**IBM Tivoli Support Technical Exchange
Web Seminar**

Tivoli Storage Manager

Windows open file support

Tivoli. software

Outline

- What is open file support

- Supported platforms

- Installation

- Configuration settings

- Version 5.2 versus 5.3 and 5.

- Performance tuning

- Known issues

- References

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Terminology

- Serialization
  - ▸ A copy group attribute that specifies whether a file can be modified during a backup or archive operation.

- Snapshot
  - ▸ A snapshot is a point-in-time view of a volume

- LVSA
  - ▸ TSM Logical Volume Snapshot Agent

- GUI
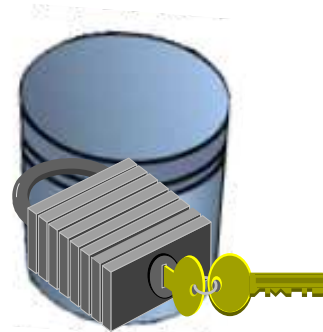 - ▸ TSM Client graphical user interface

What is open file support ?

- Backup of files that are opened in such a way to deny access to all other processes on a Microsoft® Windows® operating system

- TSM uses the LVSA driver to accomplish this

Open files　　　　　　　　　**TSM Server**

Why use open file support ?

- Files being backed up are made unavailable to all other applications resulting in:

  ANS4987E Error processing '\\machine1\x$\dir\lockedfile.xyz': the object is in use by another process

  ANS1228E Sending of object '\\machine1\x$\dir\lockedfile.xyz' failed

- Provides a clean backup of open files as opposed to using the 'dynamic' copy serialization setting
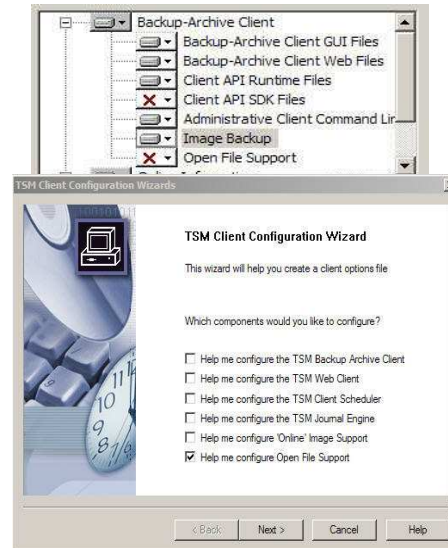
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Supported platforms

- Windows 2000
  - ▸ TSM Client and 5.3
- Windows XP Professional
  - ▸ TSM Client 5.3, 5.4
- Windows 2003
  - ▸ TSM Client 5.3.2 or hig

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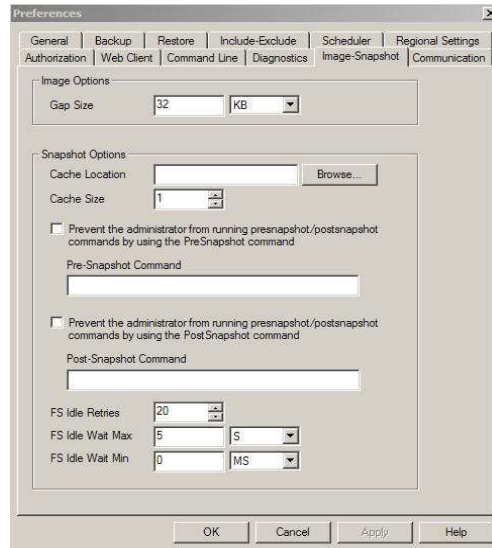
Installing the LVSA

- Initial Setup
  - ▶ Select the 'Image Backup' package during the initial installation of the client

- Client GUI Setup Wizard
  - ▶ Utilities -> Setup Wizard

- Initial Configuration
  - ▶ Default settings will be used after installation
  - ▶ No configuration is required

Configuration options

- Dsm.opt
  - ▸ Include.fs fileleveltype
  - ▸ Snapshotcachelocation
  - ▸ Snapshotcachesize
  - ▸ Snapshotroot
  - ▸ Presnapshotcmd
  - ▸ Postsnapshotcmd
- GUI preferences

Options

- Include.fs d: fileleveltype=snapshot
  - ▶ Enables OFS for the file system (D: in this example)
  - ▶ Default for all file systems if option is not defined

- Include.fs c: fileleveltype=dynamic
  - ▶ Disables OFS of the file system (C: in this example**)**

- Snapshotcachelocation c:\lvsacache
  - ▶ Location where changes to the file system are stored during an OFS backup (c:\lvsacache in this example)

- Snapshotcachesize 10
  - ▶ Specifies the max size of the cache file
  - ▶ Value is a percent of the size of the file system where cache file resides (10% of the snapshotcachelocation in this example)
  - ▶ Default value is 1
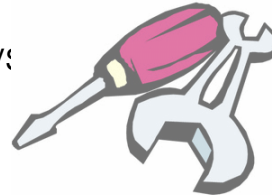
Options (continued)

- Snapshotroot
  - ▶ Used with incremental, selective or archive commands
  - ▶ Used with applications from other vendors that provide snapshots
  - ▶ Associates the data on the local snapshot with the real file space data that is stored on the TSM server

- Presnapshotcmd "cmdstring"
  - ▶ Allows OS shell commands to be run before LVSA starts a snapshot

- Postsnapshotcmd "cmdstring"
  - ▶ Allows OS shell commands to be run after the LVSA starts a snapshot

OFS differences between 5.2 and 5.3

- **TSM Client 5.2**
  - ▸ No Windows 2003 support
  - ▸ Requires at least 2 local file systems to be present
  - ▸ Snapshotcachelocation for a file system can not be resident (that is, the cache for a file system having a snapshot taken must be located on another file system)

- **TSM Client 5.3 and 5.4**
  - ▸ Snapshotcachelocation should be resident (that is, the cache for a file system having a snapshot taken should be located on the same file system)
  - ▸ Windows 2003 is supported at 5.3.2 and higher

Performance tuning

- Changes to defaults in 5.3.3-5.4.1
  - OFS may or may not fail after upgrading to 5.3.3. Defaults changed back in version 5.4.1 (APAR IC51758)
- Snapshotfsidlewait **max_wait, min_wait**
  - Specifies how long a file system needs to be idle before a snapshot will be taken
  - Example: Snapshotfsidlewait 5s,1s

    First attempt would wait for 5 seconds, next attempts would increment down based on min_wait and retry_number
  - A value of zero will not wait for the file system to be idle but is not recommended
- Snapshotfsidleretries **retry_number**
  - Specifies the number of times that the LVS snapshot
- Refer to the client manual or DCF 1121552 for
  further information on adjusting these settings

Known issues

- DCFs
    - **1169583 - TSM Client Cannot Backup Windows 2000 Encrypted Files Systems (EFS) When TSM's Open File Support Is Enabled**
    - **1234276 - TSM client open file support backup fails with ANS1378E error**
    - **1155400 - TSM error "ANS1327E The snapshot operation for 'C:' failed. Error code: 653"**
    - **1176642 - TSM backup and restore of NTUSER.DAT in a Windows 2003 environment**

- APARs
    - **IC48961 - ANS1425E - IMAGE BACKUP OF COMPRESSED DISK FAILS IF CACHE LOCATION IS ON THE SAME DRIVE**
    - **IC47649 - BACKUPS HANG WHEN INVALID SNAPSHOTCACHELOCATION SPECIFIED.**
    - **IC49029 - WINDOWS SYSTEM HANG DURING OFS BACKUP**

- OFS is not supported for backing up active VMWare Images

Resources:

- **IBM Tivoli Storage Manager Concepts**
  http://www.redbooks.ibm.com/redbooks/pdfs/sg244877.pdf

- **IBM Tivoli Storage Manager Backup-Archive Clients Installation and User's Guide**
  - http://publib.boulder.ibm.com/infocenter/tivihelp/v1r1/index.jsp?toc=/com.ibm.itstorage.doc/toc.xml

- **DCF Document ID: 1121552 - TSM Client V5.2 Open File Support**
  http://www-1.ibm.com/support/

- **DCF Document ID: 1189577 - TSM LVSA (Logical Volume Snapshot Agent) additional considerations.**
  http://www-1.ibm.com/support/

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