

The TSM Client



Diagnostics

Tivoli

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Introduction

- This presentation is about gathering diagnostic information for problems with the TSM client.
- Ultimately you may not be able to resolve the problem on your own, but should you need to contact TSM support, you will be better prepared to provide the necessary information. This in turn will help expedite problem identification and resolution.

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Agenda

- Understanding the problem
- Gathering documentation
- Tracing
- Reporting the problem
- Miscellaneous information



Understanding the problem



Check the usual suspects (1)

- What, if any, error messages were issued?
 - ANSnnnnx messages issued to the console or dsmsched.log.
 - dsmerror.log.
 - Look up the messages in the *Messages* manual or use the client online help:
 - Type HELP from the CLI, then navigate the menu to find information on the message(s).
 - The *Messages* manual is available online at www.tivoli.com.
- What else does the console or dsmsched.log show?
 - For scheduled events, it may be helpful to disable the QUIET option if it is in use.
- For connection failures, check the network.

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Check the usual suspects (2)

- If you changed client options, did you remember to restart the scheduler?
- If you made policy changes, did you remember to activate the policy set?
- Are your include/exclude statements in proper order and coded correctly?
 - I see this one a lot:
`EXCLUDE C:\MYDIR*.*`
“Why is C:\MYDIR\MYFILE backed up?”
- Are you connecting to the correct TSM server?

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Narrow the scope of the problem (1)

- Is the problem recreatable?
 - Recreating the problem is 80% of the battle.
 - This should be step #1 in diagnosing any problem.
- Does the problem occur...
 - ...on one, some, or all machines?
 - ...on one, some, or all operating systems?
 - ...for one, some, or all files?
 - ...for one, some, or all nodes?
 - ...on one, some, or all parts of the network?
 - ...with the CLI, GUI, and/or Web client?
 - ... in the same place each time?



Narrow the scope of the problem (2)

- If the problem is recreatable, try minimizing the circumstances under which it can occur.
 - Use a minimal options file:
 - commmethod
 - tcpserveraddress
 - nodename
 - If the problem occurs for a file during incremental backup, can you recreate with just a selective backup of the file?
 - If the problem occurs during a scheduled event, can you recreate by running the command manually?



Check the TSM server

- Sometimes the TSM server may have helpful information.
- Check the activity log from the time the client connected through the time of the failure.
 - Be sure to account for possible time-of-day clock differences between the client and server. Hint: running DSMC Q SE will show you the current server date and time.



Obtain a history of the problem

- When did the problem start to occur?
- Did the operation ever work correctly, or has it always failed?
- If the operation worked correctly before, what (if anything) changed in the environment?
 - TSM Client settings
 - Client machine changes
 - Server settings
 - Server machine changes
 - Network settings
 - Procedural changes



Is this a known problem?

- Review the README files, which include known problems and limitations, as well as a list of APARs that have been fixed.
- Check whether you are running the latest client version. If not, check the latest client README file to see if your problem is described.
- Check the product manuals to see whether the behavior is intentional.
- Check the ADSM-L archives at www.adsm.org.
- Try posting ADSM-L to see if another user has experienced the same problem.

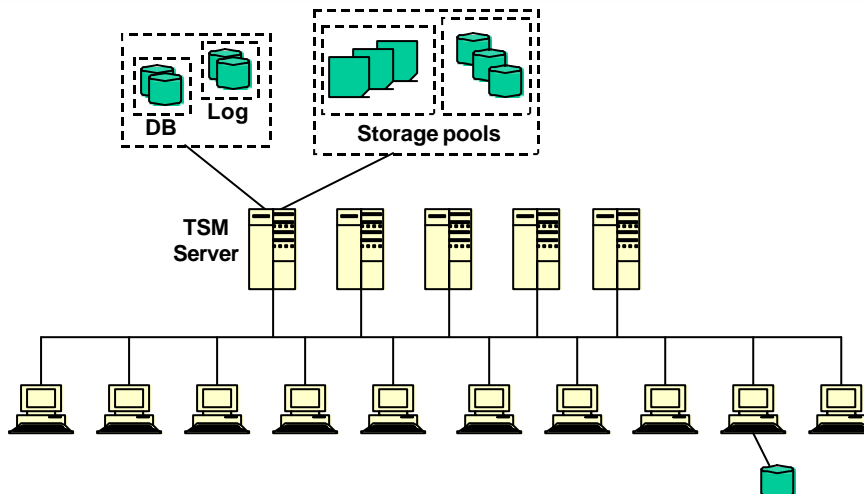
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Is a problem with the client a client problem? (1)



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Is a problem with the client a client problem? (2)

- While the problem may manifest itself in the client, the root cause could be elsewhere:
 - Other client software
 - Client hardware
 - Network
 - TSM server
 - User



Gathering documentation



Items to collect (1)

- Client items (as appropriate)
 - Error log (dsmerror.log)
 - Scheduler log (dsm Sched.log)
 - Web client log (dsmwebcl.log)
 - Options file(s)
 - dsm.opt
 - dsm.sys if UNIX
 - inclexcl file
 - Trace
 - Application dump (useful when the client crashes)
 - Memory dump (useful when the client hangs)
 - List of all software installed on the client system

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Items to collect (2)

- Server items (as appropriate)
 - Client options set (Q CLOPT)
 - Server activity log (Q ACTLOG)
 - Server options (Q OPT)
 - Server settings (Q STATUS)
 - Client node settings (Q *nodename* F=D)
 - Client schedule settings (Q *domain schedname* F=D)
 - Policy set information
 - Q MG *domain policy* F=D
 - Q CO *domain policy* F=D

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Tracing



Obtaining a SERVICE trace

- Stop the client.
- Add the following to dsm.opt:
 - TRACEMAX n
 - $10 \leq n \leq 10000$
 - n is in KB
 - TRACEFILE *filename*
 - TRACEFLAGS SERVICE
- Recreate the problem.
- Stop the client.
- Remove the trace options.

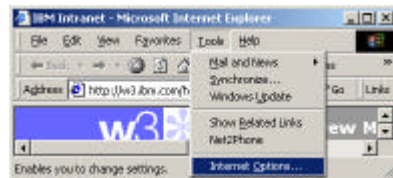
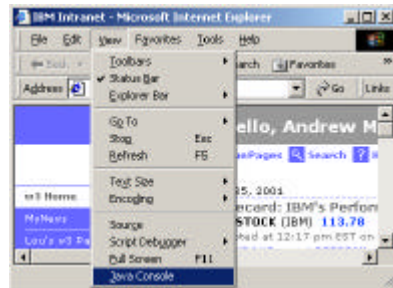
```
DSMLOPT - Notepad
File Edit Format Help
commethod tcpip
tcpserveraddress storwan.tucson.ibm.com
nodename storwan
passwordaccess generate

tracemax 5000
tracefile g:\esm\baclient\smtrace.txt
traceflags service
```



Obtaining a Web GUI trace (1) – IE only

- Make sure that the Java Console for Internet Explorer is enabled:
 - Look for menu **View/Java Console**
 - **If Java Console does not appear, then:**
 - Select menu item **Tools/Internet Options...**
 - Click on the **Advanced** tab



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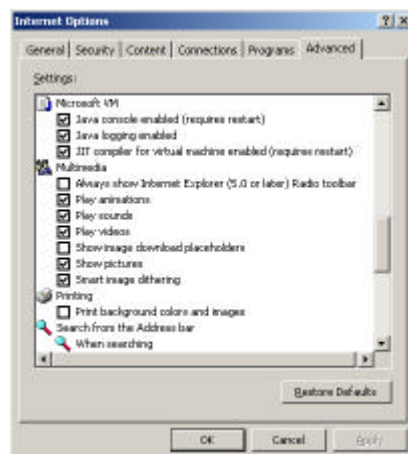
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Obtaining a Web GUI trace (2) – IE only

- Under **Microsoft VM**, enable the following:
 - Java console enabled
 - Java logging enabled
 - JIT compiler for virtual machine enabled
- Click **OK**
- Shut down IE, then restart.
- **Java Console** should now appear in the **View** menu.



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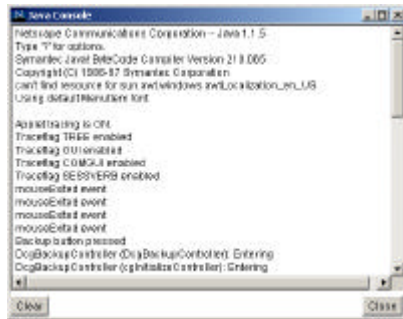
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Obtaining a Web GUI trace (5)

- Recreate the problem.
 - Note that the Java Console will fill with trace data.
- After the problem has occurred, collect the trace data from the Java Console



Reporting the problem



Describing the problem (1)

- While gathering the previously mentioned documentation is not a pre-requisite to contacting support, it will certainly help make the most of that first phone call to support.
- A good, accurate problem description is important.
 - Bad: “Whenever I run the scheduler, the backup doesn’t work. What’s wrong?”
 - Good: “Whenever I run a scheduled incremental backup of my C: drive, I get error message ANSnnnnx. But when I run DSMC INCREMENTAL C:, it runs just fine. What’s wrong?”



Describing the problem (2)

- In addition to a good, general description of the problem, be prepared to include:
 - History of the problem.
 - Scope of the problem.
 - Documentation (as described earlier).
 - A detailed step-by-step, mouse-click-by-mouse-click, recreate scenario (whenever possible). For CLI problems, provide **exact** syntax used, and exact text of messages received.



Describing the problem (3)

- Exact client version (i.e. 4.1.2.14)
 - If unsure, click “Help/About...” from the GUI or run DSMC QUIT
- Exact server version (i.e. 4.2.0.1)
 - If unsure, click “File/Connection Information” from the GUI or run DSMC Q SE
- Exact client operating system name, version, and release.
For Windows NT or 2000, be sure to specify Workstation, Professional, Advanced Server, etc.



Miscellaneous information



Where to Get More Information (1)

- Required reading:
 - Administrator's Guide (cover-to-cover!)
 - Administrator's Reference
 - Using the Backup-Archive Client (cover-to-cover!)
 - Client README files
- Useful redbooks:
 - SG24-6110: Tivoli Storage Manager Version 3.7.3 & 4.1: Technical Guide
 - SG24-6277: Tivoli Storage Manager Version 4.2: Technical Guide



Where to Get More Information (2)

- Useful internet sites:
 - Tivoli
 - <http://www.tivoli.com>
 - <http://www.tivoli.com/products/solutions/storage/news.html>
 - IBM
 - <http://www.redbooks.ibm.com>
 - ADSM.ORG
 - <http://www.adsm.org>
 - Other search engines
 - <http://www.google.com>
 - <http://groups.google.com>
 - <http://www.altavista.com>
 - <http://www.yahoo.com>



Where to Get More Information (3)

- ADSM-L
 - A list server maintained by Marist College whose membership consists of both customers and IBMers (over 1,600 subscribers).
 - “Users helping users”.
 - Not an official support channel for TSM, although several developers monitor it.
 - Not funded or maintained by IBM.
 - To subscribe, send an e-mail as follows:
 - Address: listserv@vm.marist.edu
 - Subject: N/A
 - Body: **subscribe ADSM-L yourname**
 - Example: subscribe ADSM-L Andy Raibeck



“Raibeck’s Rules”

- **Never** take anything for granted.
- A TSM problem is not always a TSM problem.
- **Know your resources!**
- It’s not what you know, it’s knowing where to find it.
- The only dumb question is the one that goes unasked.
- The command line is your friend.

