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# See in Memory Descriptor List whats on Posted by Steffen78 - 22 Feb 2010 - 13:29

Hello Girls and Boys,

i have a problem with a w2k3 server ent. sp2. The machine is an x86 32bit system with an MS SQL 2005 installed for enteo, the server part of enteo is ionstalled to, antivirus is mcafee.

Now the problem, the "non paged pool" is running out of free space till the server is crashing. the "biggest" pooltag in poolmon is the "mdl".

Is there a way to analyze with driver is exhausting the mdl. can i analyze this problem with a full memory dump or should i take the driver verifier for this?

thank you very much for your help.

sorry about my english.

## Re: See in Memory Descriptor List whats on Posted by Robert Kuster - 03 Apr 2010 - 15:17

Steffen welcome.

It is easy to find out which driver is leaking or consuming a lot of memory.

### Theory

In order to use Pool tags one generally has to enable them with GFlags -> System Registry -> "Enable pool tagging". Luckily on Windows Server 2003 pool tagging is always enabled. From the documentation: "Pool tagging is permanently enabled on Windows Server 2003 and later versions of Windows, including Windows Vista. On these systems, the Enable pool tagging check box on the Global Flags dialog box is dimmed and commands to enable or disable pool tagging fail.". Also alongside your WinDbg installation you should find .. Debugging Tools for Windows (x86)triage pooltag.txt which lists all tags used by kernel mode components and drivers. Here is what it says about the Mdl tag:

Mdl - - Io, Mdls

MDLs are described here: What Is Really in That MDL? Further you should use Driver Verifier to track Pool Usage and configure it as follows: "Create custom settings" -> Next "Selet individual settings from a full list" -> NextSelect "Pool tracking" -> Next"Automatically select all drivers installed on this computer" -> Finish. Restart computer

Start Driver Verifier Manager again an select "Display information about currently verified drivers" -> Next (3x). Now you will see the pool usage of each driver:

http://windbg.info/images/fbfiles/images/pool usage.PNG

### In WinDbg

After enabling driver verifier you can get even more information from WinDbg. Attach WinDbg as a kernel debugger to the target machine and use the following commands:

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0: kd>!verifier 1

**Driver Verification List** 

Entry	State	NonPagedPool	PagedPool	Module
	e8 Loaded	00000000	00000000	kdcom.dll
	68 Loaded f0 Loaded	00000000 00023708	00000000 00003760	BOOTVID.dll ACPI.sys
	70 Loaded	0000000	00000000	WMILIB.SYS
8a7e64	80 Loaded	00003710	0001b310	pci.sys

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; to see all individual allocations of each driver

0: kd> !verifier 0x3

**Driver Verification List** 

Entry	State	NonPagedPool	PagedPool	Module
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8a7e6df0 Loaded 00023708 00003760 ACPI.sys

 Current Pool Allocations
 00000059
 00000023

 Current Pool Bytes
 00023708
 00003760

 Peak Pool Allocations
 000000d3
 0000002d

 Peak Pool Bytes
 00024b88
 00003be8

PoolAddress	SizeInBytes	Tag	CallersAddress
e10115a8	0x00000080	AcpM	b9fa1c47
8a783148	0x0000018	AcpS	b9f7fabb
8a7bd148	0x0000018	AcpS	b9f7fae7
8a786a10	0x00000030	AcpS	b9f836a6
8a7c0130	0x0000030	AcpR	b9f877c9

....

I hope this helps, Robert