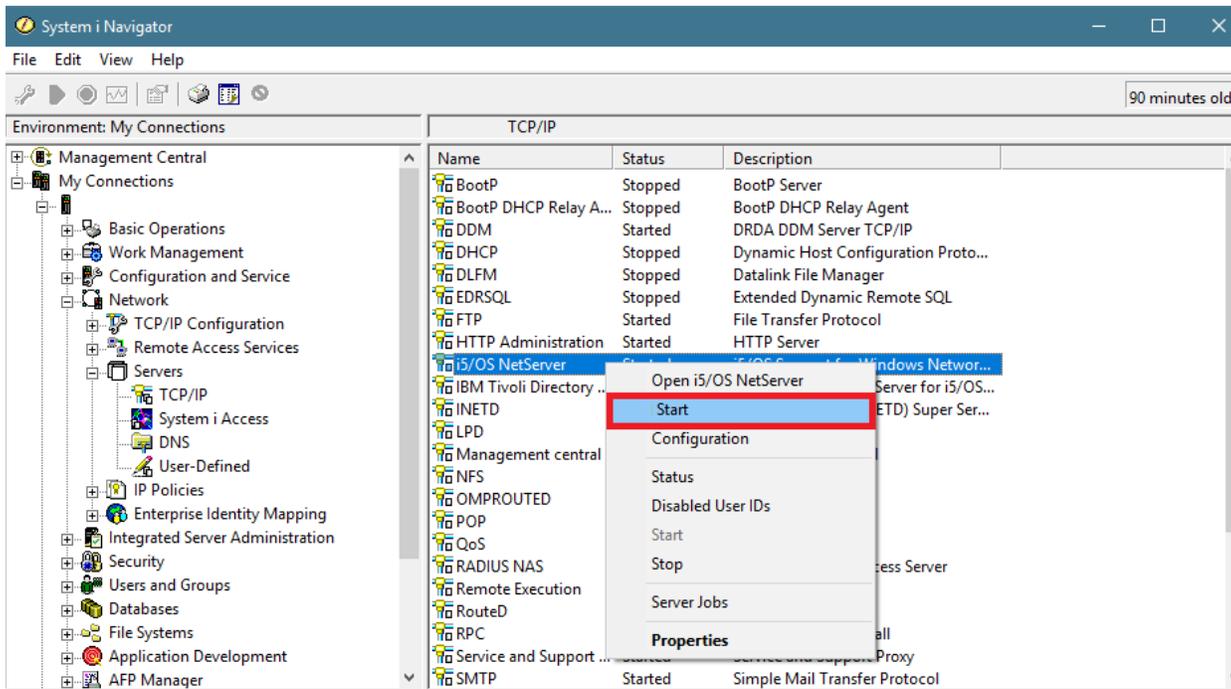
Allow opportunistic locking

Specifies that if no other users are accessing a file on the server, then an exclusive lock is placed on the file. This enhances performance by allowing a client to cache updates to the locked file until it closes the file, when the cached updates are written to the file. If another user tries to access the file, the client with the lock is notified and performs a write operation of the cached updates before the new user is granted access to the file

4. Once the change is made, restart the Netserver.
 - a. Right-mouse click '**Netserver**'
 - b. Select '**Stop**'



- c. Right-mouse click 'Netserver'
- d. Select 'Start'



-Enable/Disable SMB 1.0 *(must be done on each pc)*

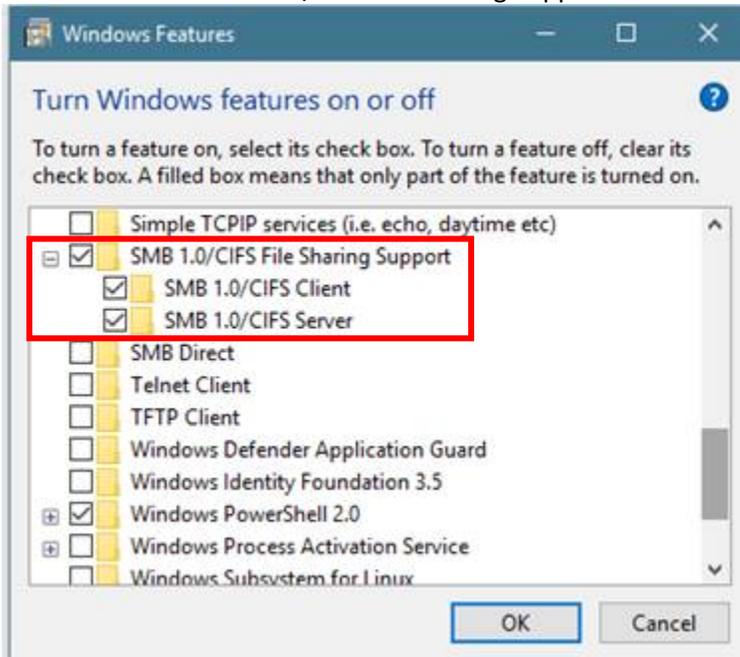
1. Go to Control Panel > Programs and Features > Turn Windows features on or off

2. To **enable** SMB 1.0:

Check SMB 1.0/CIFS File Sharing Support as well as all the boxes underneath it

To **disable** SMB 1.0:

Uncheck SMB 1.0/CIFS File Sharing Support as well as all the boxes underneath it



3. Reboot

Disable SMB 2.0 *(must be done on IBMi server)*

<http://www-01.ibm.com/support/docview.wss?uid=nas8N1021710>

Windows Registry Update *(must be done on each pc)*

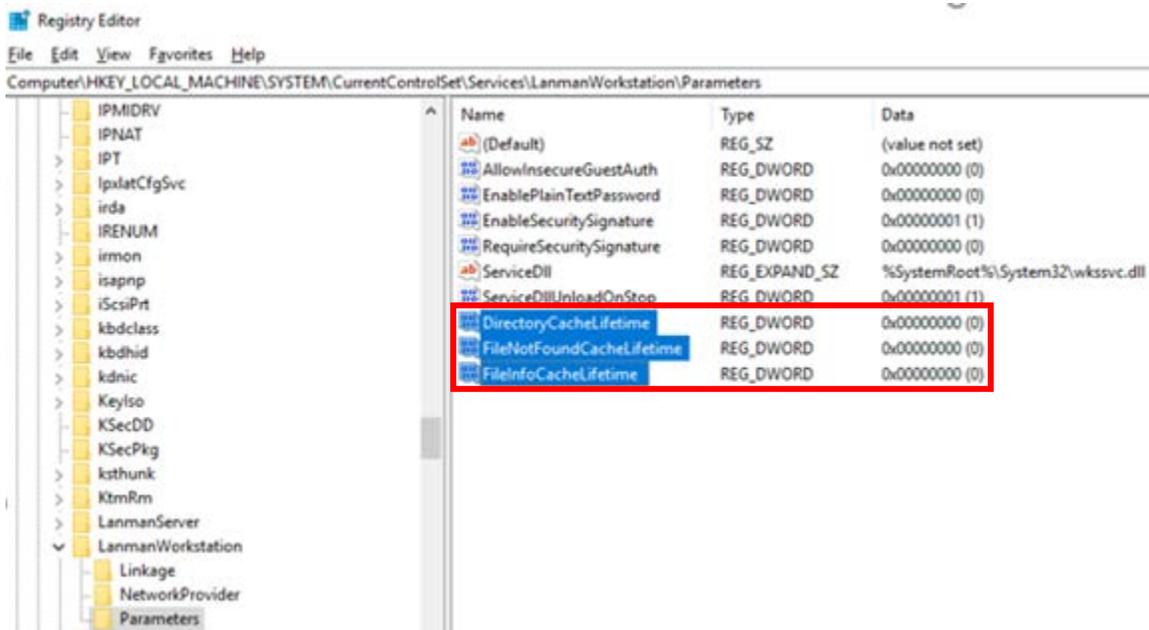
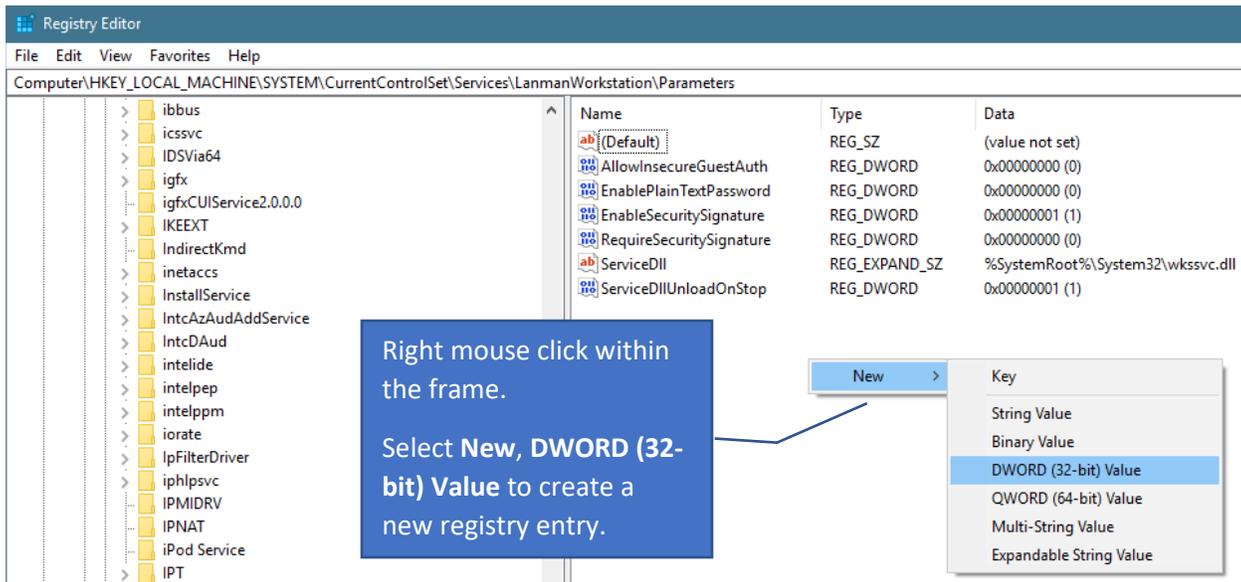
Disable the caches in the following order to determine which of these caches is affecting the application.

Note: If the cache entries do not exist in the registry, create them by right mouse clicking inside the Parameters frame, select New, DWORD (32-Bit) Value

1. Directory cache, by setting **DirectoryCacheLifetime** to 0.
2. File Not Found cache, by setting **FileNotFoundCacheLifetime** to 0.
3. File information cache, by setting **FileInfoCacheLifetime** to 0.

REGISTRY LOCATION:

Computer\HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\LanmanWorkstation\Parameters



Warning: Disabling the File information Cache can have significant effect on client performance and show an increase in the number of metadata requests that are sent to the server.

Additional Information from a google search of SMB2 Client Cache

- <https://bogner.sh/2014/10/how-to-disable-smb-client-side-caching/>
- [https://docs.microsoft.com/en-us/previous-versions/windows/it-pro/windows-7/ff686200\(v=ws.10\)](https://docs.microsoft.com/en-us/previous-versions/windows/it-pro/windows-7/ff686200(v=ws.10))

Setup FTP Mapping (*FTP must be running on the IBMi server*)

1. At an IBMi command line, type **GO IMAGE**. (*This will take you to the RVI Main menu.*)
2. Option 8 Maintenance Menu
3. Option 6 Maintain System Control File Parameters
 - a. Control File Record: **TCPADD**
 - b. Verify the value of TCPADD is **16 characters or less**
 - c. F3 = Exit
4. Option 7 Maintain PC Workstation Configuration
 - a. F10 'Add A Record' to add a new entry (*If an entry exists for this user/device, place an 'X' next to it.*)
 - b. Set the mapping type to 'F' for FTP
 - c. Press <enter> to save the changes
 - d. F3 = Exit
5. From the RVI viewer, click Image, Preferences, FTP Support
 - a. Input a valid IBMi user id and password
6. From the RVI viewer, click Host, Profile Directory
 - a. Input a valid FTP path to your IBMi image directory (Example: *ftp://ipaddress/IMAGE*)