



# Minidump Browser

by

Software Verify

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# Minidump Browser

**Easily inspect Minidump contents.**

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*by Software Verify Limited*

*Welcome to the Minidump Browser software tool.*

*Minidump Browser is a software tool that allows you to inspect the contents of minidumps.*

*We hope you will find this document useful.*

# MiniDump Browser Help

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**Part**



# 1 How to get Minidump Browser

Minidump Browser is free for commercial use. Minidump Browser can be downloaded for Software Verify's website at <https://www.softwareverify.com/product/minidump-browser/>.

This help manual is available in Compiled HTML Help (Windows Help files), PDF, and online.

Windows Help	<a href="https://www.softwareverify.com/documentation/chm/miniDumpBrowser.chm">https://www.softwareverify.com/documentation/chm/miniDumpBrowser.chm</a>
PDF	<a href="https://www.softwareverify.com/documentation/pdfs/miniDumpBrowser.pdf">https://www.softwareverify.com/documentation/pdfs/miniDumpBrowser.pdf</a>
Online	<a href="https://www.softwareverify.com/documentation/html/miniDumpBrowser/index.html">https://www.softwareverify.com/documentation/html/miniDumpBrowser/index.html</a>

Whilst Minidump Browser is free for commercial use, Minidump Browser is copyrighted software and is not in the public domain.

You are free to use the software at your own risk.

You are not allowed to distribute the software in any form, or to sell the software, or to host the software on a website.

## Contact

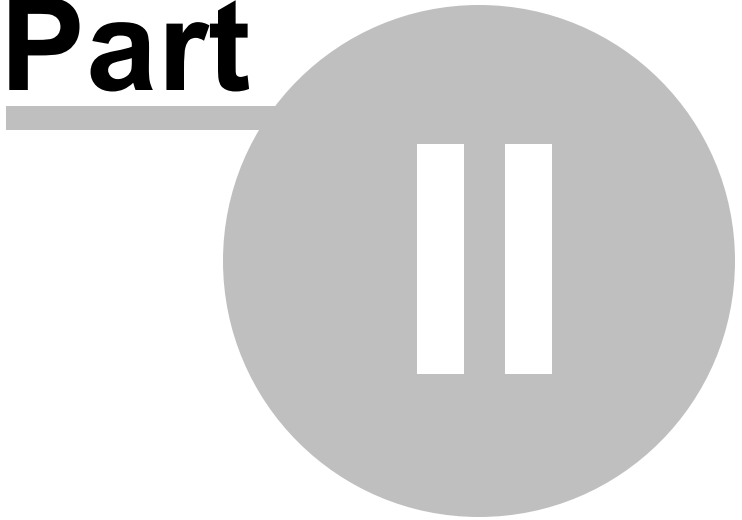
Contact Software Verify at:

Software Verify Limited  
Suffolk Business Park  
Eldo House  
Kempson Way  
Bury Saint Edmunds  
IP32 7AR  
United Kingdom

email [sales@softwareverify.com](mailto:sales@softwareverify.com)  
web <https://www.softwareverify.com>  
blog <https://www.softwareverify.com/blog>  
twitter <http://twitter.com/softwareverify>

Visit our blog to read our articles on debugging techniques and tools.  
Follow us on twitter to keep track of the latest software tools and updates.

**Part**



## 2 What does Minidump Browser do?

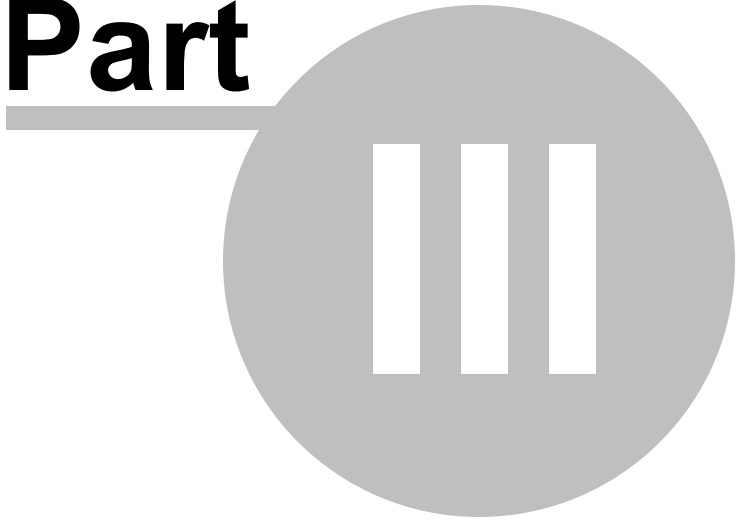
Minidump Browser allows you to view kernel dumps and minidumps on your machine, or your network.

### **32 bit and 64 bit**

32 bit and 64 bit kernel dumps are supported.

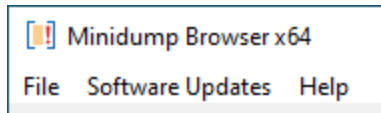
32 bit and 64 bit minidumps are supported.

**Part**



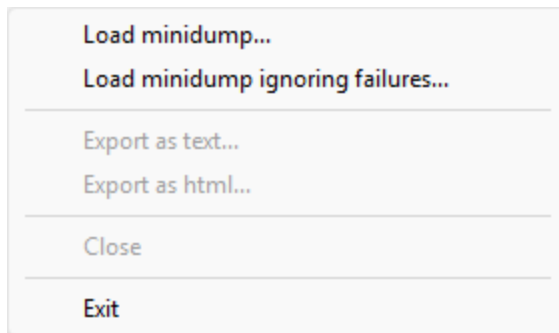
## 3 Menu

The main menu contains three menus, File, Software Updates and Help.



### 3.1 File

The Tools menu controls the scanning and display of minidumps.



**File menu > Load minidump...** > loads a kernel dump or a minidump and displays it.

If the kernel dump or minidump is the wrong bit depth (32 bit when running 64 bit, or vice versa) then the other version of Minidump browser is started to display the minidump.

If any errors occur when trying to load the minidump, the load fails. This means that minidumps from ARM, IA64 and other architectures can't be displayed.

**File menu > Load minidump ignoring failures...** > loads a minidump and displays it.

If the minidump is the wrong bit depth (32 bit when running 64 bit, or vice versa) then the other version of Minidump browser is started to display the minidump.

If any errors occur when trying to load the minidump, the load fails to load just the failing part of the minidump and continues with other parts of the minidump. This means that minidumps from ARM, IA64 and other architectures can be displayed, but may have incomplete information.

**File menu > Export as text** > displays the Export as Text dialog.

**File menu > Export as HTML** > displays the Export as HTML dialog.

**File menu > Close** > closes the Minidump.

**File menu > Exit** > closes Minidump Browser.

## 3.2 Settings

The Settings menu allows you to edit the settings.

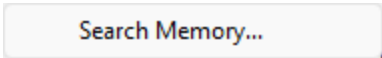


Edit Settings...

**Settings** menu > **Edit Settings...** > edit the settings using the Settings dialog.

## 3.3 Inspect

The Inspect menu allows you to view arbitrary memory, or to search for memory.



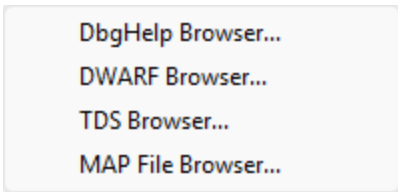
Search Memory...

**Inspect** menu > **Search memory...** > search for a text string or a sequence of bytes. The Search Memory Dialog is displayed.

## 3.4 Tools

The File menu allows you to launch tools to read particular types of debugging information.

This is useful for decoding addresses if MiniDump Browser has been unable to successfully generate symbols for addresses in the minidump (or kernel dump)



DbgHelp Browser...  
DWARF Browser...  
TDS Browser...  
MAP File Browser...

**File** menu > **DbgHelp Browser...** > starts DbgHelp Browser.

**File** menu > **DWARF Browser...** > starts DWARF Browser.

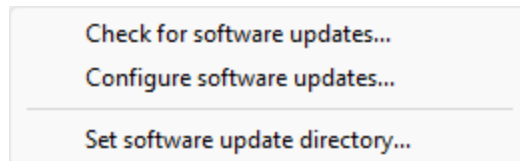
**File** menu > **TDS Browser...** > starts TDS Browser.

**File** menu > **MAP File Browser...** > starts MAP File Browser.

## 3.5 Software Updates


The Software Updates menu controls how often software updates are downloaded.

If you've been notified of a new software release to Minidump Browser or just want to see if there's a new version, this feature makes it easy to update.

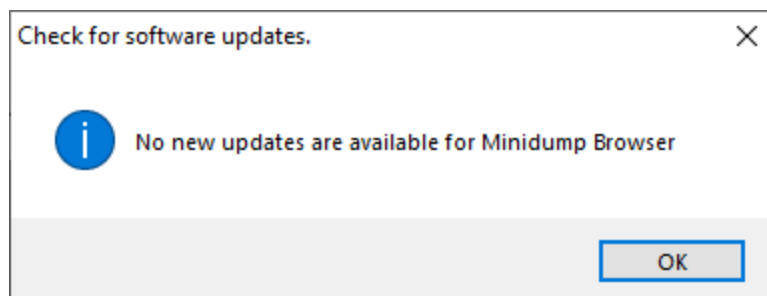


 **Software Updates** menu > **Check for software updates** > checks for updates and shows the software update dialog if any exist

An internet connection is needed to be able to make contact with our servers.

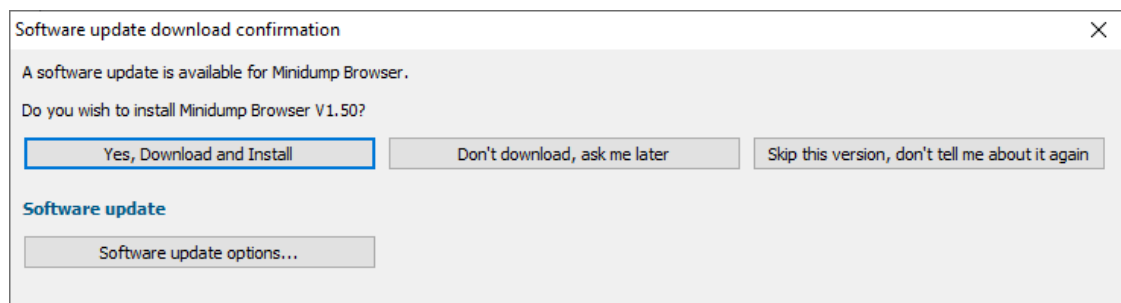
 Before updating the software, close the help manual, and end any active session by closing target programs.

If no updates are available, you'll just see this message:

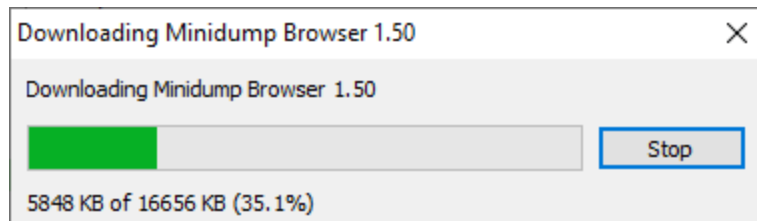


### Software Update dialog

If a software update is available for Minidump Browser you'll see the software update dialog.



- **Download and install** > downloads the update, showing progress



Once the update has downloaded, Minidump Browser will close, run the installer, and restart.

You can stop the download at any time, if necessary.

- **Don't download...** > Doesn't download, but you'll be prompted for it again next time you start Minidump Browser
- **Skip this version...** > Doesn't download the update and doesn't bother you again until there's an even newer update
- **Software update options...** > edit the software update schedule

## Problems downloading or installing?

If for whatever reason, automatic download and installation fails to complete:

- Download the latest installer manually from the software verify website.

Make some checks for possible scenarios where files may be locked by Minidump Browser as follows:

- Ensure Minidump Browser and its help manual is also closed
- Ensure any error dialogs from the previous installation are closed

You should now be ready to run the new version.

## Software update schedule

Minidump Browser can automatically check to see if a new version of Minidump Browser is available for downloading.

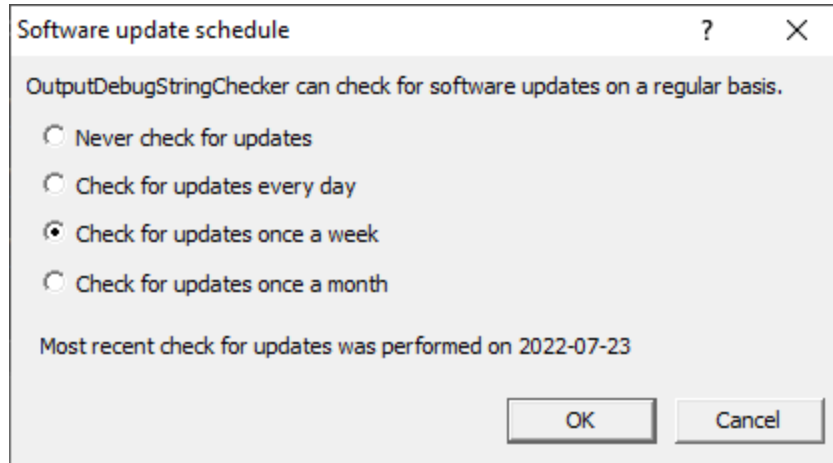
 **Software Updates** menu > **Configure software updates** > shows the software update schedule dialog

The update options are:

- never check for updates
- check daily (the default)

- check weekly
- check monthly

The most recent check for updates is shown at the bottom.

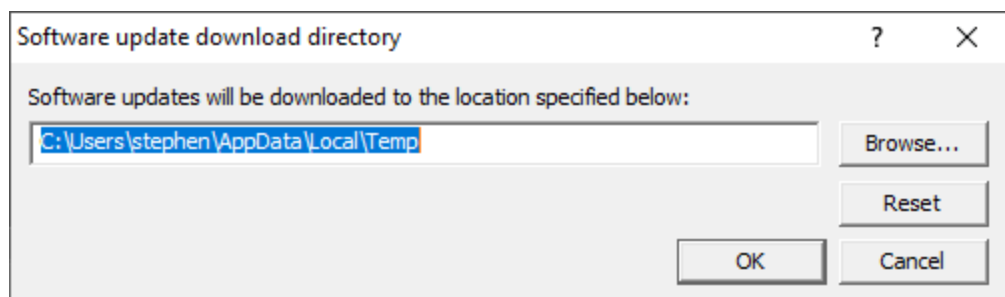


## Software update directory

It's important to be able to specify where software updates are downloaded to because of potential security risks that may arise from allowing the `TMP` directory to be executable. For example, to counteract security threats it's possible that account ownership permissions or antivirus software blocks program execution directly from the `TMP` directory.

The `TMP` directory is the default location but if for whatever reason you're not comfortable with that, you can specify your preferred download directory. This allows you to set permissions for `TMP` to deny execute privileges if you wish.

 **Software Updates** menu > **Set software update directory** > shows the Software update download directory dialog




An invalid directory will show the path in red and will not be accepted until a valid folder is entered.

Example reasons for invalid directories include:

- the directory doesn't exist
- the directory doesn't have write privilege (update can't be downloaded)

- the directory doesn't have execute privilege (downloaded update can't be run)

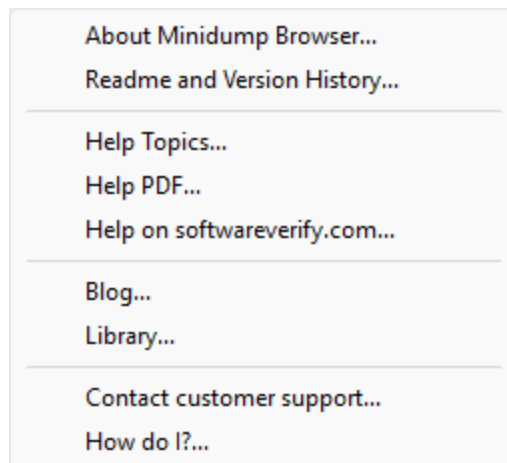
 When modifying the download directory, you should ensure the directory will continue to be valid. Updates may no longer occur if the download location is later invalidated.

- **Reset** > reverts the download location to the user's `TEMP` directory

The default location is `c:\users\[username]\AppData\Local\Temp`

## 3.6 Help

The Help menu controls displaying this help document and displaying information about Minidump Browser.



**Help menu > About Minidump Browser...** > displays information about Minidump Browser.

**Help menu > Readme and Version History...** > displays the readme and version history.

**Help menu > Help Topics...** > displays this help file.

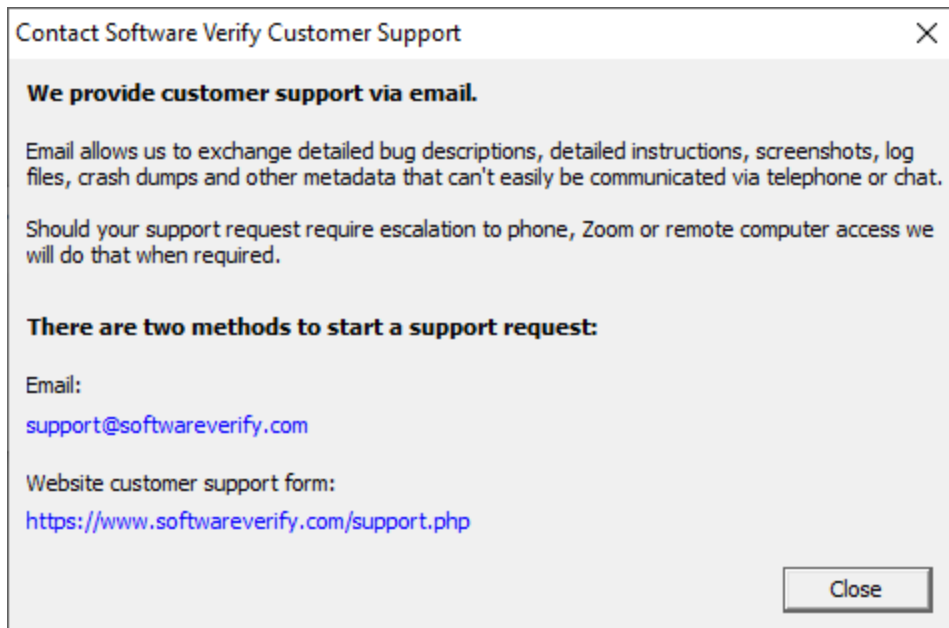
**Help menu > Help PDF...** > displays this help file in PDF format.

**Help menu > Help on softwareverify.com...** > display the Software Verify documentation web page where you can view online documentation or download compiled HTML Help and PDF help documents.

**Help menu > Blog...** > display the Software Verify blog.

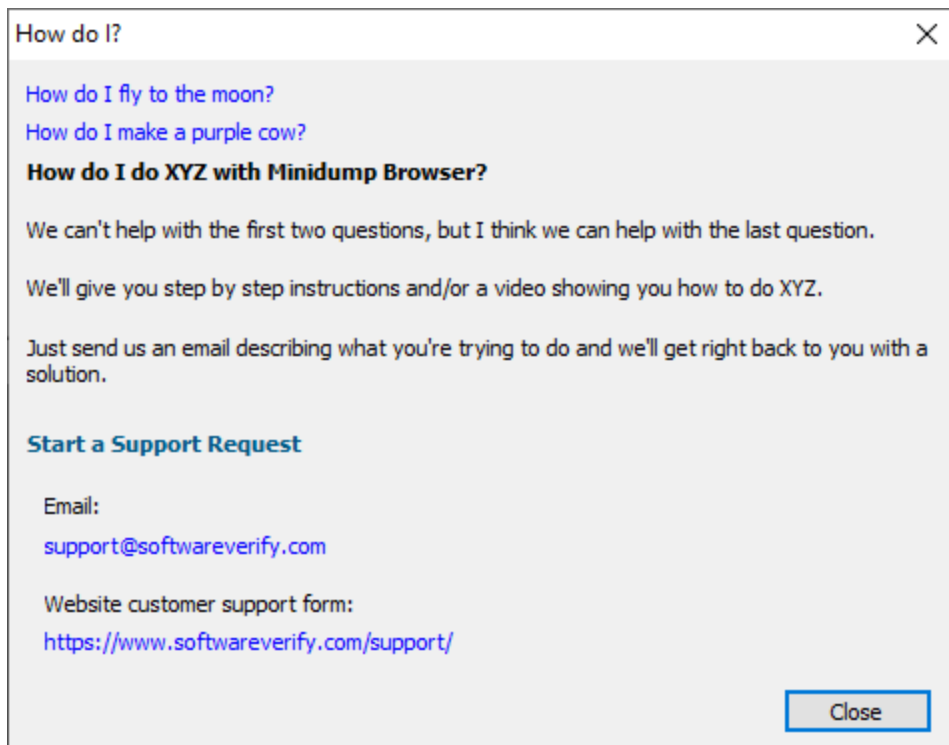
**Help menu > Library...** > display the Software Verify library - our best blog articles grouped by related topics.

**Help menu > Contact customer support...** > displays the options for contacting customer support.



Click a link to contact customer support.

**Help** menu > **How do I?...** > displays the options for asking us how to do a particular task.



**Part**



## 4 The user interface

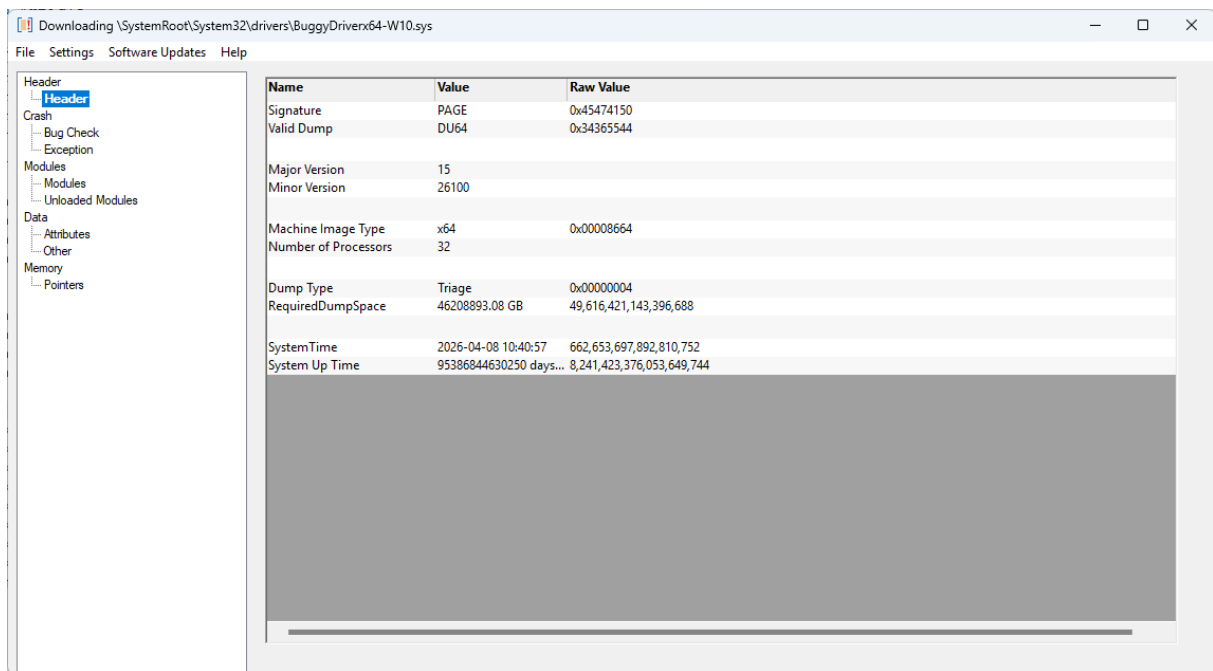
Enter topic text here.

### 4.1 Kernel dumps (Blue Screen of Death)

The Kernel Dump Browser user interface is shown below.

When a kernel dump contains an exception the exception display will be automatically selected as the first display to show you information.

*Not all information in a kernel dump is valid. Information that isn't valid has the same value as the signature field: 0x45474150.*



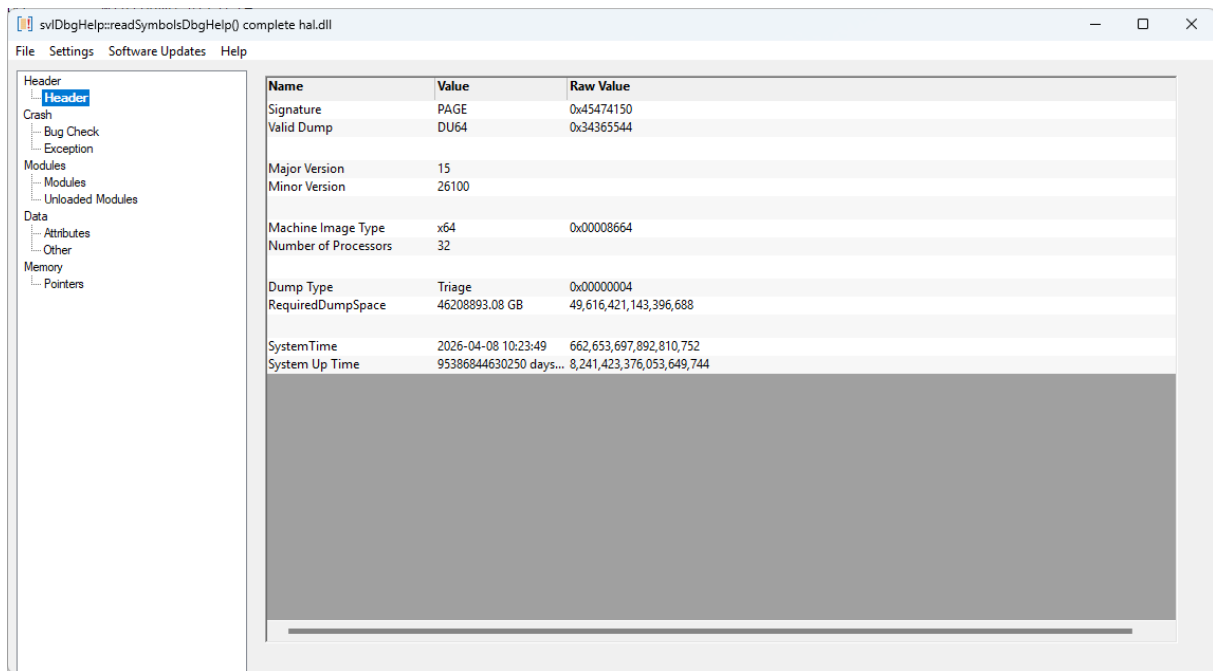
The display shows six pages of data about the kernel dump.

Each page is listed on the left hand side. Selecting that entry displays the page on the right hand side.

#### 4.1.1 Header

##### 4.1.1.1 Header

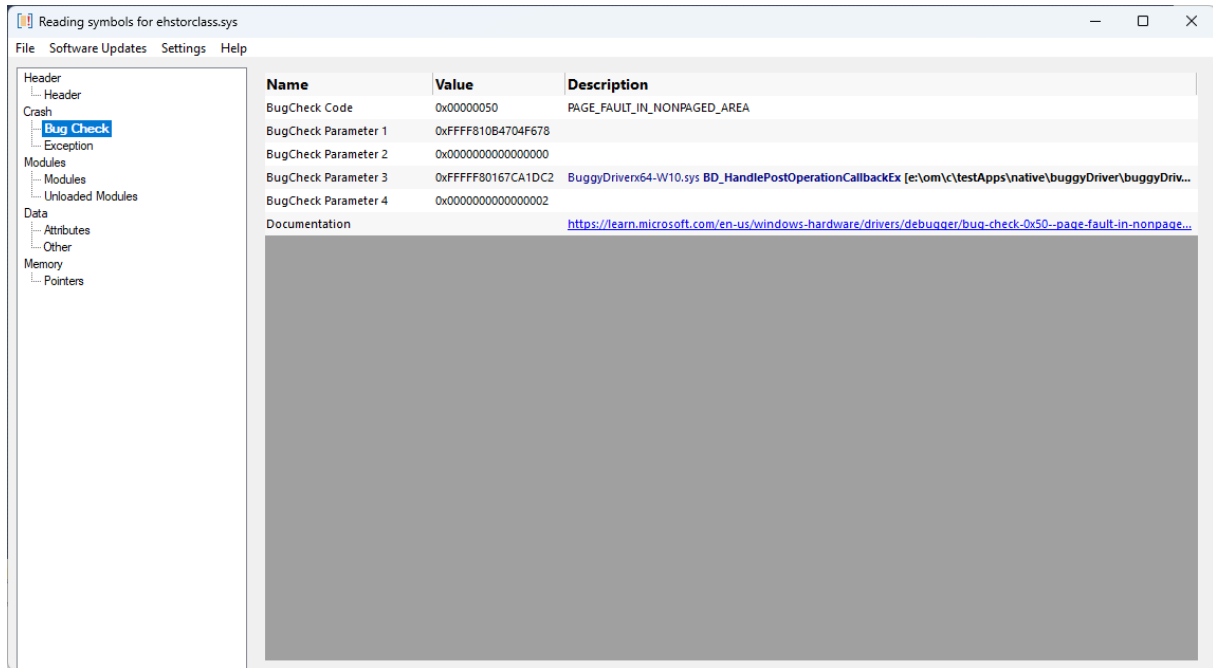
The Header page displays general information about the kernel dump.



## 4.1.2 Crash

### 4.1.2.1 Bug Check

The Bug Check page displays exception information from the kernel dump.

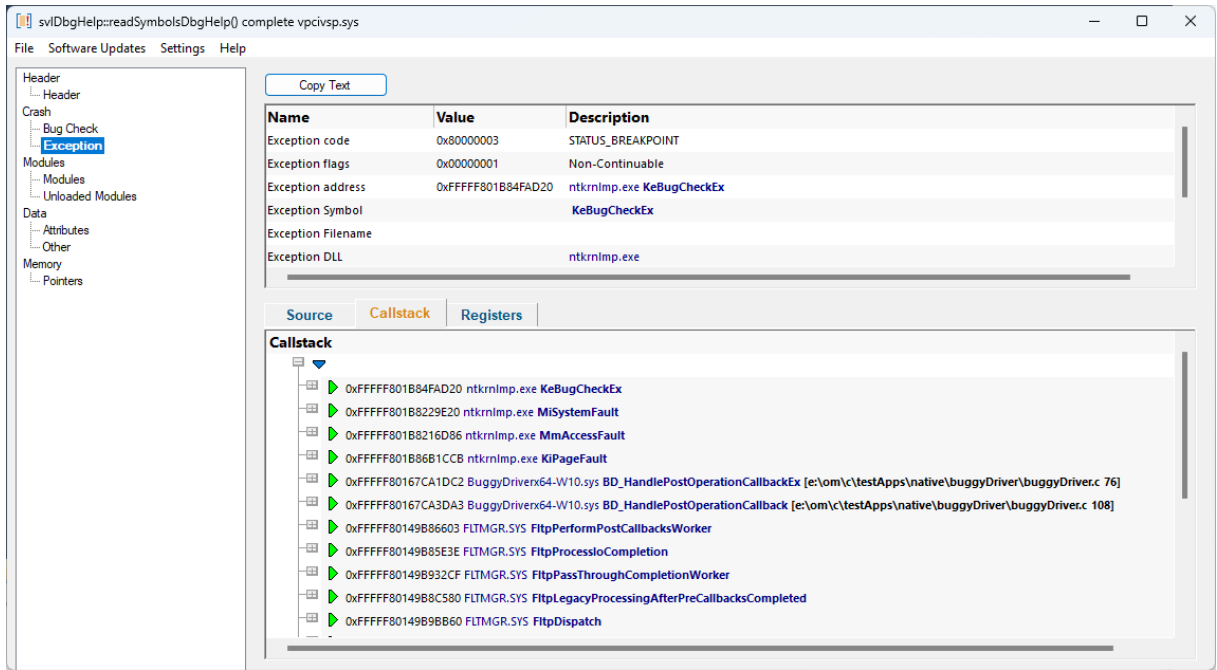


For each BugCheck code we provide a link to the official Microsoft documentation for the BugCheck. Clicking the link will open the default web browser.

Where possible we decode addresses into human readable symbol information: module, function, filename and line number.

#### 4.1.2.2 Exception

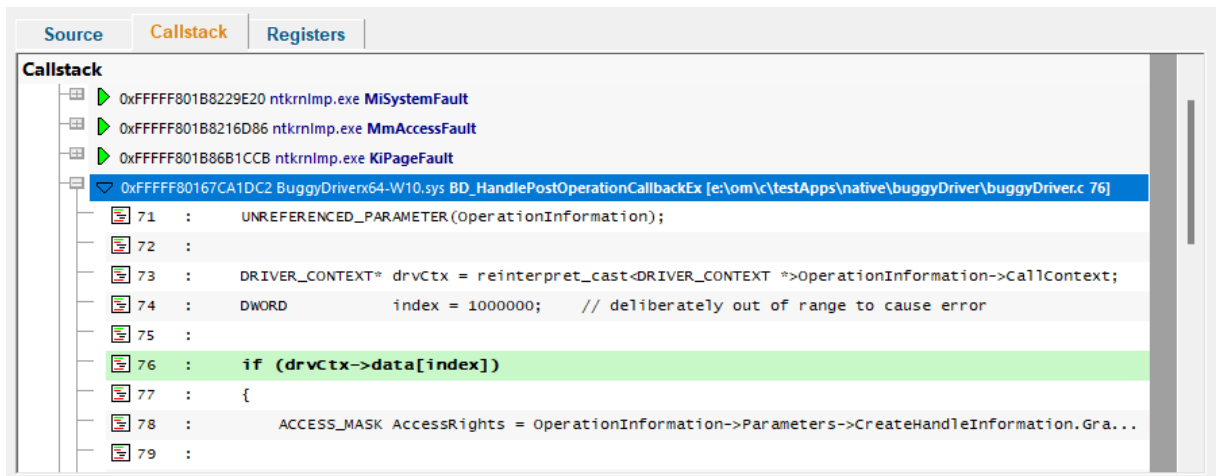
The Exception page displays exception information from the kernel dump.



The top view shows exception specific information.

The lower view shows the source code for the crash location (if filename and line number information is available), the exception callstack, and all the registers from the exception CONTEXT.

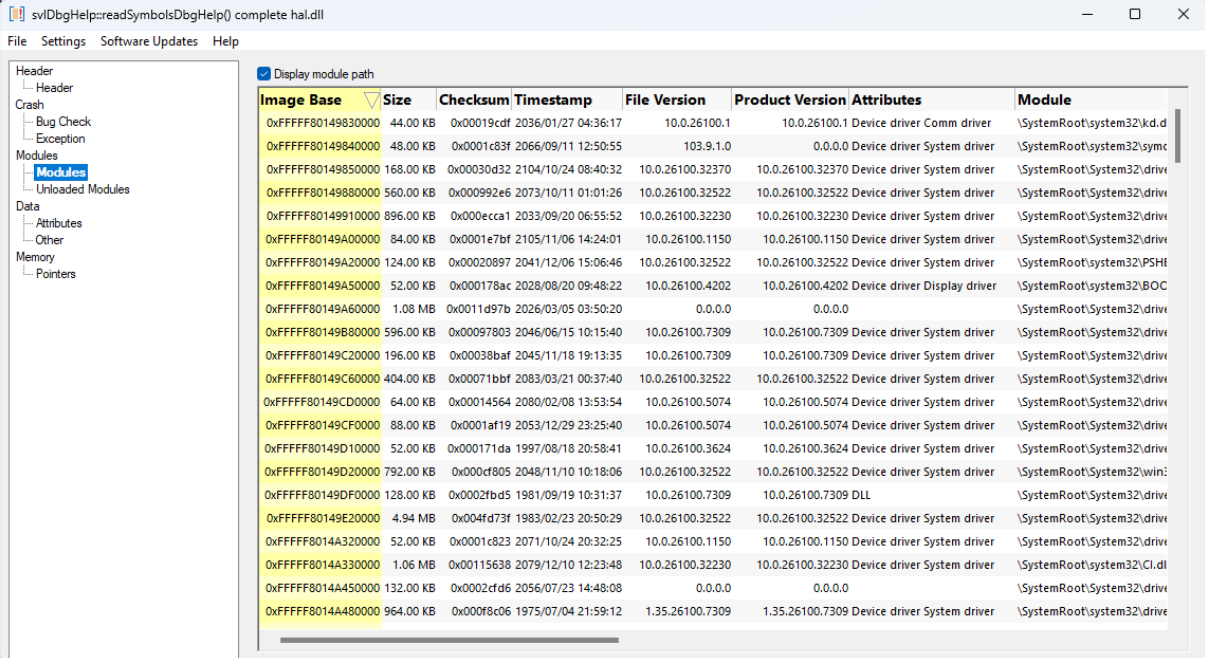
Expanding any callstack node will display source code for that location (if filename and line number information is available).



## 4.1.3 Modules

### 4.1.3.1 Modules

The Modules page displays the loaded modules in the kernel dump.



The screenshot shows the 'Modules' page in the MiniDump Browser. The interface includes a sidebar with navigation options like 'Header', 'Crash', 'Bug Check', 'Exception', 'Modules', 'Data', and 'Memory'. The 'Modules' section is selected, and a table of loaded modules is displayed. The table has columns for Image Base, Size, Checksum, Timestamp, File Version, Product Version, Attributes, and Module. The 'Display module path' checkbox is checked.

Image Base	Size	Checksum	Timestamp	File Version	Product Version	Attributes	Module
0xFFFFF80149830000	44.00 KB	0x00019cdf	2036/01/27 04:36:17	10.0.26100.1	10.0.26100.1	Device driver Comm driver	\SystemRoot\system32\kd.d
0xFFFFF80149840000	48.00 KB	0x0001c83f	2066/09/11 12:50:55	103.9.1.0	0.0.0.0	Device driver System driver	\SystemRoot\system32\symc
0xFFFFF80149850000	168.00 KB	0x00030d32	2104/10/24 08:40:32	10.0.26100.32370	10.0.26100.32370	Device driver System driver	\SystemRoot\System32\driv
0xFFFFF80149880000	560.00 KB	0x000992e6	2073/10/11 01:01:26	10.0.26100.32522	10.0.26100.32522	Device driver System driver	\SystemRoot\System32\driv
0xFFFFF80149910000	896.00 KB	0x000ecc1	2033/09/20 06:55:52	10.0.26100.32230	10.0.26100.32230	Device driver System driver	\SystemRoot\System32\driv
0xFFFFF80149A00000	84.00 KB	0x0001e7bf	2105/11/06 14:24:01	10.0.26100.1150	10.0.26100.1150	Device driver System driver	\SystemRoot\System32\driv
0xFFFFF80149A20000	124.00 KB	0x00020897	2041/12/06 15:06:46	10.0.26100.32522	10.0.26100.32522	Device driver System driver	\SystemRoot\system32\PSHI
0xFFFFF80149A50000	52.00 KB	0x000178ac	2028/08/20 09:48:22	10.0.26100.4202	10.0.26100.4202	Device driver Display driver	\SystemRoot\system32\BOC
0xFFFFF80149A60000	1.08 MB	0x0011d97b	2026/03/05 03:50:20	0.0.0.0	0.0.0.0		\SystemRoot\System32\driv
0xFFFFF80149B80000	596.00 KB	0x00097803	2046/06/15 10:15:40	10.0.26100.7309	10.0.26100.7309	Device driver System driver	\SystemRoot\System32\driv
0xFFFFF80149C20000	196.00 KB	0x00038baf	2045/11/18 19:13:35	10.0.26100.7309	10.0.26100.7309	Device driver System driver	\SystemRoot\System32\driv
0xFFFFF80149C60000	404.00 KB	0x00071bbf	2083/03/21 00:37:40	10.0.26100.32522	10.0.26100.32522	Device driver System driver	\SystemRoot\System32\driv
0xFFFFF80149CD0000	64.00 KB	0x00014564	2080/02/08 13:53:54	10.0.26100.5074	10.0.26100.5074	Device driver System driver	\SystemRoot\System32\driv
0xFFFFF80149CF0000	88.00 KB	0x0001af19	2053/12/29 23:25:40	10.0.26100.5074	10.0.26100.5074	Device driver System driver	\SystemRoot\System32\driv
0xFFFFF80149D10000	52.00 KB	0x000171da	1997/08/18 20:58:41	10.0.26100.3624	10.0.26100.3624	Device driver System driver	\SystemRoot\System32\driv
0xFFFFF80149D20000	792.00 KB	0x000cf805	2048/11/10 10:18:06	10.0.26100.32522	10.0.26100.32522	Device driver System driver	\SystemRoot\System32\win:
0xFFFFF80149DF0000	128.00 KB	0x0002fbd5	1981/09/19 10:31:37	10.0.26100.7309	10.0.26100.7309	DLL	\SystemRoot\System32\driv
0xFFFFF80149E20000	4.94 MB	0x004fd73f	1983/02/23 20:50:29	10.0.26100.32522	10.0.26100.32522	Device driver System driver	\SystemRoot\System32\driv
0xFFFFF8014A320000	52.00 KB	0x0001c823	2071/10/24 20:32:25	10.0.26100.1150	10.0.26100.1150	Device driver System driver	\SystemRoot\System32\driv
0xFFFFF8014A330000	1.06 MB	0x00115638	2079/12/10 12:23:48	10.0.26100.32230	10.0.26100.32230	Device driver System driver	\SystemRoot\system32\Ci.dl
0xFFFFF8014A450000	132.00 KB	0x0002efd6	2056/07/23 14:48:08	0.0.0.0	0.0.0.0		\SystemRoot\System32\driv
0xFFFFF8014A480000	964.00 KB	0x000f8c06	1975/07/04 21:59:12	1.35.26100.7309	1.35.26100.7309	Device driver System driver	\SystemRoot\system32\driv

For each module in the kernel dump this page displays the following information, dll load address (image base), size, checksum, timestamp, file version, product version, application attributes and module name (with optional path).

Some of the information can only be obtained once the module has been downloaded from a symbol server (usually Microsoft's symbol server).

### 4.1.3.2 Unloaded Modules

The Unloaded Modules page displays the unloaded modules in the kernel dump.

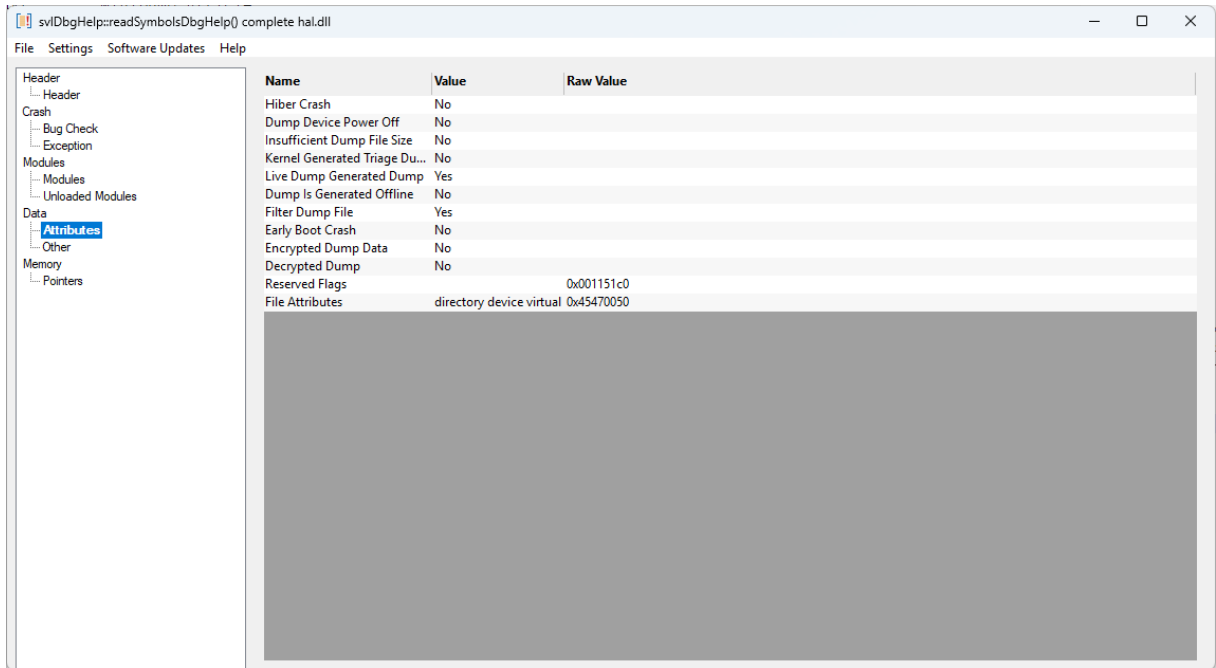
Image Base	Size	Checksum	Timestamp	Module	Flags	Symbol Type
0xFFFFFFFF167A10000	1.08 MB	0x00000000	1970/01/01 00:00:00	FileSightMfx	Module Loaded, Kernel NONE	
0xFFFFFFFF1677C0000	1.08 MB	0x00000000	1970/01/01 00:00:00	FileSightMfx	Module Loaded, Kernel NONE	
0xFFFFFFFF167920000	104.00 KB	0x00000000	1970/01/01 00:00:00	IndirectKmd.	Module Loaded, Kernel NONE	
0xFFFFFFFF167900000	104.00 KB	0x00000000	1970/01/01 00:00:00	IndirectKmd.	Module Loaded, Kernel NONE	
0xFFFFFFFF1678E0000	104.00 KB	0x00000000	1970/01/01 00:00:00	IndirectKmd.	Module Loaded, Kernel NONE	
0xFFFFFFFF167060000	104.00 KB	0x00000000	1970/01/01 00:00:00	IndirectKmd.	Module Loaded, Kernel NONE	
0xFFFFFFFF167600000	1.08 MB	0x00000000	1970/01/01 00:00:00	FileSightMfx	Module Loaded, Kernel NONE	
0xFFFFFFFF1673E0000	1.08 MB	0x00000000	1970/01/01 00:00:00	FileSightMfx	Module Loaded, Kernel NONE	
0xFFFFFFFF1672C0000	1.08 MB	0x00000000	1970/01/01 00:00:00	FileSightMfx	Module Loaded, Kernel NONE	
0xFFFFFFFF1671A0000	1.08 MB	0x00000000	1970/01/01 00:00:00	FileSightMfx	Module Loaded, Kernel NONE	
0xFFFFFFFF167080000	1.08 MB	0x00000000	1970/01/01 00:00:00	FileSightMfx	Module Loaded, Kernel NONE	
0xFFFFFFFF167CA0000	1.08 MB	0x00000000	1970/01/01 00:00:00	FileSightMfx	Module Loaded, Kernel NONE	
0xFFFFFFFF167040000	104.00 KB	0x00000000	1970/01/01 00:00:00	IndirectKmd.	Module Loaded, Kernel NONE	
0xFFFFFFFF167020000	104.00 KB	0x00000000	1970/01/01 00:00:00	IndirectKmd.	Module Loaded, Kernel NONE	
0xFFFFFFFF167000000	104.00 KB	0x00000000	1970/01/01 00:00:00	IndirectKmd.	Module Loaded, Kernel NONE	
0xFFFFFFFF166FE0000	104.00 KB	0x00000000	1970/01/01 00:00:00	IndirectKmd.	Module Loaded, Kernel NONE	
0xFFFFFFFF166FC0000	104.00 KB	0x00000000	1970/01/01 00:00:00	IndirectKmd.	Module Loaded, Kernel NONE	
0xFFFFFFFF166FA0000	104.00 KB	0x00000000	1970/01/01 00:00:00	IndirectKmd.	Module Loaded, Kernel NONE	
0xFFFFFFFF166F80000	104.00 KB	0x00000000	1970/01/01 00:00:00	IndirectKmd.	Module Loaded, Kernel NONE	
0xFFFFFFFF166F60000	104.00 KB	0x00000000	1970/01/01 00:00:00	IndirectKmd.	Module Loaded, Kernel NONE	
0xFFFFFFFF166F40000	104.00 KB	0x00000000	1970/01/01 00:00:00	IndirectKmd.	Module Loaded, Kernel NONE	
0xFFFFFFFF166F20000	104.00 KB	0x00000000	1970/01/01 00:00:00	IndirectKmd.	Module Loaded, Kernel NONE	
0xFFFFFFFF166F00000	104.00 KB	0x00000000	1970/01/01 00:00:00	IndirectKmd.	Module Loaded, Kernel NONE	

For each module in the kernel dump that has been unloaded this page displays the following information, dll load address (image base), size, checksum, timestamp, module name, flags and symbol type.

## 4.1.4 Data

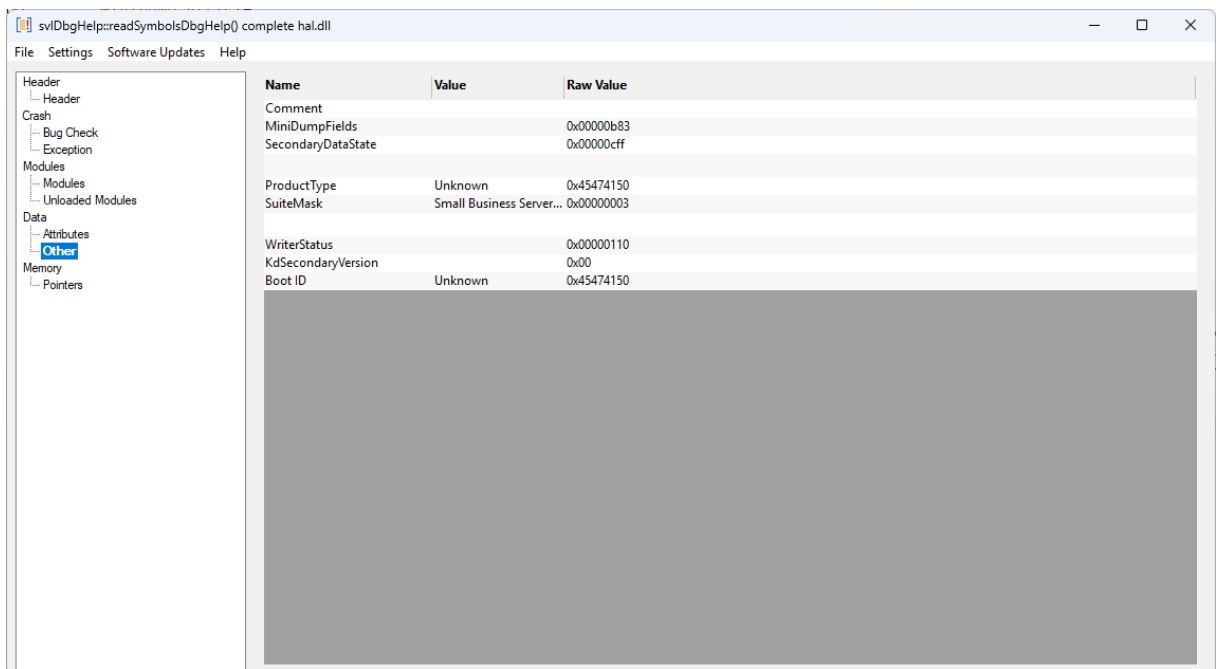
### 4.1.4.1 Attributes

The Attributes page displays the kernel dump attributes.



#### 4.1.4.2 Other

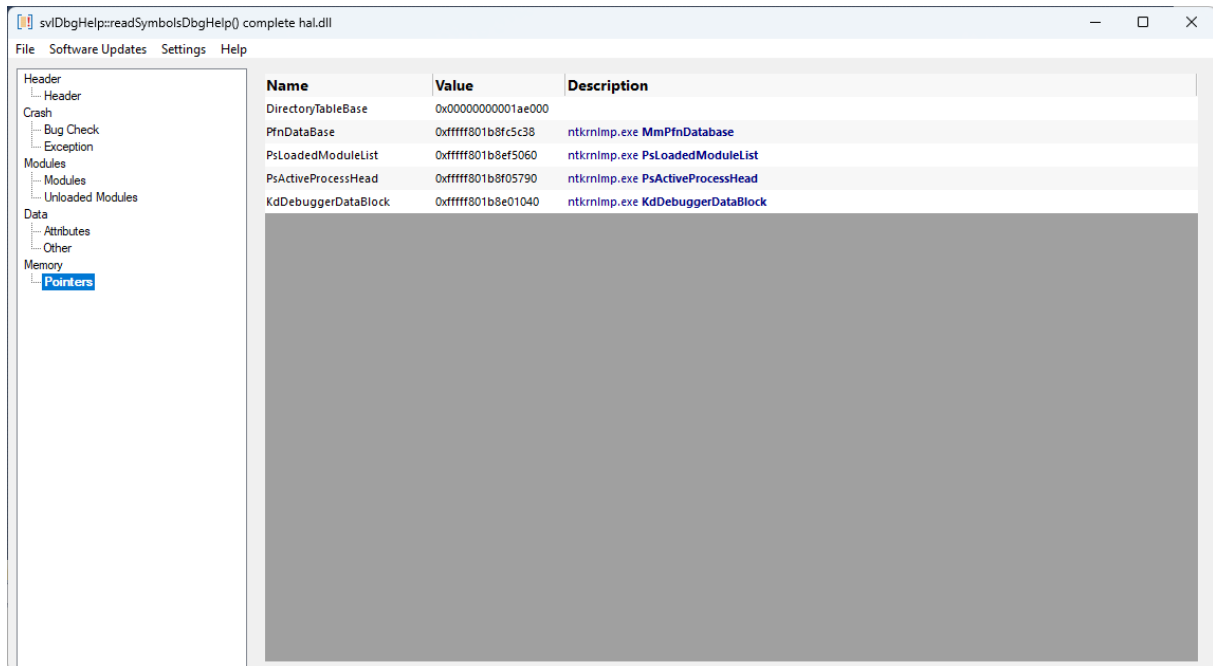
The Header page displays general information about the kernel dump.



## 4.1.5 Memory

### 4.1.5.1 Pointers

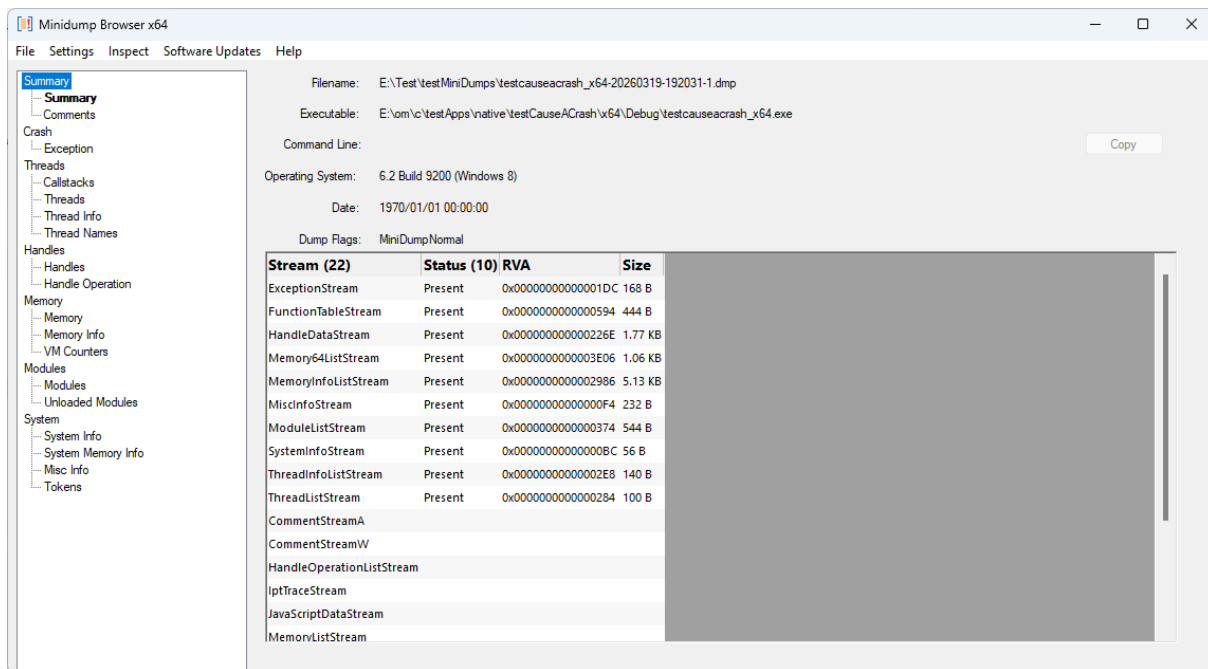
The Pointers page displays the pointers in the kernel dump.



## 4.2 Minidumps

The Minidump Browser user interface is shown below.

When a minidump contains an exception the exception display will be automatically selected as the first display to show you information.

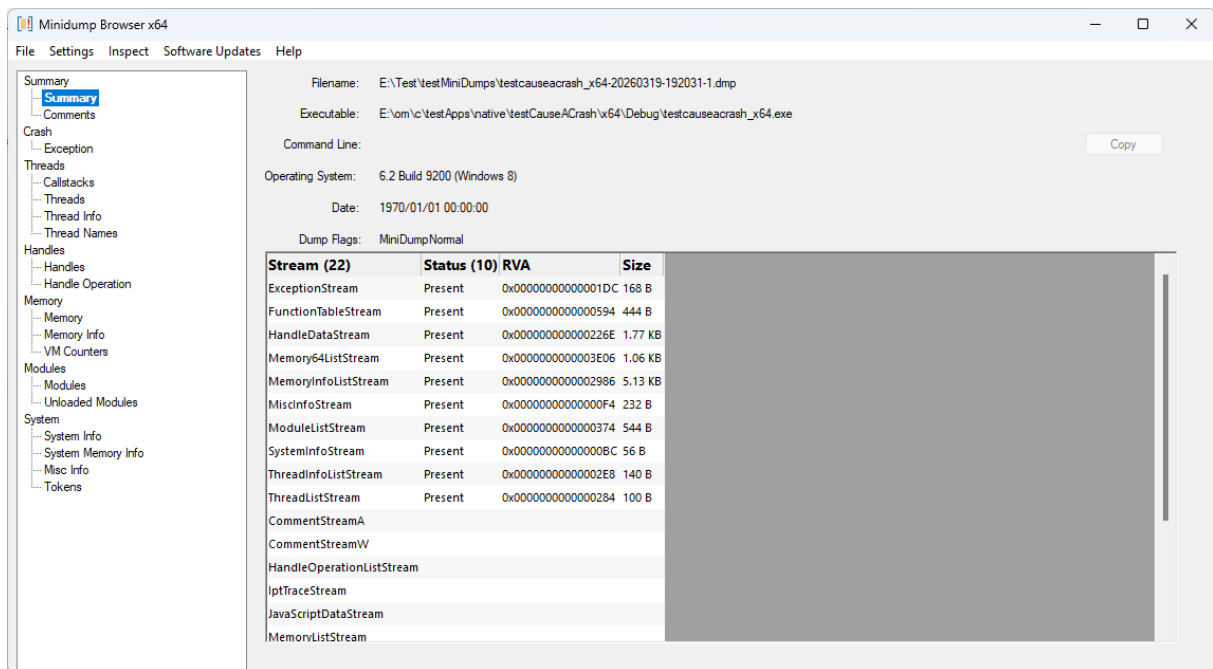


The display shows a summary page and then one page per logical group of data in the minidump. This means that some discrete sections in the minidump have been coalesced - for example ThreadListStream and ThreadExListStream are both represented in the Threads page. Each page is listed on the left hand side. Selecting that entry displays the page on the right hand side. The summary page lists each stream so that you can see which streams are present in the minidump and which are absent. Few minidumps (if any) contain all streams.

## 4.2.1 Summary

### 4.2.1.1 Summary

The Summary page displays general information about the minidump, plus a list of all possible streams and data about streams that are present.



For each stream that is listed we indicate if the stream is present, the RVA (the offset from the start of the minidump) to the stream and the size of the stream.

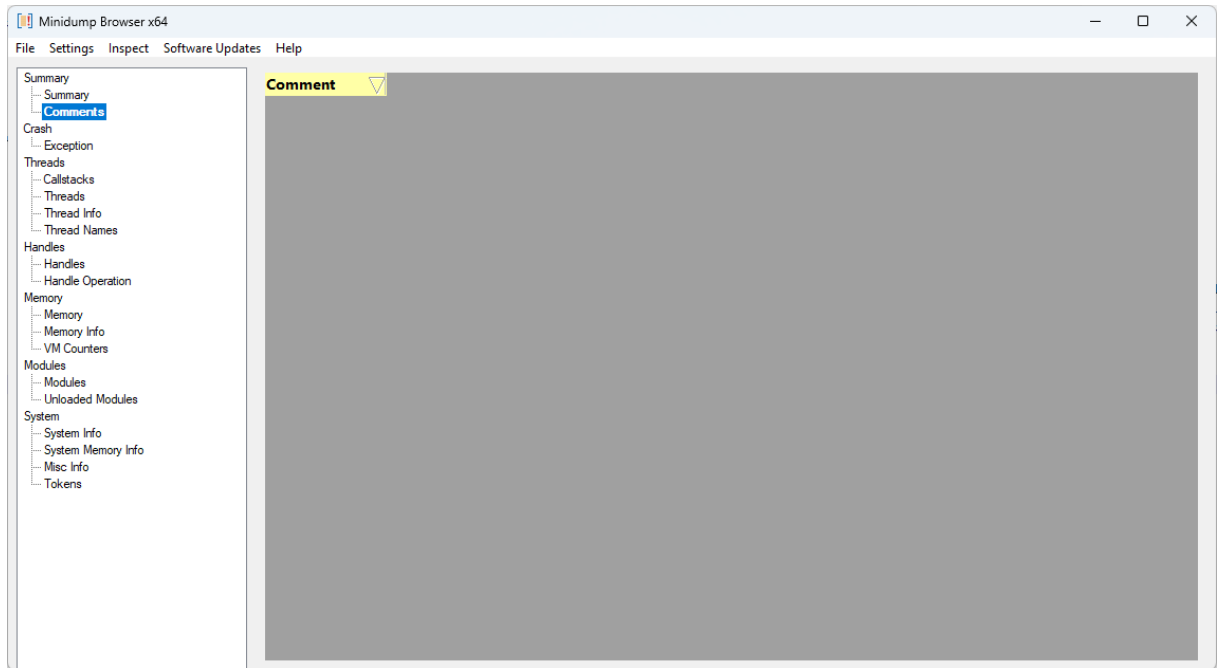
If you want to see the complete command line (for the cases when it's too long to display) use the **Copy** button to copy the command line to the clipboard.

## Command Line

To display the command line the minidump must contain Thread Info and memory data. The Thread Info is used to locate the Thread Environment Block, which is then used to locate the Process Environment Block, which is then used to read the command line.

### 4.2.1.2 Comments

The Comments page displays the contents of the CommentStreamA and CommentStreamW minidump streams.

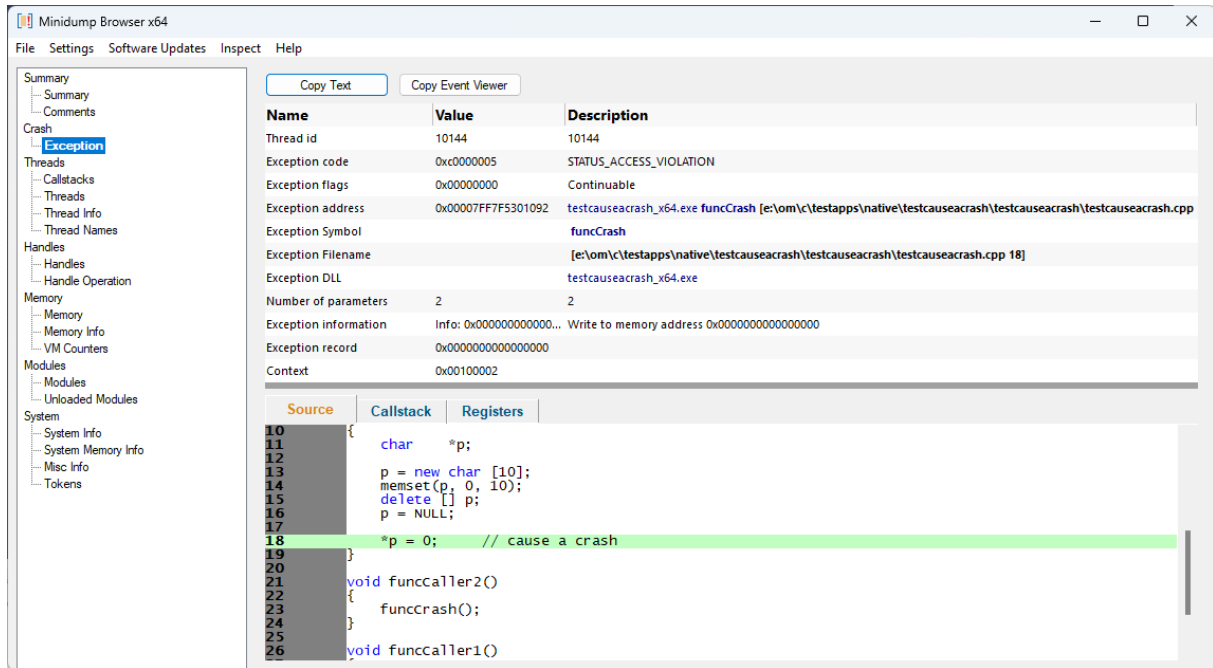


## 4.2.2 Crash

### 4.2.2.1 Exception

The Exception page displays the contents of the ExceptionStream minidump stream.

A few extra fields are displayed to provide additional information: Exception Symbol, Exception Filename, Exception DLL.

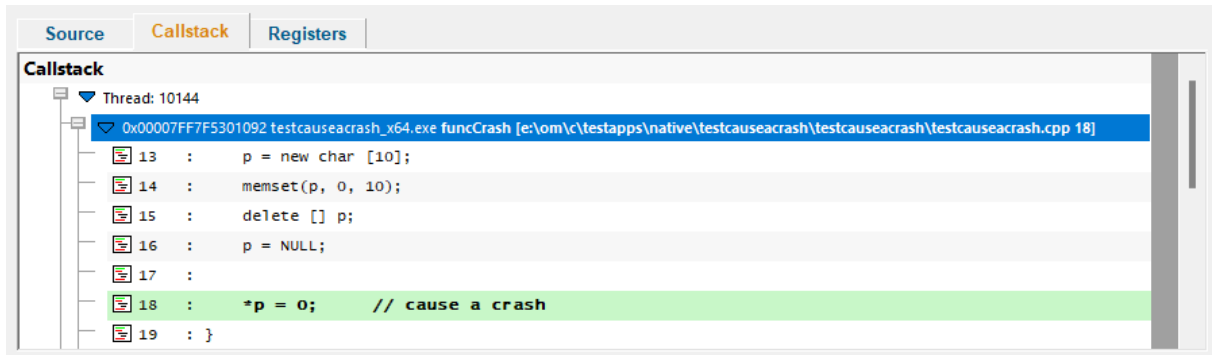


The top view shows exception specific information.

The lower view shows the source code for the crash location (if filename and line number information is available), the exception callstack, and all the registers from the exception CONTEXT.



Expanding any callstack node will display source code for that location (if filename and line number information is available).



## Copy Text

Copy Text copies the text from the grid to the clipboard.

Each column is separated with a comma. Each line is separated by "\r\n".

## Copy Event Viewer

Copy Event Viewer copies the exception data to the clipboard in the same format as the Windows Event Viewer. You can paste this data into some of our other tools (Minidump Browser, MapFile Browser, TDS Browser).

An example of the data is shown below for an Access Violation at 0x0c18459c in devenv.exe.

```
<Event>
  <System>
    <Provider Name="Windows Error Reporting">
  </System>
  <EventData>
    <Data></Data>
    <Data></Data>
    <Data>APPCRASH</Data>
    <Data></Data>
    <Data></Data>
    <Data>C:\Program Files (x86)\Microsoft Visual Studio 10.0\Common7\IDE\devenv.exe</Data>
    <Data></Data>
    <Data></Data>
    <Data></Data>
    <Data></Data>
    <Data></Data>
    <Data>0xc0000005</Data>
    <Data>0x0c18459c</Data>
    <Data></Data>
    <Data></Data>
    <Data>STATUS_ACCESS_VIOLATION</Data>
    <Data>OK</Data>
    <Data></Data>
  </EventData>
</Event>
```

## Tools

If you have installed Minidump Browser, DWARF Browser, TDS Browser, MAP File Browser, the appropriate button to launch this tool will be enabled.

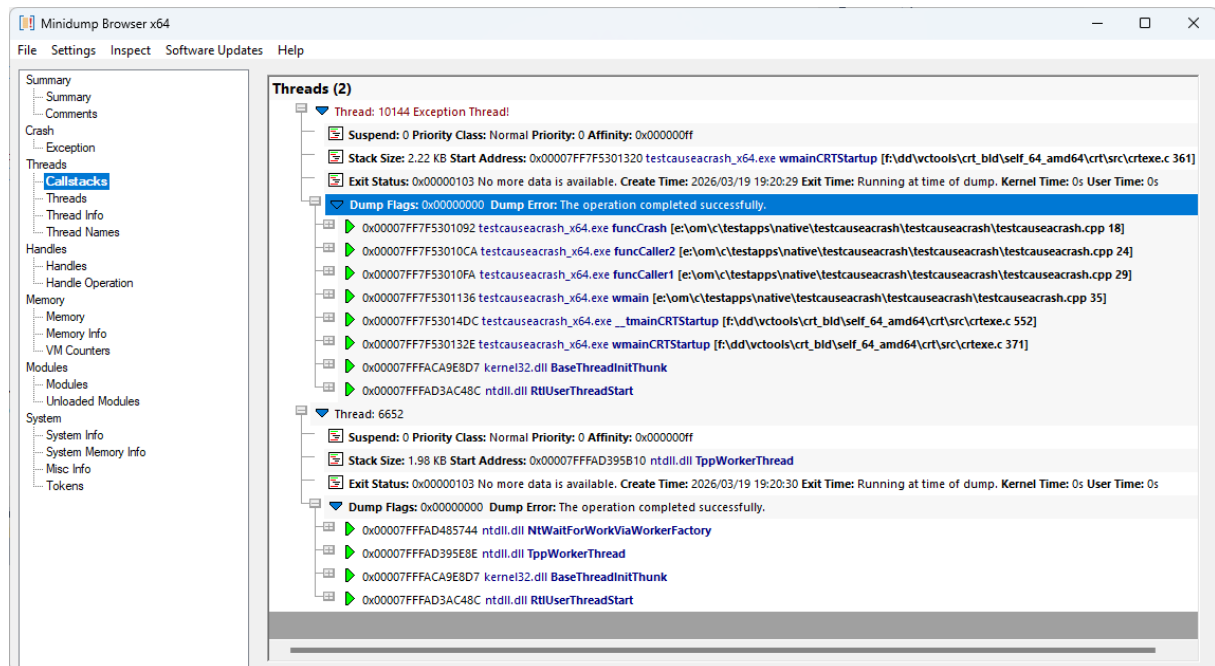
Launching the tool will attempt to load the appropriate PDB, DWARF, TDS, MAP data and then locate the symbol that matches the exception crash address.

### 4.2.3 Threads

Enter topic text here.

#### 4.2.3.1 Callstacks

The Callstacks page displays the the callstack for each thread, combined with information synthesized from the other threads displays.



For each thread the following information is displayed: thread id, thread name, if the thread is suspended, it's priority class, it's priority level, and the thread affinity.

The stack size and thread starting address are displayed, plus a human readable symbol for that address if symbols are available.

Thread exit status and thread execution times are also displayed.

The thread callstack is displayed below the information for each thread.

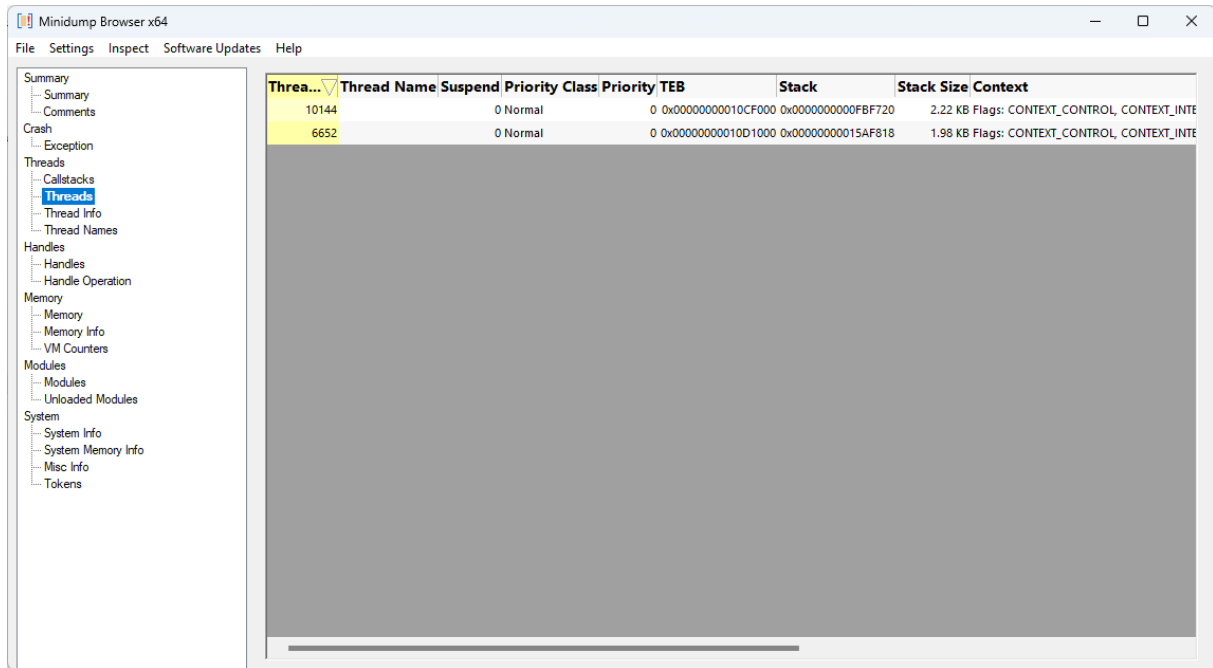
Expanding any callstack node will display source code for that location (if filename and line number information is available).

**Threads (2)**

- Thread: 10144
  - Suspend: 0 Priority Class: Normal Priority: 0 Affinity: 0x000000ff
  - Stack Size: 2.22 KB Start Address: 0x00007FF7F5301320 testcauseacrash\_x64.exe wmainCRTStartup [f:\dd\vctools\crt\_bld\self\_64\_amd64\crt\src\crtexe.c
  - Exit Status: 0x00000103 No more data is available. Create Time: 2026/03/19 19:20:29 Exit Time: Running at time of dump. Kernel Time: 0s User Time: 0s
  - Dump Flags: 0x00000000 Dump Error: The operation completed successfully.
  - 0x00007FF7F5301092 testcauseacrash\_x64.exe funcCrash [e:\om\c\testapps\native\testcauseacrash\testcauseacrash\testcauseacrash.cpp 18]
    - 13 : p = new char [10];
    - 14 : memset(p, 0, 10);
    - 15 : delete [] p;
    - 16 : p = NULL;
    - 17 :
    - 18 : \*p = 0; // cause a crash
    - 19 : }
    - 20 :
    - 21 : void funcCaller2()
    - 22 : {
    - 23 : funcCrash();
  - 0x00007FF7F53010CA testcauseacrash\_x64.exe funcCaller2 [e:\om\c\testapps\native\testcauseacrash\testcauseacrash\testcauseacrash.cpp 24]
  - 0x00007FF7F53010FA testcauseacrash\_x64.exe funcCaller1 [e:\om\c\testapps\native\testcauseacrash\testcauseacrash\testcauseacrash.cpp 29]
  - 0x00007FF7F5301136 testcauseacrash\_x64.exe wmain [e:\om\c\testapps\native\testcauseacrash\testcauseacrash\testcauseacrash.cpp 35]
  - 0x00007FF7F53014DC testcauseacrash\_x64.exe \_\_tmainCRTStartup [f:\dd\vctools\crt\_bld\self\_64\_amd64\crt\src\crtexe.c 552]
  - 0x00007FF7F530132E testcauseacrash\_x64.exe wmainCRTStartup [f:\dd\vctools\crt\_bld\self\_64\_amd64\crt\src\crtexe.c 371]
  - 0x00007FFFA9E8D7 kernel32.dll BaseThreadInitThunk
  - 0x00007FFAD3AC48C ntdll.dll RtlUserThreadStart

#### 4.2.3.2 Threads

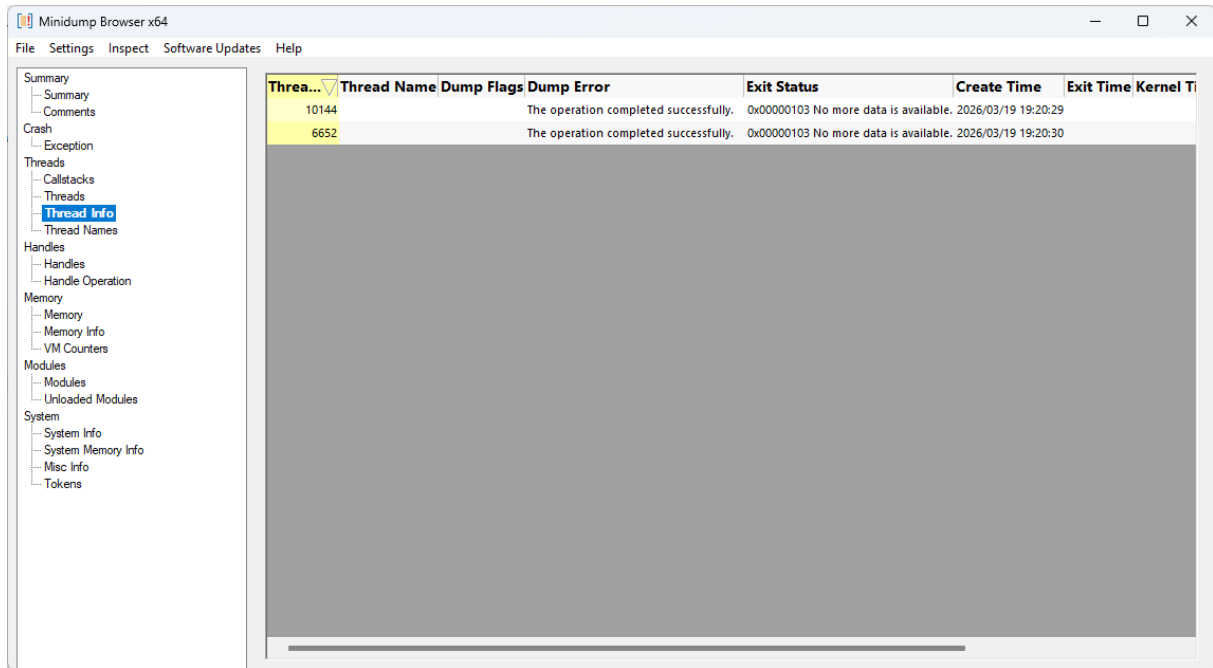
The Threads page displays the contents of the ThreadListStream and ThreadExListStream minidump streams.



For each thread the following information is displayed: thread id, thread name, if the thread is suspended, it's priority class, it's priority level, the thread environment block (TEB) address, the stack location and size and the flags used to create the thread context, plus a dump of some thread context members (processor registers etc).

#### 4.2.3.3 Thread Info

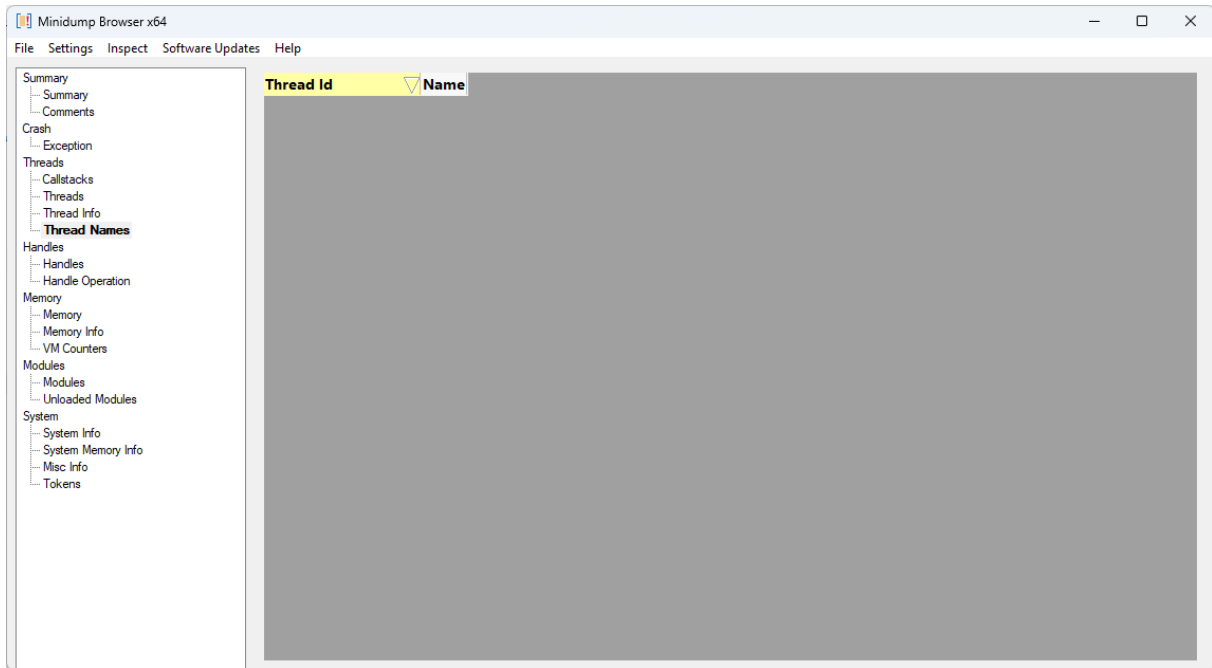
The Thread Info page displays the contents of the ThreadInfoListStream minidump stream.



For each thread the following information is displayed: thread id, thread name, dump flags, dump error status, thread exit status, thread creation time, exit time, kernel time, user time, thread start address and thread processor affinity.

#### 4.2.3.4 Thread Names

The Thread Names page displays the contents of the ThreadNamesStream minidump stream.



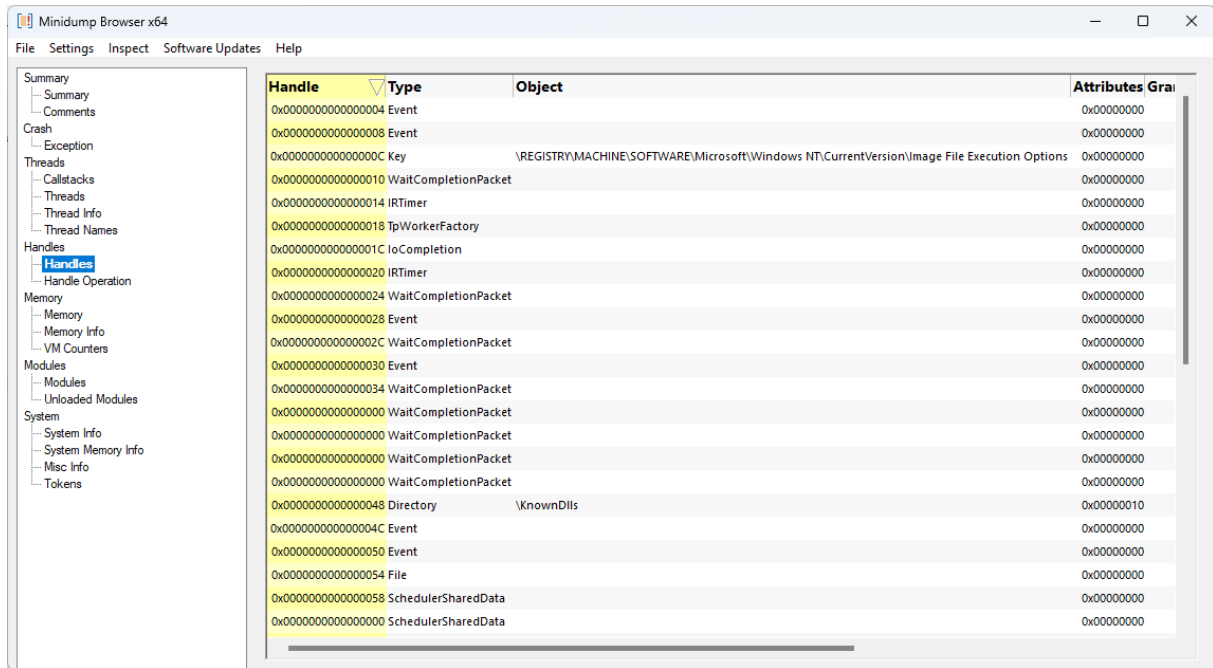
For each thread the thread id and thread name is listed. We use this information to provide thread names on appropriate other minidump displays.

## 4.2.4 Handles

Enter topic text here.

### 4.2.4.1 Handles

The Handles page displays the contents of the HandleDataStream minidump stream.



For each handle that is present in the dump the following information is displayed:

#### Handle

The handle value.

#### Type

The handle type.

#### Object

The name of the object referenced by the handle.

#### Attributes

The attributes of the handle.

#### Granted Access

Access rights to the handle.

#### Handle Count

Number of references to the handle.

#### Pointer Count

Object specific count.

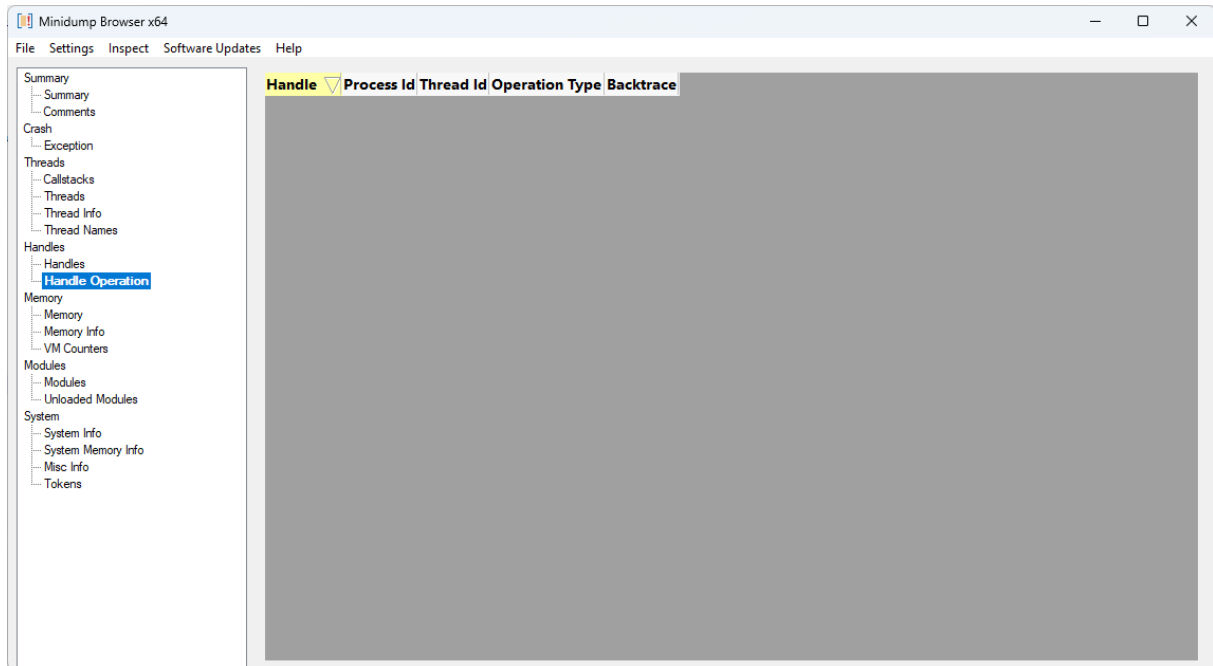
#### Object Info

Extra information about the object.

#### Reserved0

#### 4.2.4.2 Handle Operation

The Handle Operation page displays the contents of the HandleOperationListStream minidump stream.



Handle operation information relates to information collected by Application Verifier.

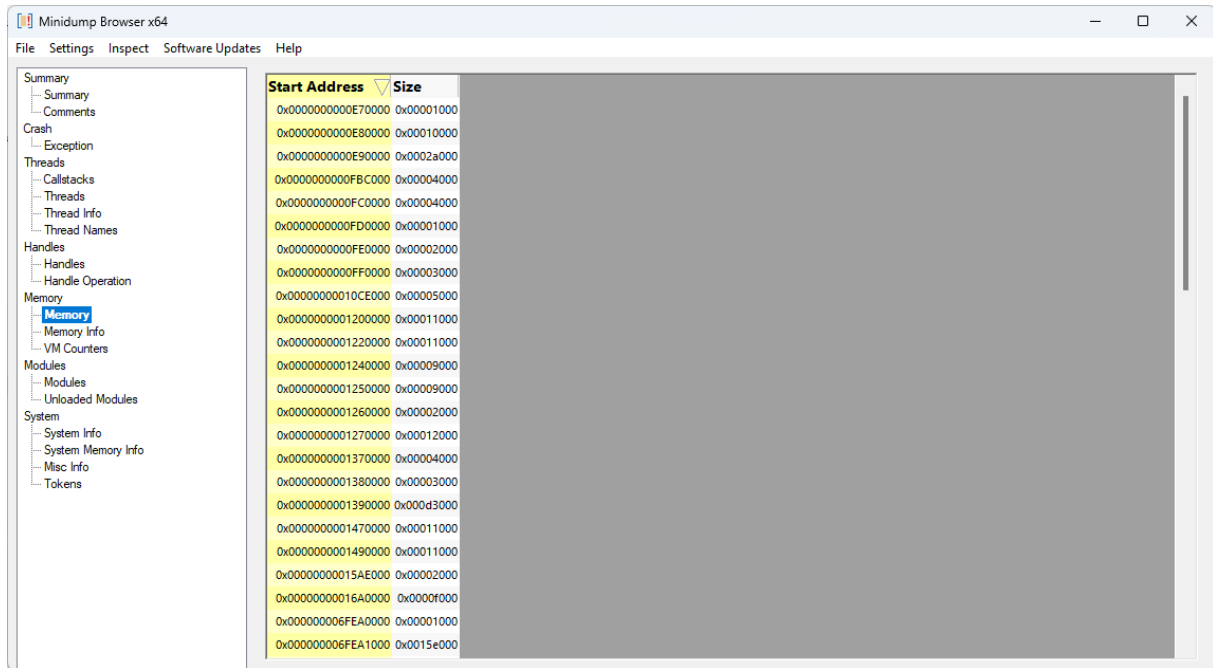
More information here: [https://docs.microsoft.com/en-gb/windows/win32/api/minidumpapiset/ns-minidumpapiset-minidump\\_handle\\_operation\\_list](https://docs.microsoft.com/en-gb/windows/win32/api/minidumpapiset/ns-minidumpapiset-minidump_handle_operation_list)

#### 4.2.5 Memory

Enter topic text here.

##### 4.2.5.1 Memory

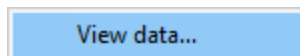
The Memory page displays the contents of the MemoryListStream and the Memory64ListStream minidump streams.



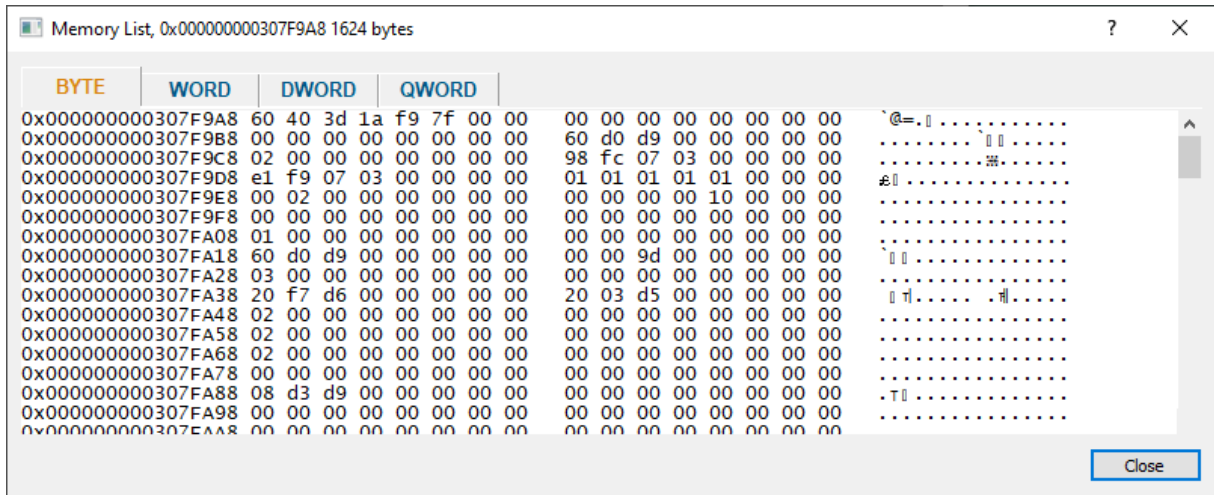
The information presented here is a list of memory start addresses and the size of the memory at that address.

## Context Menu

A context menu provides a single option:

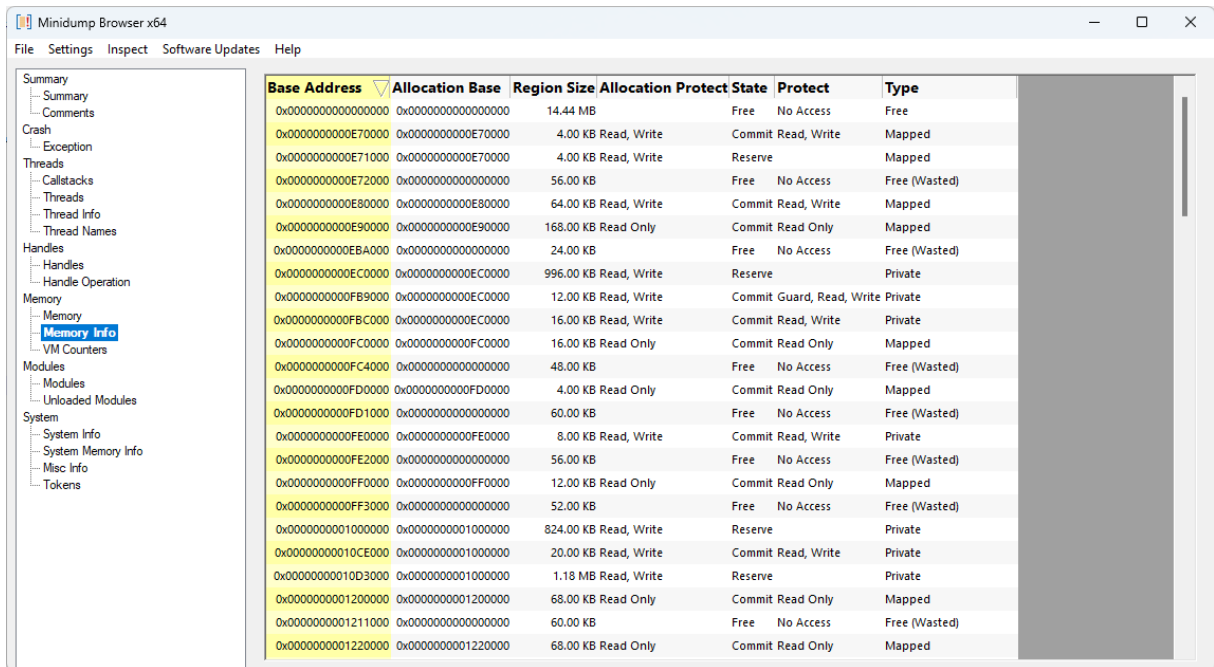


Clicking **View data...** opens a memory inspection dialog, allowing you to view the memory as BYTES, WORDS, DWORDs or QWORDs. For executable code a disassembly view is provided.



### 4.2.5.2 Memory Info

The Memory Info page displays the contents of the MemoryInfoListStream minidump stream.

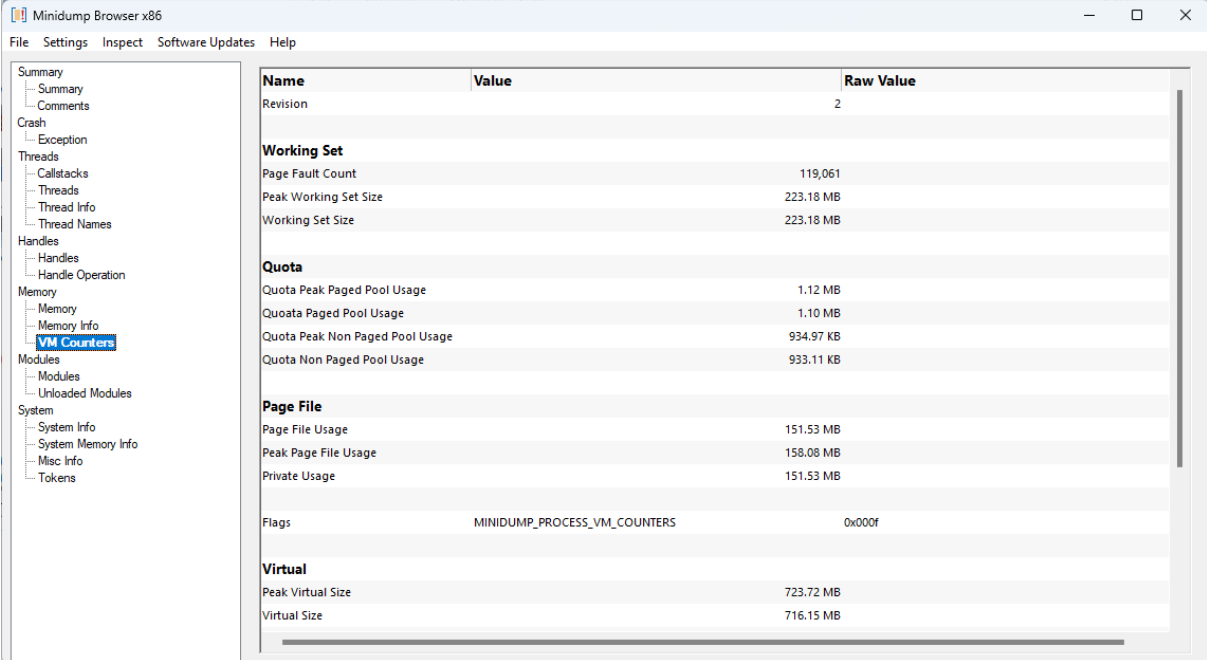


The information here allows you to inspect the memory protection status of areas of memory in the minidump.

If you'd like to view this information in graphical form you can also use VM Validator. VM Validator views memory data in live processes and minidumps.

### 4.2.5.3 VM Counters

The VM Counters page displays the contents of the ProcessVmCountersStream minidump stream.



Name	Value	Raw Value
Revision		2
<b>Working Set</b>		
Page Fault Count	119,061	
Peak Working Set Size	223.18 MB	
Working Set Size	223.18 MB	
<b>Quota</b>		
Quota Peak Paged Pool Usage	1.12 MB	
Quota Paged Pool Usage	1.10 MB	
Quota Peak Non Paged Pool Usage	934.97 KB	
Quota Non Paged Pool Usage	933.11 KB	
<b>Page File</b>		
Page File Usage	151.53 MB	
Peak Page File Usage	158.08 MB	
Private Usage	151.53 MB	
Flags	MINIDUMP_PROCESS_VM_COUNTERS	0x000f
<b>Virtual</b>		
Peak Virtual Size	723.72 MB	
Virtual Size	716.15 MB	

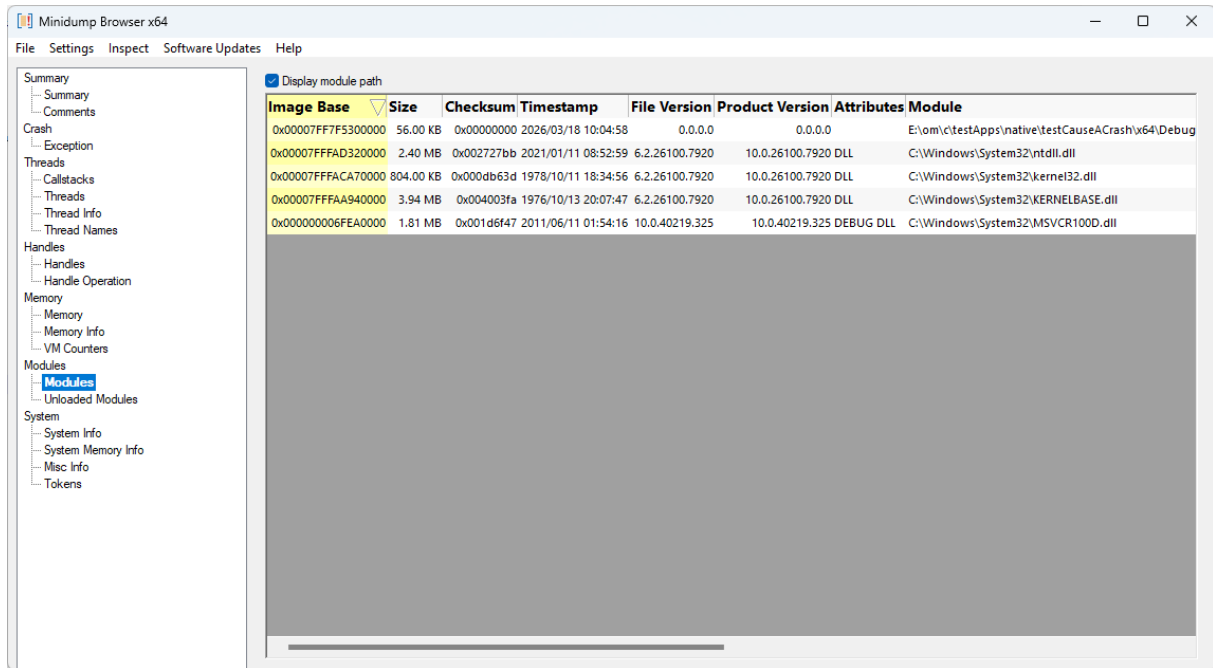
This page provides detailed information about the virtual memory counters of the system.

## 4.2.6 Modules

Enter topic text here.

### 4.2.6.1 Modules

The Modules page displays the contents of the ModuleListStream minidump stream.

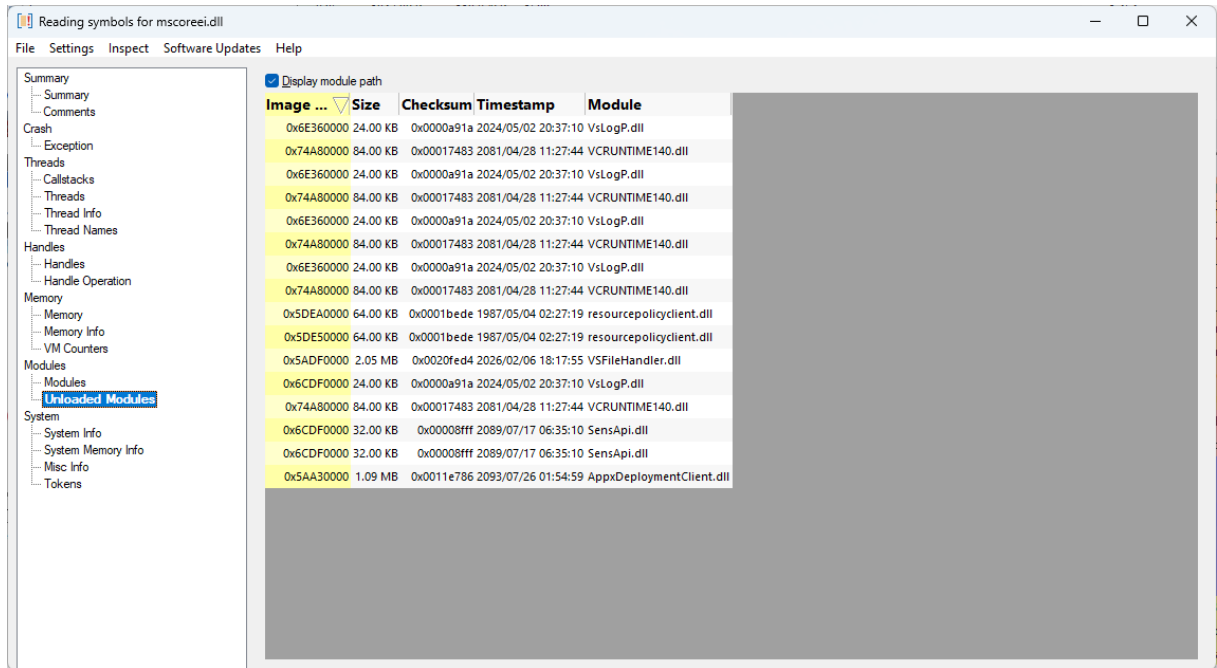


For each module in the minidump this page displays the following information, dll load address (image base), size, checksum, timestamp, file version, product version, application attributes and module name (with optional path).

Some of the information can only be obtained once the module has been downloaded from a symbol server (usually Microsoft's symbol server).

#### 4.2.6.2 Unloaded Modules

The Unloaded Modules page displays the contents of the UnloadedModuleListStream minidump stream.



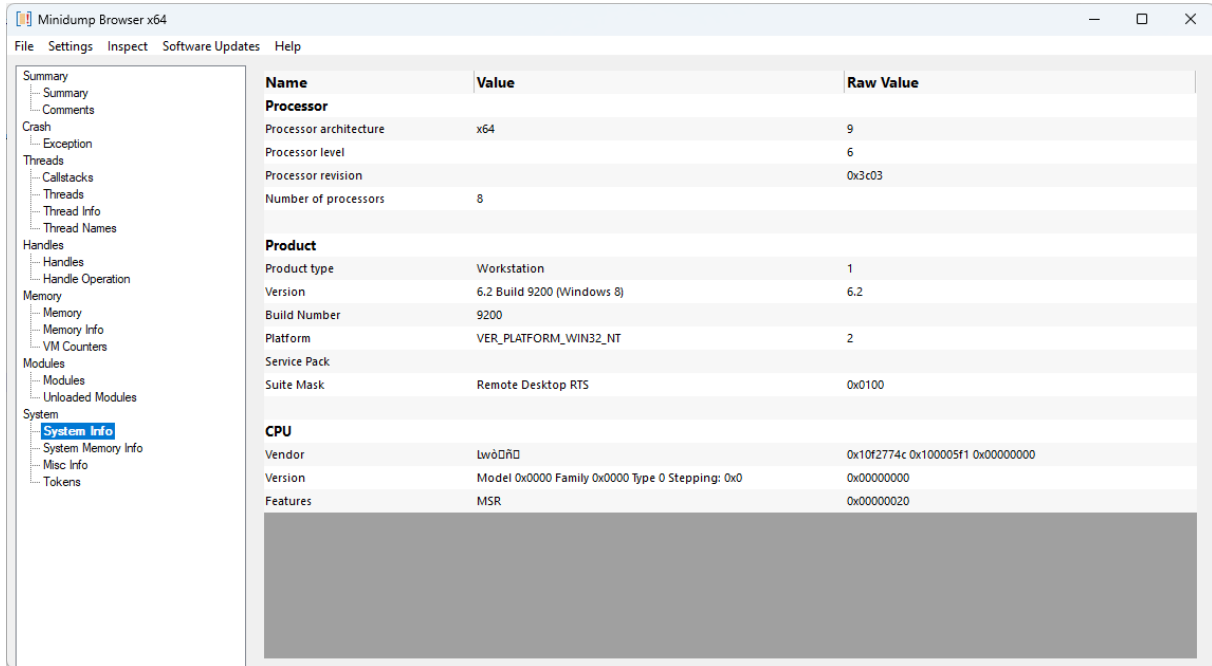
For each module in the minidump that has been unloaded this page displays the following information, dll load address (image base), size, checksum, timestamp, module name (with optional path).

## 4.2.7 System

Enter topic text here.

### 4.2.7.1 System Info

The System Info page displays the contents of the SystemInfoStream minidump stream.



The screenshot shows the Minidump Browser x64 application window. The left sidebar contains a tree view with categories: Summary, Crash, Threads, Handles, Memory, Modules, and System. The 'System Info' page is selected and highlighted in blue. The main content area displays a table with three columns: Name, Value, and Raw Value. The table is organized into sections: Processor, Product, and CPU. The Processor section lists architecture (x64), level (6), revision (0x3c03), and count (8). The Product section lists type (Workstation), version (6.2 Build 9200), build number (9200), platform (VER\_PLATFORM\_WIN32\_NT), service pack, and suite mask (Remote Desktop RTS). The CPU section lists vendor (L76D7D), version (0x10f2774c), model (0x100005f1), and features (MSR). A large grey rectangular area is visible at the bottom of the main content area.

Name	Value	Raw Value
<b>Processor</b>		
Processor architecture	x64	9
Processor level		6
Processor revision		0x3c03
Number of processors	8	
<b>Product</b>		
Product type	Workstation	1
Version	6.2 Build 9200 (Windows 8)	6.2
Build Number	9200	
Platform	VER_PLATFORM_WIN32_NT	2
Service Pack		
Suite Mask	Remote Desktop RTS	0x0100
<b>CPU</b>		
Vendor	L76D7D	0x10f2774c 0x100005f1 0x00000000
Version	Model 0x0000 Family 0x0000 Type 0 Stepping: 0x0	0x00000000
Features	MSR	0x00000020

This page provides information about the computer hardware and the operating system you are using.

#### 4.2.7.2 System Memory Info

The System Memory Info page displays the contents of the SystemMemoryInfoStream minidump stream.

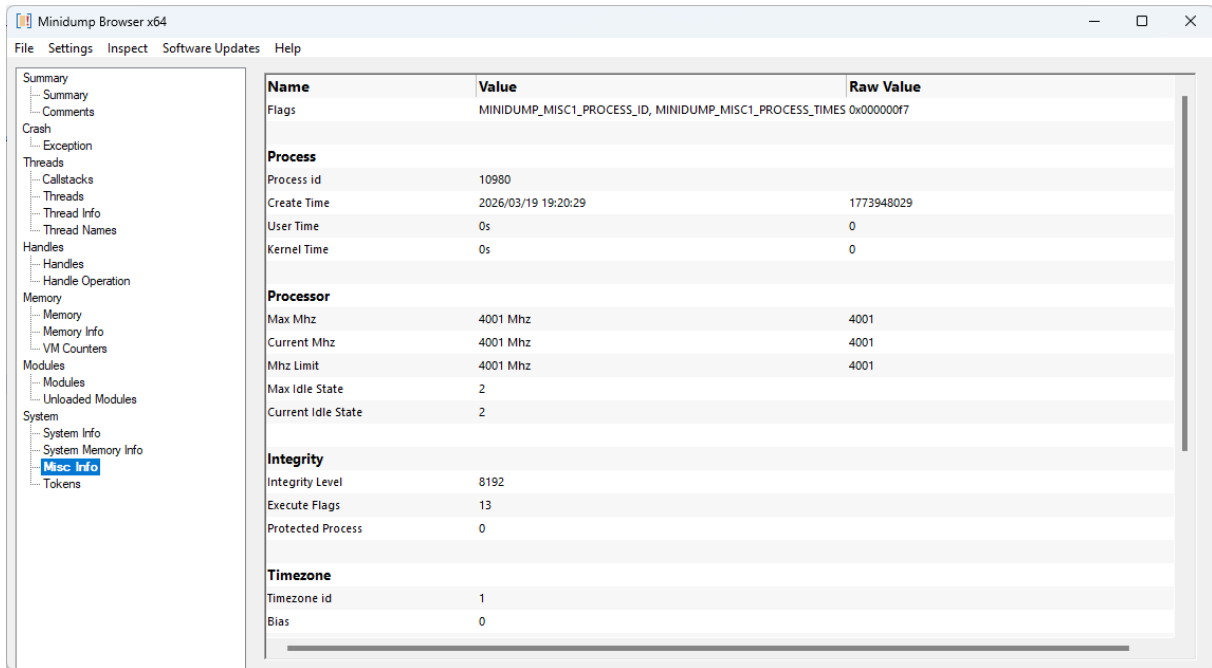
The screenshot shows the MiniDump Browser interface with the 'System Memory Info' page selected in the left-hand navigation pane. The main content area displays a table of system memory information.

Name	Value	Raw Value
Revision		2
Flags	FILECACHE, BASICPERF, DIRTYPAGES, RESIDENT/AVAILABLEPAGES	0x003f
<b>Basic Information</b>		
TimerResolution	156,250	0x0002625a
PageSize	4.00 KB	0x00001000
NumberOfPhysicalPages	4,158,636	0x003f74ac
LowestPhysicalPageNumber	1	0x00000001
HighestPhysicalPageNumber	4,324,863	0x0041fdff
AllocationGranularity	64.00 KB	0x00010000
MinimumUserModeAddress		0x0000000000010000
MaximumUserModeAddress		0x000000007fffffff
ActiveProcessorsAffinityMask		0x00000000000000ff
NumberOfProcessors	8	0x00000008
<b>File Cache Information</b>		
CurrentSize	745.43 MB	0x000000002e96e000
PeakSize	758.46 MB	0x000000002f675000
PageFaultCount	4,453,569	0x0043f4c1
MinimumWorkingSet	256 B	0x0000000000000100
MaximumWorkingSet	4.00 GB	0x00000000ffffffff
CurrentSizeIncludingTransitionInPages	2.16 MB	0x00000000002296a9
PeakSizeIncludingTransitionInPages	2.25 MB	0x000000000023fb62

This page provides detailed information about the memory state of the system.

#### 4.2.7.3 Misc Info

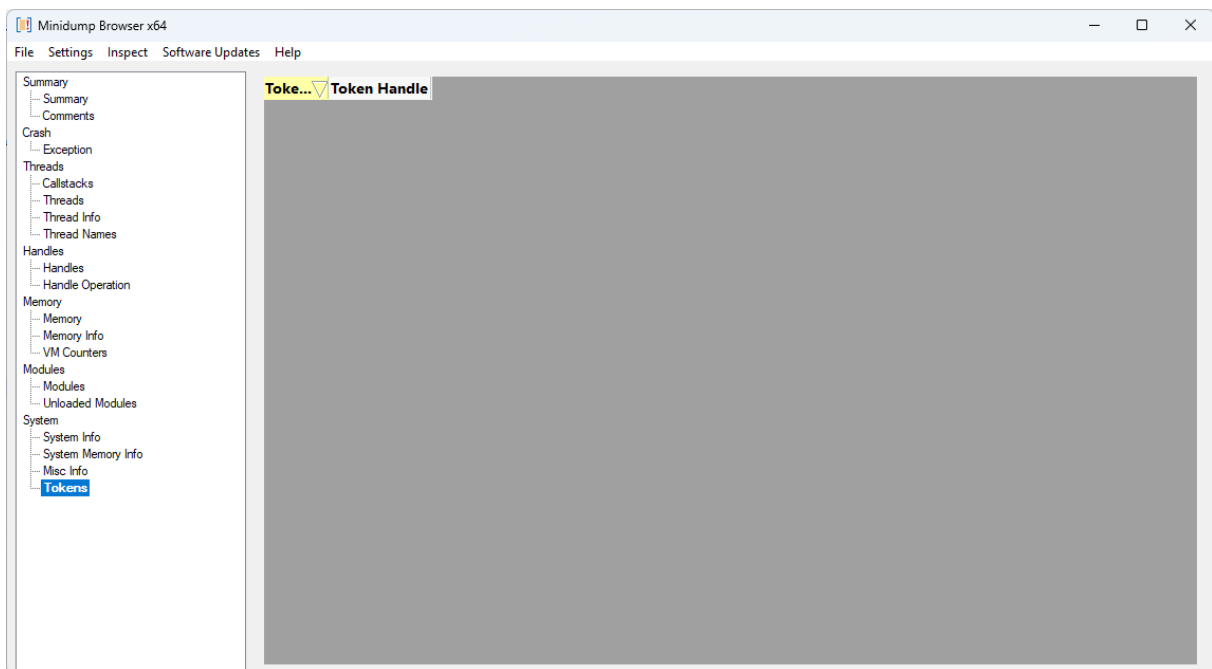
The Misc Info page displays the contents of the MiscInfoStream minidump stream.



This section provides miscellaneous information about the minidump application.

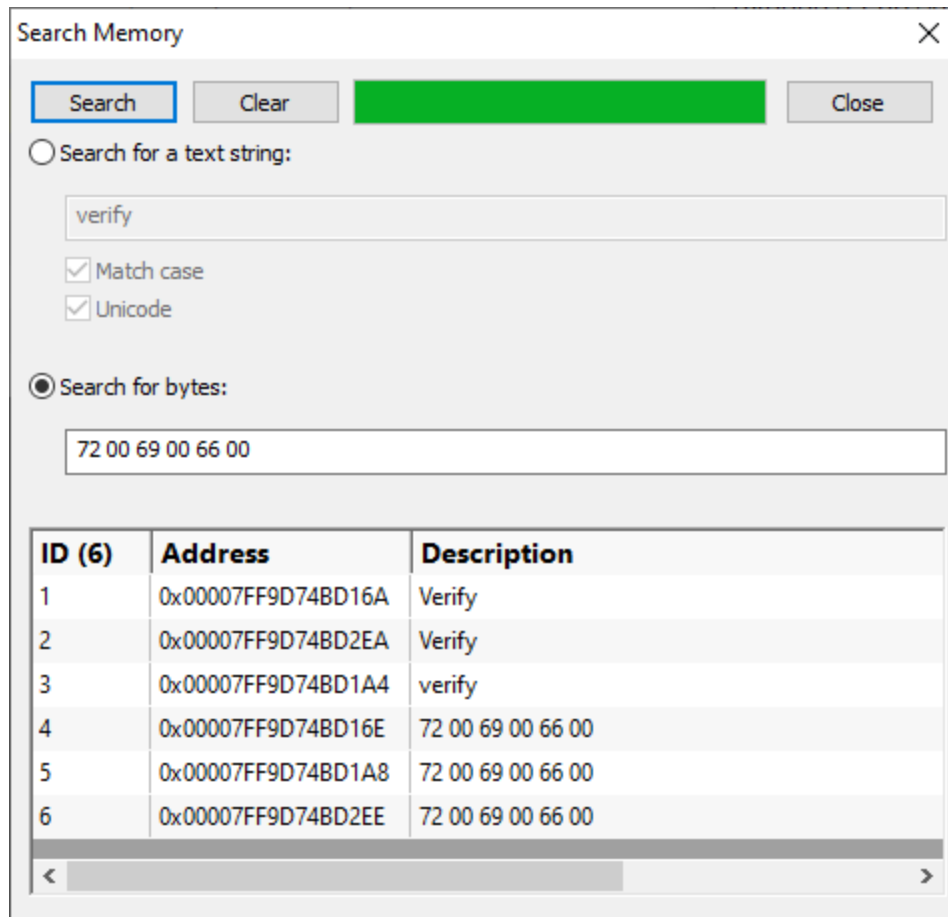
#### 4.2.7.4 Tokens

The Tokens page displays the contents of the TokenStream minidump stream.



## 4.3 Search Memory Dialog

The Search Memory dialog is shown below.



You can search for text strings or you can search for byte sequences.

**Search for a text string** > type the string you wish to search for into the text box

**Match case** > select the check box if the string match should be case sensitive

**Unicode** > select the check box if the string match should be Unicode. If the check box is not selected the string match is ANSI

**Search for bytes** > type the bytes you wish to search for into the text box. A byte should be specified as a two digit hex value. Separate bytes with spaces

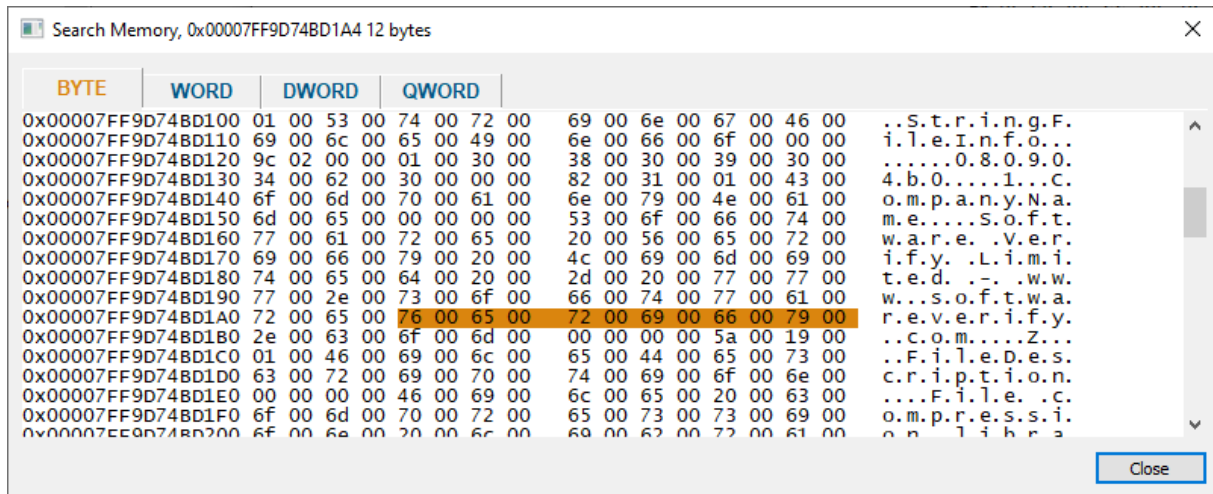
**Search** > perform the search. The progress of the search is shown on the progress bar, any matching search results are shown in the list.

**Clear** > clear the search results

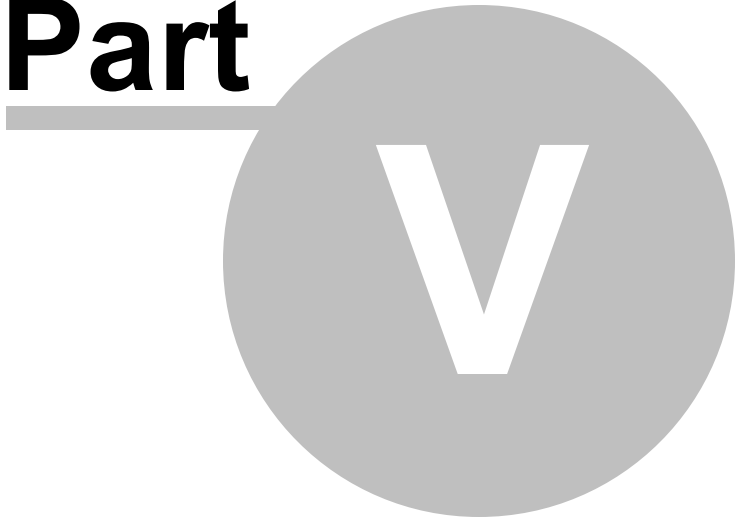
A context menu on the search results provides a single option:

View data...

Clicking **View data...** opens a memory inspection dialog, allowing you to view the search results memory as BYTES, WORDS, DWORDS or QWORDS.

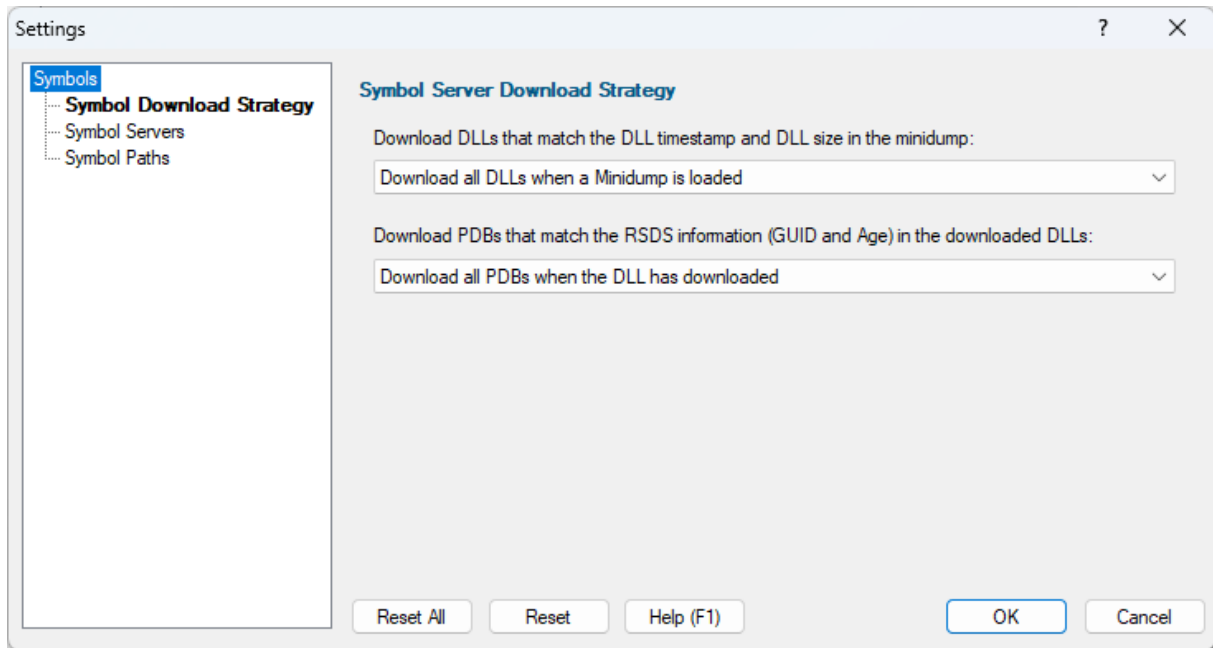


**Part**



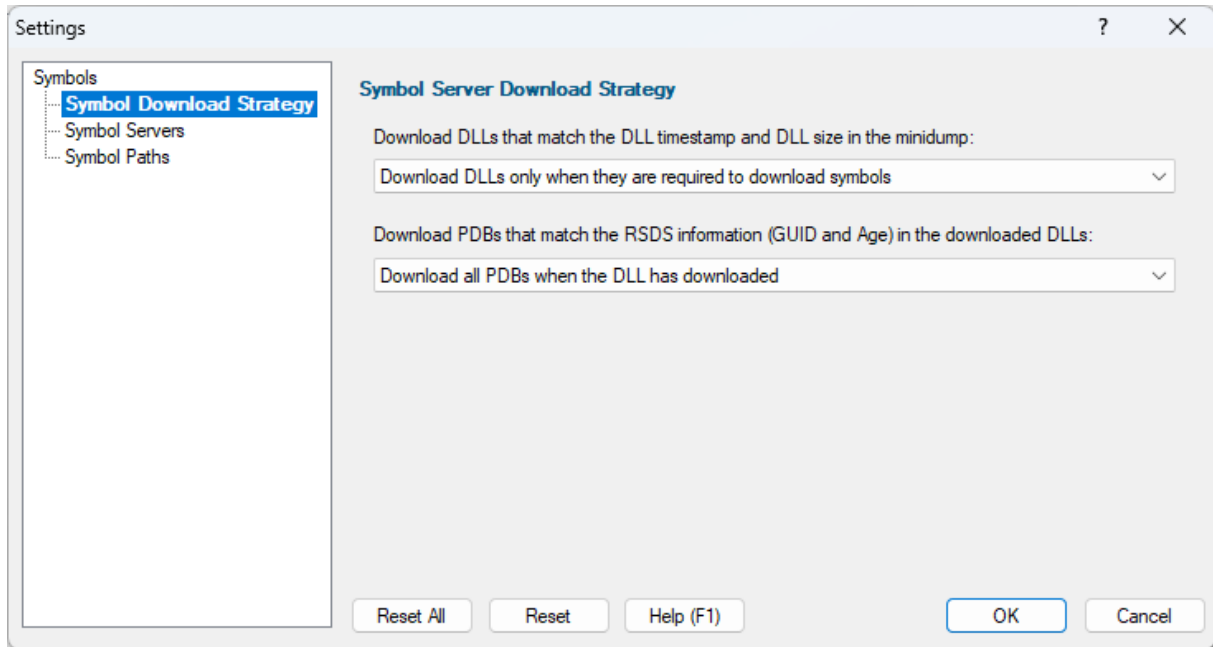
## 5 Settings dialog

The Settings dialog allows you to edit all the settings that affect the operation of Minidump Browser.



### 5.1 Symbol Download Strategy

The Symbol Download Strategy settings when DLLs are downloaded from symbol servers and when symbols are downloaded from symbol servers.



## Downloading DLLs

Three options are provided for downloading DLLs.

- **Do not download DLLs** > DLLs will only be sourced from the computer
- **Download all DLLs when a minidump is loaded** > the slowest, but most complete option
- **Download DLLs only when they are required to download symbols** > minimum amount of time spent downloading DLLs from symbol servers

## Downloading PDBs


Three options are provided for downloading PDBs.

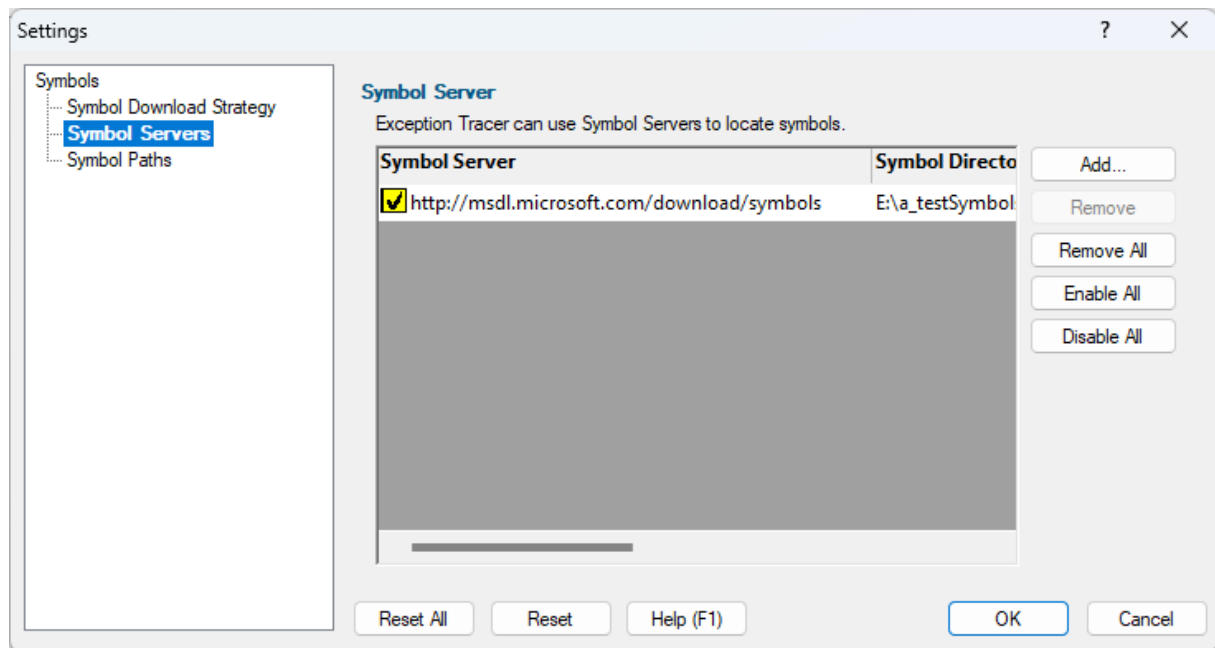
- **Do not download PDBs** > symbols will only be sourced from the computer
- **Download all PDBs when the DLL has downloaded** > the slowest, but most complete option
- **Download PDBs only when they are required to resolve a symbol** > minimum amount of time spent downloading from symbol servers

**Reset** - Resets **all** global settings, not just those on the current page. This includes removing any symbol servers added.

## 5.2 Symbol Servers

The Symbol Server settings allow you to specify what symbol servers to use.

 **You do not need to specify a symbol server** if you do not wish to. MiniDump Browser will work correctly without a symbol server.



### Symbol server

The symbol server is entirely optional, but is useful for obtaining symbols from a centralized company resource or for obtaining operating symbols from Microsoft.

The default symbol server is the Microsoft symbol server used for acquiring symbols about Microsoft's operating system DLLs. You may also wish to add some symbol servers for any software builds in your organisation.

A symbol server is defined by at least the following:

- the symbol server dll to be used to handle the symbol server interaction
- a directory location where symbol definitions are saved
- the server location - a url

The symbol server can be enabled or disabled allowing you to keep multiple symbol server configurations available without constantly editing their definitions.

### Symbol Server Errors

Any symbol server entry shown in red indicates there is a problem with parts of the definition of that symbol server.

In the image shown above the symbol server at <http://127.0.0.42:8000> cannot be reached. It is either offline or does not exist.

## Managing symbol servers

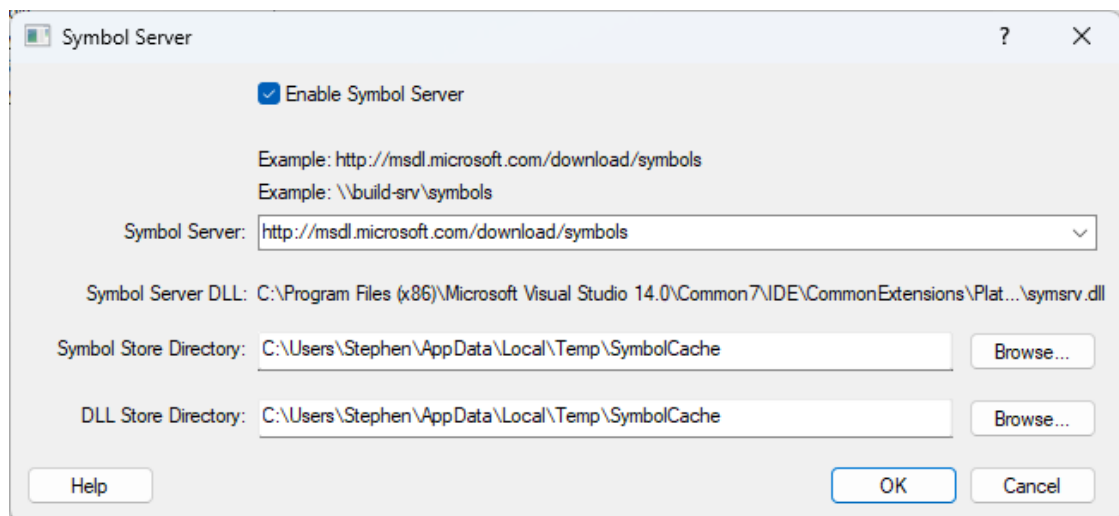
- **Add...** > displays the symbol server dialog described below
- **Remove** > remove selected symbol server(s) in the list
- **Remove All** > remove all symbol servers
- **Enable All** > enables all symbol servers in the list
- **Disable All** > disables all symbol servers

You can also enable or disable an item in the list via the yellow check box at the left of each row.

To edit the details for a symbol server, just double click the entry in the list to show the symbol server dialog again.


## Symbol server dialog

The dialog initially appears pre-populated with some default values and allows you to set up or edit the definition of a symbol server. Some of the default values can be changed.



- **Enable Symbol Server** > enable or disable this server

The following three entries must be set to enable the **OK** button and define the symbol server.

 OK button not enabled? The OK button will only be enabled when the following entries have a valid value: - Symbol Server DLL names a dll present in the Memory Validator install directory. - Symbol Store Directory has been specified and exists. - Symbol Server URL has been specified (this value will not be checked for correctness).

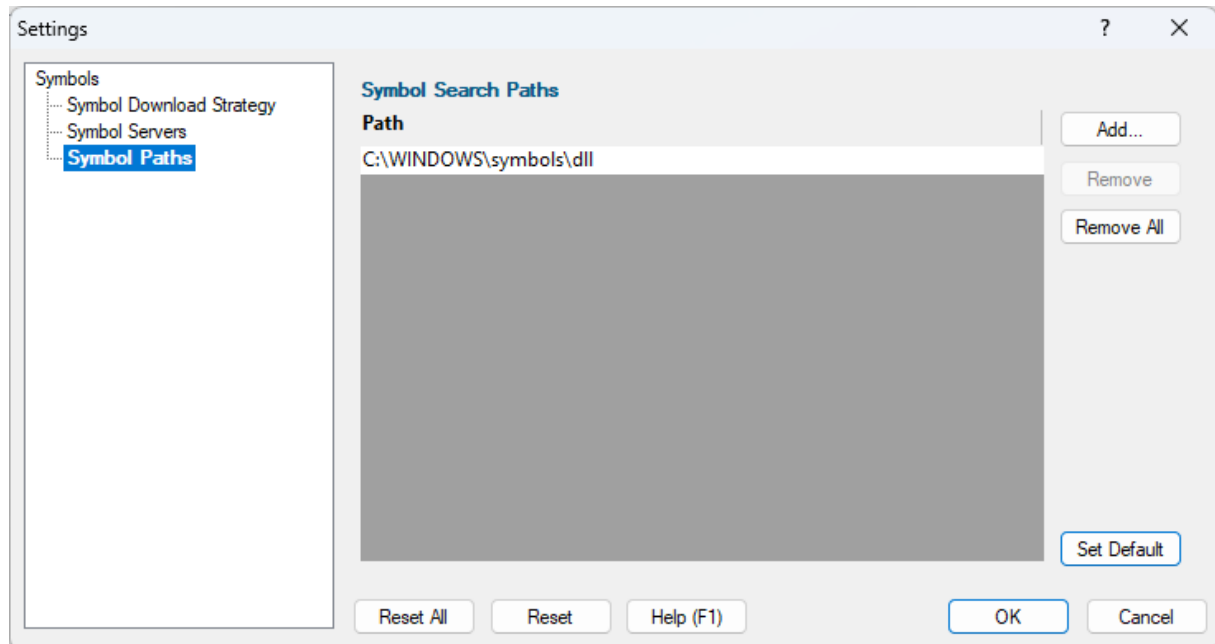
- **Symbol Server** > select a predefined public symbol server or enter the URL of the symbol server you wish to use - the Microsoft server is initially set as the default
- **Symbol Store Directory** > enter or **Browse** to set the directory that will contain local copies of the downloaded symbols

The **Symbol Server DLL** is set automatically.

**Reset** - Resets **all** global settings, not just those on the current page. This includes removing any symbol servers added.

## 5.3 Symbol Paths

The Symbols settings allow you to specify where Minidump Browser looks for symbols.



### Manually adding path type directories

The Path list shows all the paths that will be searched for debug information in PDB files.

You can modify the list of files for each path type in the following ways:

- **Add** > appends a row to the directory list > enter the directory path

Edit a directory path by double clicking the entry. The usual controls apply for removing list items:

- **Remove** > removes selected items from the list
- **Remove All** > clears the list
- **Set Default** > adds all valid directories found in the `_NT_SYMBOL_PATH` environment variable, plus the Windows symbols directory

Alternatively, press **Del** to delete selected items, and **Ctrl** + **A** to select all items in the list first.

**Reset** - Resets **all** global settings, not just those on the current page. This includes removing any symbol servers added.

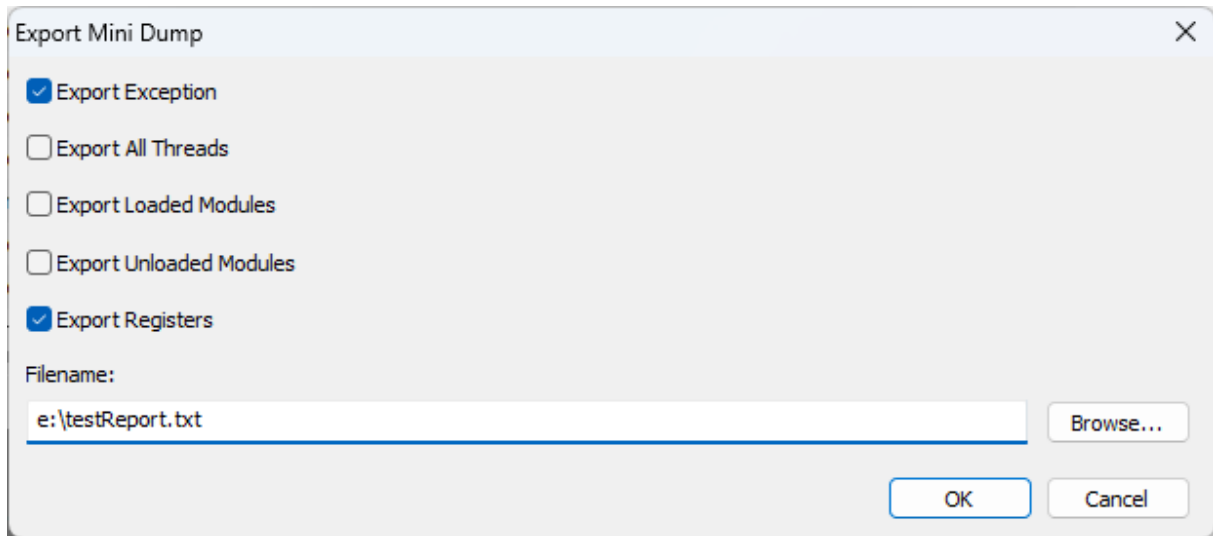
**Part**



## 6 Export as Text dialog

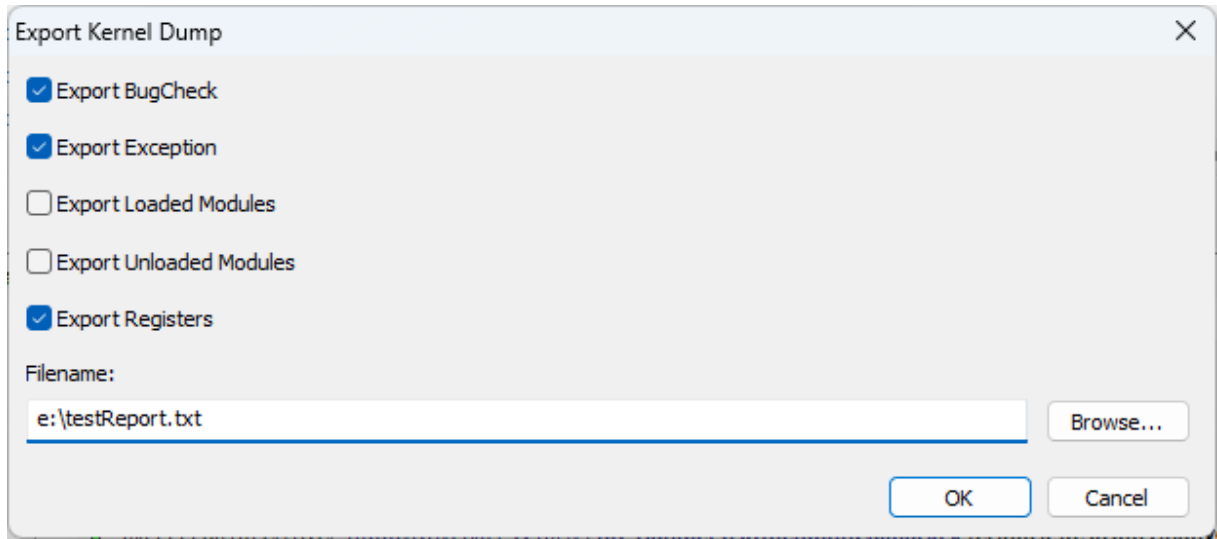
The Export as Text dialog allows you to specify the criteria that will be used when exporting data from the minidump or kernel dump in text format.

### Minidumps



- **Export Exception** > include exception information and the exception callstack in the exported data
- **Export All Threads** > include information about each thread and it's callstack in the exported data
- **Export Modules** > include information about loaded modules in the exported data
- **Export Unloaded Modules** > include information about unloaded modules in the exported data
- **Export Registers** > include the registers from the exception information in the exported data
- **Browse...** > display the file browser to choose the filename to export the text data to

### Kernel Dumps



- **Export BugCheck** > include BugCheck information in the exported data
- **Export Exception** > include exception information and the exception callstack in the exported data
- **Export Modules** > include information about loaded modules in the exported data
- **Export Unloaded Modules** > include information about unloaded modules in the exported data
- **Export Registers** > include the registers from the exception information in the exported data
- **Browse...** > display the file browser to choose the filename to export the text data to

**Part**

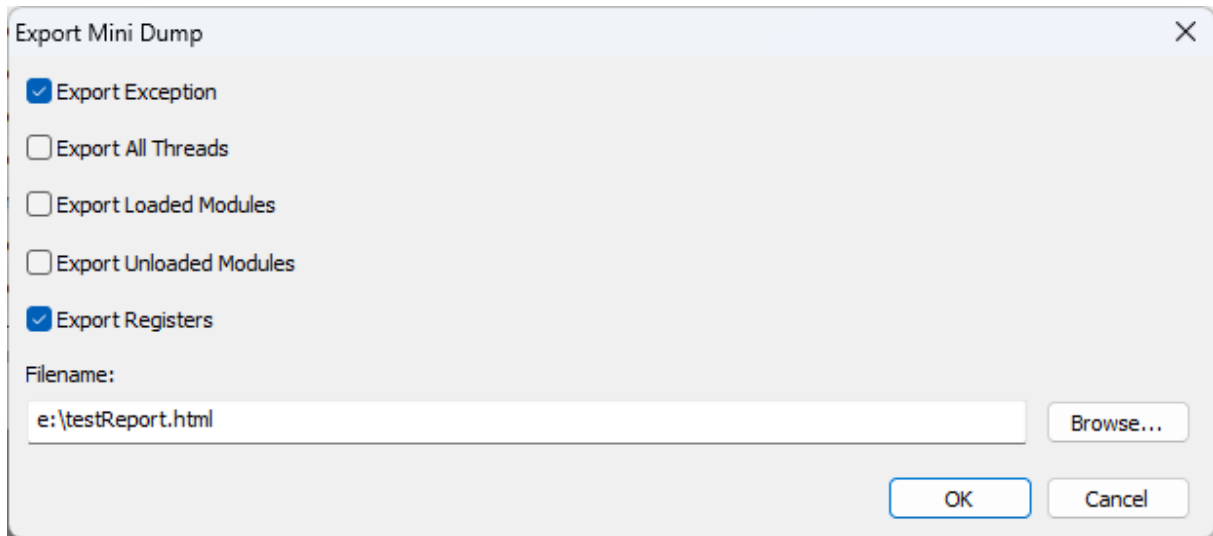


**VII**

## 7 Export as HTML dialog

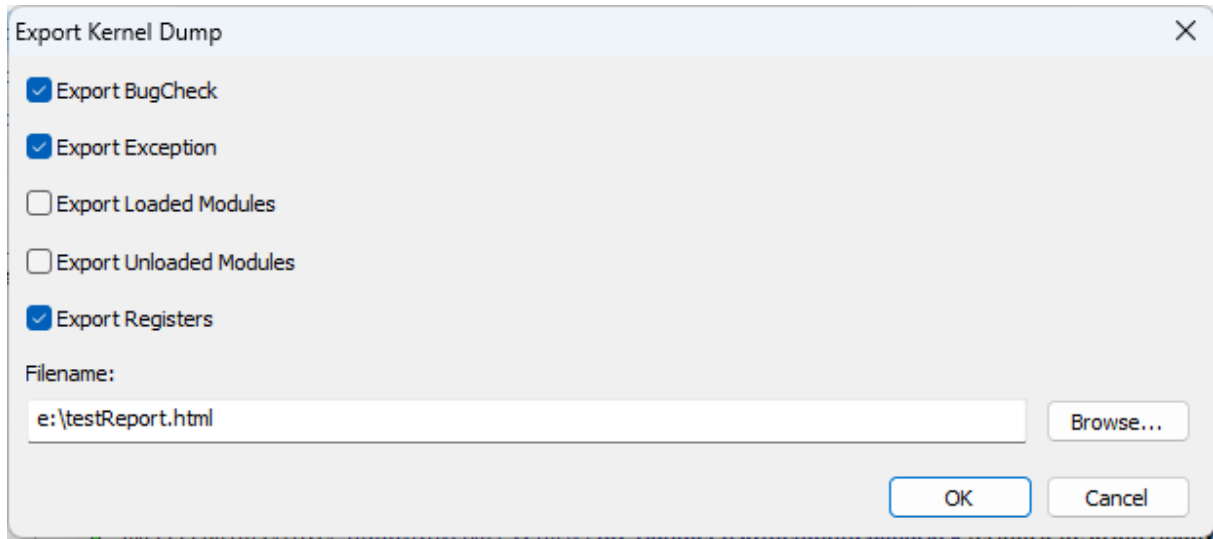
The Export as HTML dialog allows you to specify the criteria that will be used when exporting data from the minidump or kernel dump in html format.

### Minidumps



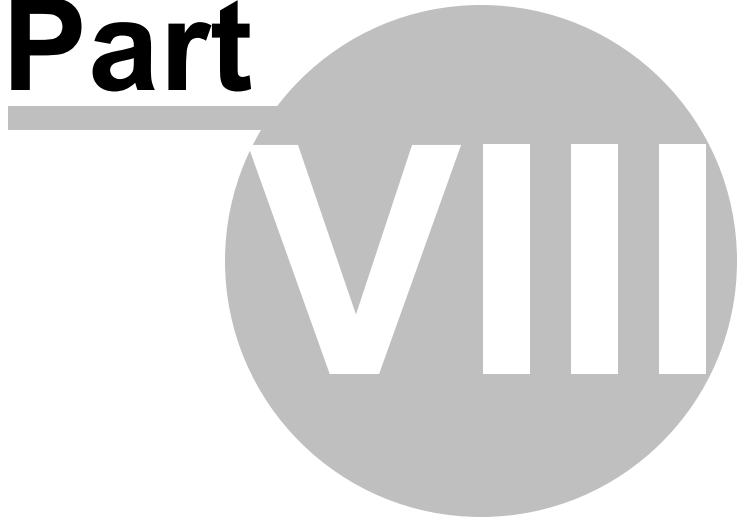
- **Export Exception** > include exception information and the exception callstack in the exported data
- **Export All Threads** > include information about each thread and it's callstack in the exported data
- **Export Modules** > include information about loaded modules in the exported data
- **Export Unloaded Modules** > include information about unloaded modules in the exported data
- **Export Registers** > include the registers from the exception information in the exported data
- **Browse...** > display the file browser to choose the filename to export the text data to

### Kernel Dumps



- **Export BugCheck** > include BugCheck information in the exported data
- **Export Exception** > include exception information and the exception callstack in the exported data
- **Export Modules** > include information about loaded modules in the exported data
- **Export Unloaded Modules** > include information about unloaded modules in the exported data
- **Export Registers** > include the registers from the exception information in the exported data
- **Browse...** > display the file browser to choose the filename to export the text data to

**Part**



## 8 Command Line

The command line support in Minidump Browser is very simple.

### **/minidump**

The **/minidump** command specifies the minidump or kernel dump to load.

The **/minidump** command takes one argument, a filename.

```
/minidump c:\windows\minidumps\crash.dmp
```

### **/exportFormat**

The **/exportFormat** command specifies the format of the exported document. Text or HTML.

The **/exportFormat** command takes one argument, **txt** or **html**.

```
/exportFormat html
```

### **/exportFileName**

The **/exportFileName** command specifies the file to export data to.

The **/exportFileName** command takes one argument, the full path to file to export.

```
/exportFileName e:\exportedData\minidump-video-server-0113A.html
```

### **/exportBugCheck**

The **/exportBugCheck** command includes BugCheck information in the exported data. This only works for kernel dumps.

### **/exportExceptionCallstack**

The **/exportExceptionCallstack** command includes Exception information in the exported data. This works for kernel dumps, and for minidumps that contain an exception.

### **/exportAllThreadsCallstack**

The **/exportAllThreadsCallstack** command includes callstack information for all threads in the minidump in the exported data. This only works for minidumps.

### **/exportLoadedModules**

The **/exportLoadedModules** command includes information about the loaded modules in the exported data.

### **/exportUnloadedModules**

The **/exportUnloadedModules** command includes information about unloaded modules in the exported data.

### **/exportRegisters**

The **/exportRegisters** command includes information from the exception context in the exported data. This works for kernel dumps, and for minidumps that contain an exception.

### **/verbose**

The **/verbose** command prints additional information about DLL downloading and symbol resolving to the standard output. This only works when you are running from the command line performing an export.

## **Example command lines**

### **Load a minidump**

```
minidumpBrowser.exe /minidump c:\windows\minidumps\crash.dmp
```

```
minidumpBrowser_x64.exe /minidump c:\windows\minidumps\crash.dmp
```

This command line will load and display the file `c:\windows\minidumps\crash.dmp` in Minidump Browser.

### **Load a minidump and export data to html**

```
minidumpBrowser_x64.exe /minidump E:\buggyApp.dmp /exportFormat html /exportFileName e\buggyApp.dmp.html
```

This command line loads a minidump `e:\buggyApp.dmp` and exports it to a html file. The export contains the exception callstack, callstacks for all threads, the loaded modules list and the unloadedmodules list.

### **Load a kernel dump and export data to txt**

```
minidumpBrowser_x64.exe /minidump E:\buggyDriver.dmp /exportFormat txt /exportFileName e\buggyDriver.dmp.txt
```

This command line loads a kernel dump `e:\buggyDriver.dmp` and exports it to a txt file. The export contains bugcheck information, the exception callstack, the loaded modules list and the unloadedmodules list.



