Malware Analysis Appliance by Blue Coat Systems, Inc.

Task Details

Host: mag2, Sample ID: 3334, Task ID: 844

Task ID: 844
Risk Level: 6

Date Processed: 2016-05-18 10:45:28 (UTC)

Processing Time: 61.22 seconds
Virtual Environment: IntelliVM

Execution Arguments: "c:\windows\temp\758e49c5f3fae3fd55f5c26204023b81.exe"

Sample ID: 3334
Type: basic
Owner: admin

Label: 758e49c5f3fae3fd55f5c26204023b81

Date Added: 2016-05-18 10:30:52 (UTC)

File Type: PE32:win32:gui File Size: 344064 bytes

MD5: 758e49c5f3fae3fd55f5c26204023b81

SHA256: 0c71ca797853ba4553280fecadc2c082abd618e793e5bd718a8c6fd780abcc18

Description: None

Pattern Matching Results

3 Program causes a crash [Info]

2 PE: Nonstandard section

4 Reads process memory

3 Long sleep detected

6 Suspicious packer: VMProtect

Static Events

Anomaly: PE: Contains one or more non-standard sections

Process/Thread Events

Creates process: C:\WINDOWS\Temp\758e49c5f3fae3fd55f5c26204023b81.exe

["c:\windows\temp\758e49c5f3fae3fd55f5c26204023b81.exe"]

Creates process: C:\WINDOWS\system32\dwwin.exe [C:\WINDOWS\system32\dwwin.exe -x -s 436]

Loads service: RASMAN [C:\WINDOWS\system32\svchost.exe -k netsvcs]

Reads from process: PID:132 C:\WINDOWS\Temp\758e49c5f3fae3fd55f5c26204023b81.exe

Named Object Events

Creates mutex: \BaseNamedObjects\CTF.LBES.MutexDefaultS-1-5-21-1757981266-507921405-

1957994488-1003

Creates mutex: \BaseNamedObjects\CTF.Compart.MutexDefaultS-1-5-21-1757981266-507921405-

1957994488-1003

Creates mutex: \BaseNamedObjects\CTF.Asm.MutexDefaultS-1-5-21-1757981266-507921405-

1957994488-1003

Creates mutex: \BaseNamedObjects\CTF.Layouts.MutexDefaultS-1-5-21-1757981266-507921405-

1957994488-1003

Creates mutex: \BaseNamedObjects\CTF.TMD.MutexDefaultS-1-5-21-1757981266-507921405-1957994488-1003

Creates mutex: \BaseNamedObjects\CTF.TimListCache.FMPDefaultS-1-5-21-1757981266-

507921405-1957994488-1003MUTEX.DefaultS-1-5-21-1757981266-507921405-1957994488-1003

Creates mutex: \BaseNamedObjects\SHIMLIB_LOG_MUTEX

Creates mutex: \BaseNamedObjects\c:!documents and settings!admin!local

settings!temporary internet files!content.ie5!

Creates mutex: \BaseNamedObjects\c:!documents and settings!admin!cookies!
Creates mutex: \BaseNamedObjects\c:!documents and settings!admin!local

settings!history!history.ie5!

Creates mutex: \BaseNamedObjects\WininetConnectionMutex

Creates event: \BaseNamedObjects\userenv: User Profile setup event

Creates event: \BaseNamedObjects\\6295DF2D-35EE-11d1-8707-

 ${\tt 00C04FD93327} CFact Event_WinSta0_Default$

Creates semaphore: \BaseNamedObjects\MsoDWExclusive132

File System Events

Creates: C:\Documents and Settings\Admin\Local Settings\Temp\a0e7_appcompat.txt

Creates: C:\Documents and Settings\Admin\Local Settings\Temp\A56D5F.dmp

Opens: C:\Documents and Settings\Admin

Opens: C:\WINDOWS\WinSxS\x86_Microsoft.Windows.Common-

Controls_6595b64144ccf1df_6.0.2600.5512_x-ww_35d4ce83

Opens: C:\WINDOWS\WinSxS\x86_Microsoft.Windows.Common-

 $\label{lem:controls_6595b64144ccf1df_6.0.2600.5512_x-ww_35d4ce83\setminus comctl32.dll} Opens: C:\WINDOWS\system32\mbox{mobsync.dll}$

Opens: C:\WINDOWS\system32\imm32.dll
Opens: C:\WINDOWS\system32\imm32.dll
Opens: C:\WINDOWS\WindowsShell.Manifest
Opens: C:\WINDOWS\WindowsShell.Config

```
C:\WINDOWS\system32\rpcss.dll
 Opens:
 Opens:
                         C:\WINDOWS\system32\MSCTF.dll
                         C:\WINDOWS\system32\MSCTFIME.IME
 Opens:
 Opens:
                         C:\WINDOWS\system32\clbcatq.dll
 Opens:
                         C:\WINDOWS\system32\comres.dll
                         C:\WINDOWS\Registration\R00000000007.clb
 Opens:
 Opens:
                         C:\WINDOWS\system32\winlogon.exe
 Opens:
                         C:\WINDOWS\system32\xpsp2res.dll
 Opens:
                         C:\WINDOWS\system32\faultrep.dll
 Opens:
                         C:\WINDOWS\system32\winsta.dll
 Opens:
                         C:\WINDOWS\system32\netapi32.dll
 Opens:
                         C:\WINDOWS\system32\wtsapi32.dll
 Opens:
                         C:\WINDOWS\system32\setupapi.dll
 Opens:
                         C:\WINDOWS\system32\uxtheme.dll
 Opens:
                         C:\
                         C:\WINDOWS
 Opens:
                         C:\WINDOWS\system32\apphelp.dll
 Opens:
                         C:\WINDOWS\Temp\eb6cd1e7-8072-44fb-940b-f6de291c940e
 Opens:
 Opens:
                         C:\Documents and Settings\Admin\Local Settings\Temp
                         C:\WINDOWS\Temp
 Opens:
                         C:\WINDOWS\Temp\758e49c5f3fae3fd55f5c26204023b81.exe
 Opens:
 Opens:
                         C:\Documents and Settings\Admin\Local Settings\Temp\a0e7_appcompat.txt
 Opens:
                         C:\WTNDOWS\system32
 Opens:
                         C:\WINDOWS\system32\kernel32.dll
 Opens:
                         C:\WINDOWS\system32\dwwin.exe
                         C:\WINDOWS\AppPatch\sysmain.sdb
 Opens:
 Opens:
                         C:\WINDOWS\AppPatch\systest.sdb
 Opens:
                         C:\WINDOWS\system32\dwwin.exe.Manifest
                         C:\WINDOWS\system32\shimeng.dll
 Opens:
 Opens:
                         C:\WINDOWS\AppPatch\AcGenral.dll
 Opens:
                         C:\WINDOWS\system32\winmm.dll
 Opens:
                         C:\WINDOWS\system32\msacm32.dll
 Opens:
                         C:\WINDOWS\system32\comctl32.dll
 Opens:
                         C:\WINDOWS\system32\COMCTL32.DLL.124.Manifest
 Opens:
                         C:\WINDOWS\system32\COMCTL32.DLL.124.Config
 Opens:
                         C:\WINDOWS\system32\shell32.dll
 Opens:
                         C:\WINDOWS\system32\SHELL32.DLL.124.Manifest
 Opens:
                         C:\WINDOWS\system32\SHELL32.DLL.124.Config
 Opens:
                         C:\WINDOWS\system32\URLMON.DLL.123.Manifest
 Opens:
                         C:\WINDOWS\system32\URLMON.DLL.123.Config
 Opens:
                         C:\WINDOWS\system32\WININET.DLL.123.Manifest
 Opens:
                         C:\WINDOWS\system32\WININET.DLL.123.Config
 Opens:
                         C:\WINDOWS\system32\riched20.dll
 Opens:
                         C:\WINDOWS\system32\shfolder.dll
 Opens:
                         C:\WINDOWS\system32\psapi.dll
 Opens:
                         C:\WINDOWS\system32\ntdll.dll
                         C:\WINDOWS\system32\msvcrt.dll
 Opens:
 Opens:
                         C:\WINDOWS\system32\advapi32.dll
 Opens:
                         C:\WINDOWS\system32\rpcrt4.dll
 Opens:
                         C:\WINDOWS\system32\secur32.dll
 Opens:
                         C:\WINDOWS\system32\gdi32.dll
 Opens:
                         C:\WINDOWS\system32\user32.dll
                         C:\WINDOWS\system32\ole32.dll
 Opens:
 Opens:
                         C:\WINDOWS\system32\shlwapi.dll
 Opens:
                         C:\WINDOWS\system32\userenv.dll
 Opens:
                         C:\WINDOWS\system32\oleaut32.dll
 Opens:
                         C:\WINDOWS\system32\version.dll
 Opens:
                         C:\Documents and Settings\Admin\Local Settings\Temp\A56D5F.dmp
 Opens:
                         C:\WINDOWS\system32\1033\dwintl.dll
 Opens:
                         C:\Documents and Settings\Admin\Local Settings\Temporary Internet Files
 Opens:
                         C:\Documents and Settings\Admin\Local Settings\Temporary Internet
Files\Content.IE5
                         C:\Documents and Settings\Admin\Local Settings\History
 Opens:
 Opens:
                         C:\Documents and Settings\Admin\Local Settings\History\History.IE5
 Opens:
                         C:\Documents and Settings\Admin\Local Settings\Temporary Internet
Files\Content.IE5\index.dat
 Opens:
                         C:\Documents and Settings\Admin\Cookies
                         C:\Documents and Settings\Admin\Cookies\index.dat
 Opens:
 Opens:
                         C:\Documents and Settings\Admin\Local
Settings\History\History.IE5\index.dat
                         C:\WINDOWS\system32\ws2_32.dll
 Opens:
 Opens:
                         C:\WINDOWS\system32\ws2help.dll
 Opens:
                         C:\WINDOWS\system32\rasapi32.dll
 Opens:
                         C:\WINDOWS\system32\rasman.dll
 Opens:
                         C:\WINDOWS\system32\tapi32.dll
                         C:\WINDOWS\system32\rtutils.dll
 Opens:
 Opens:
                         C:\WINDOWS\system32\TAPI32.dll.124.Manifest
 Opens:
                         C:\WINDOWS\system32\TAPI32.dll.124.Config
 Opens:
                         C:\AUTOEXEC.BAT
 Opens:
                         C:\Documents and Settings\All Users\Application
Data\Microsoft\Network\Connections\Pbk
                         C:\WINDOWS\system32\ras
 Opens:
 Opens:
                         C:\Documents and Settings\Admin\Application
```

Data\Microsoft\Network\Connections\Pbk\

C:\WINDOWS\system32\sensapi.dll Opens: Opens: C:\WINDOWS\Fonts\sserife.fon

C:\WINDOWS\win.ini Opens:

Opens: C:\WINDOWS\system32\msv1_0.dll Opens: C:\WINDOWS\system32\iphlpapi.dll

C:\Documents and Settings\Admin\Local Settings\Temp\a0e7_appcompat.txt Writes to:

C:\Documents and Settings\Admin\Local Settings\Temp\A56D5F.dmp Writes to:

C:\WINDOWS\Registration\R00000000007.clb Reads from:

C:\WINDOWS\Temp\758e49c5f3fae3fd55f5c26204023b81.exe Reads from:

Reads from: C:\AUTOEXEC.BAT C:\WINDOWS\win.ini Reads from:

Windows Registry Events

Creates key: HKLM\software\microsoft\windows\currentversion\syncmgr\handlers

HKLM\software\microsoft\pchealth\errorreporting Creates key:

Creates key: HKLM\software\microsoft\pchealth\errorreporting\exclusionlist Creates key: $\label{lem:hklm} \verb+KKLM\software\microsoft\pchealth\errorreporting\nclusion list$ HKCU\software\microsoft\windows\currentversion\internet settings Creates key:

Creates key: HKCU\software\microsoft\multimedia\audio

Creates key: HKCU\software\microsoft\multimedia\audio compression manager\ Creates key: HKCU\software\microsoft\multimedia\audio compression manager\msacm $\label{lem:hkcu} \mbox{HKCU\software\mbox{$\mbox{$\mbox{microsoft\mbox{$\mbox{}\mbox{$\mbox{\mbox Creates key:

v4.00

Creates key: HKCU\software\microsoft\windows\currentversion\explorer\user shell

folders

Creates key: HKCU\software\microsoft\windows\currentversion\explorer\shell folders

Creates key: HKLM\software\microsoft\tracing

HKLM\software\microsoft\windows\currentversion\explorer\user shell Creates kev:

folders

Creates key: HKCU\software\microsoft\windows nt\currentversion\winlogon

Creates key: HKLM\software\microsoft\windows\currentversion\explorer\shell folders

Creates key: HKCU\software\microsoft\windows\currentversion\internet

settings\connections

HKLM\software\microsoft\pchealth\errorreporting\dw[dwfiletreeroot] Deletes value:

Deletes value: HKCU\software\microsoft\windows\currentversion\internet

settings[proxyserver]

HKCU\software\microsoft\windows\currentversion\internet Deletes value:

settings[proxyoverride]

Deletes value: HKCU\software\microsoft\windows\currentversion\internet

settings[autoconfigurl]

Opens key: HKLM\software\microsoft\windows nt\currentversion\image file execution

options\758e49c5f3fae3fd55f5c26204023b81.exe

HKLM\system\currentcontrolset\control\terminal server Opens key:

Opens key:

HKLM\software\microsoft\windows\currentversion\sidebyside\assemblystorageroots Opens key: HKLM\system\currentcontrolset\control\safeboot\option

Opens key: HKLM\software\policies\microsoft\windows\safer\codeidentifiers Opens key: HKCU\software\policies\microsoft\windows\safer\codeidentifiers

Opens key: HKLM\software\microsoft\windows nt\currentversion\image file execution

options\msvcrt.dll

Opens key: HKLM\software\microsoft\windows nt\currentversion\image file execution

options\secur32.dll

Opens key: HKLM\software\microsoft\windows nt\currentversion\image file execution

options\rpcrt4.dll

Opens key: HKLM\software\microsoft\windows nt\currentversion\image file execution

options\advapi32.dll

Opens key: HKLM\software\microsoft\windows nt\currentversion\winlogon

HKLM\ Opens key:

Opens key: HKLM\software\microsoft\windows nt\currentversion\diagnostics

Opens key: HKLM\software\microsoft\windows nt\currentversion\image file execution

options\user32.dll

Opens key: HKLM\system\currentcontrolset\control\session manager

Opens key: HKLM\software\microsoft\windows nt\currentversion\image file execution

options\imm32.dll

Opens key: $\label{lem:hklm} \verb+Kklm/software/microsoft/windows nt/currentversion/image file execution$ options\ntdll.dll

Opens key:

HKLM\software\microsoft\windows nt\currentversion\image file execution options\kernel32.dll

Opens key:

HKLM\software\microsoft\windows nt\currentversion\image file execution options\gdi32.dll

Opens key:

HKLM\software\microsoft\windows nt\currentversion\image file execution options\ole32.dll

Opens key:

HKLM\software\microsoft\windows nt\currentversion\image file execution

options\shlwapi.dll

Opens key: HKLM\software\microsoft\windows nt\currentversion\image file execution

options\comctl32.dll

HKLM\software\microsoft\windows nt\currentversion\image file execution Opens key:

options\mobsync.dll

Opens key: HKLM\system\currentcontrolset\control\error message instrument\ Opens key: HKLM\system\currentcontrolset\control\error message instrument Opens key: HKLM\software\microsoft\windows nt\currentversion\gre initialize Opens key: HKLM\software\microsoft\windows nt\currentversion\compatibility32
Opens key: HKLM\software\microsoft\windows nt\currentversion\ime compatibility

Opens key: HKLM\software\microsoft\windows nt\currentversion\windows

Opens key: HKLM\software\microsoft\ole

Opens key: HKCR\interface

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Opens key: HKLM\software\microsoft\windows\currentversion\explorer\performance

Opens key: HKCU\

Opens key: HKCU\software\policies\microsoft\control panel\desktop

Opens key: HKCU\control panel\desktop

Opens key: HKCU\software\microsoft\windows\currentversion\explorer\advanced
Opens key: HKLM\software\microsoft\windows nt\currentversion\languagepack
Opens key: HKLM\software\microsoft\windows nt\currentversion\image file execution

options\userenv.dll

Opens key: HKLM\system\currentcontrolset\control\productoptions

Opens key: HKCU\software\microsoft\windows\currentversion\explorer\user shell

folders
Opens key: HKLM\software\policies\microsoft\windows\system

Opens key: HKLM\software\microsoft\windows nt\currentversion\profilelist\s-1-5-21-

1757981266-507921405-1957994488-1003

Opens key: HKLM\software\microsoft\windows nt\currentversion\image file execution

options\msctf.dll
 Opens key:

HKLM\software\microsoft\ctf\compatibility\758e49c5f3fae3fd55f5c26204023b81.exe

Opens key: HKLM\software\microsoft\ctf\systemshared\

Opens key: HKCU\keyboard layout\toggle Opens key: HKLM\software\microsoft\ctf\

Opens key: HKLM\software\microsoft\windows nt\currentversion\imm

Opens key: HKLM\software\microsoft\windows nt\currentversion\image file execution

options\version.dll

Opens key: HKCU\software\microsoft\windows nt\currentversion\appcompatflags\layers
Opens key: HKLM\software\microsoft\windows nt\currentversion\image file execution

options\msctfime.ime

Opens key: HKCU\software\microsoft\ctf

Opens key: HKLM\software\microsoft\ctf\systemshared

Opens key: HKLM\software\microsoft\com3

Opens key: HKLM\software\microsoft\windows nt\currentversion\image file execution

options\comres.dll

Opens key: options\oleaut32.dll

HKLM\software\microsoft\windows nt\currentversion\image file execution

Opens key: HKLM\software\microsoft\oleaut
Opens key: HKLM\software\microsoft\oleaut\userera

Opens key: HKLM\software\microsoft\windows nt\currentversion\image file execution

options\clbcatq.dll

Opens key: HKLM\software\microsoft\com3\debug

Opens key: HKCU\software\classes\ Opens key: HKLM\software\classes

Opens key: HKU\
Opens key: HKCR\clsid

 $Opens~key: \\ HKCU \setminus software \\ classes \\ clsid \\ \{6295df2d-35ee-11d1-8707-00c04fd93327\} \\$

Opens key: HKCR\clsid\{6295df2d-35ee-11d1-8707-00c04fd93327}
Opens key: HKCU\software\classes\clsid\{6295df2d-35ee-11d1-8707-

00c04fd93327}\treatas

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00c04fd93327}\inprocserver32

Opens key: $\label{eq:hkcr} \mbox{HKCR\clsid\{6295df2d-35ee-11d1-8707-00c04fd93327\}\inprocserver32}} \mbox{ } \mbox{ }$

Opens key: HKCU\software\classes\clsid\{6295df2d-35ee-11d1-8707-

00c04fd93327}\inprocserverx86

Opens key: HKCR\clsid\{6295df2d-35ee-11d1-8707-00c04fd93327}\inprocserverx86

Opens key: HKCU\software\classes\clsid\{6295df2d-35ee-11d1-8707-

 $00c04fd93327 \} \\ local server 32$

Opens key: $\label{eq:hkcrvc1} \mbox{HKCR\clsid$

Opens key: HKCU\software\classes\clsid\{6295df2d-35ee-11d1-8707-

 ${\tt 00c04fd93327} \verb|\inprochandler32| \\$

Opens key: HKCU\software\classes\clsid\{6295df2d-35ee-11d1-8707-

00c04fd93327}\inprochandlerx86

Opens key: HKCR\clsid\{6295df2d-35ee-11d1-8707-00c04fd93327}\inprochandlerx86

Opens key: HKLM\software\microsoft\rpc\pagedbuffers

Opens key: HKLM\software\microsoft\rpc

Opens key: $\qquad \qquad \text{HKLM} \\ \text{Software} \\ \text{microsoft} \\ \text{windows nt} \\ \text{currentversion} \\ \text{image file execution}$

options\758e49c5f3fae3fd55f5c26204023b81.exe\rpcthreadpoolthrottle

Opens key: HKLM\software\policies\microsoft\windows nt\rpc

Opens key: HKCU\software\classes\appid\758e49c5f3fae3fd55f5c26204023b81.exe

Opens key: HKCR\appid\758e49c5f3fae3fd55f5c26204023b81.exe
Opens key: HKLM\system\currentcontrol\computername

Opens key: HKLM\system\currentcontrolset\control\computername\activecomputername

Opens key: HKLM\system\currentcontrolset\control\lsa

Opens key: HKLM\software\microsoft\windows nt\currentversion\aedebug

Opens key: HKLM\software\microsoft\windows nt\currentversion\image file execution

options\netapi32.dll

Opens key: HKLM\software\microsoft\windows nt\currentversion\image file execution

options\winsta.dll HKLM\software\microsoft\windows nt\currentversion\image file execution Opens key: options\wtsapi32.dll Opens key: HKLM\software\microsoft\windows nt\currentversion\image file execution options\setupapi.dll Opens key: HKLM\system\setup Opens key: HKLM\system\currentcontrolset\control\minint HKLM\system\wpa\pnp Opens key: Opens key: HKLM\software\microsoft\windows\currentversion\setup Opens key: HKLM\software\microsoft\windows\currentversion Opens key: HKLM\software\microsoft\windows\currentversion\setup\apploglevels Opens key: HKLM\system\currentcontrolset\services\tcpip\parameters Opens key: HKLM\software\policies\microsoft\system\dnsclient Opens key: HKLM\software\microsoft\windows nt\currentversion\image file execution options\faultrep.dll Opens key: HKLM\software\microsoft\windows nt\currentversion\image file execution options\xpsp2res.dll Opens key: HKLM\software\policies\microsoft\pchealth\errorreporting Opens key: HKLM\software\microsoft\pchealth\errorreporting\dw HKLM\software\microsoft\windows nt\currentversion\image file execution Opens key: options\uxtheme.dll Opens key: HKCU\software\microsoft\windows\currentversion\thememanager Opens kev: HKLM\software\microsoft\windows nt\currentversion\image file execution options\apphelp.dll Opens key: $HKLM \verb|\software\m| icrosoft \verb|\windows\currentversion\explorer\advanced|$ $\label{lem:hklmsoftware} \verb+MKLM+ software+ \verb+microsoft+ windows nt+ current version+ fontsubstitutes$ Opens key: Opens key: HKLM\software\microsoft\mobile\sens Opens key: HKLM\system\currentcontrolset\control\session manager\appcertdlls ${\tt HKLM \ } system \verb|\ current control \verb|\ session manager \verb|\ app compatibility| \\$ Opens key: Opens key: HKLM\system\wpa\tabletpc Opens key: HKLM\system\wpa\mediacenter $\label{lem:hklm} \mbox{ HKLM\software\mbox{\sc microsoft\windows nt\currentversion\app} compatflags\layers} \\$ Opens key: Opens key: HKLM\software\microsoft\windows nt\currentversion\appcompatflags\custom\dwwin.exe Opens key: HKLM\software\microsoft\windows nt\currentversion\appcompatflags Opens key: HKCU\software\microsoft\windows nt\currentversion\appcompatflags HKLM\software\policies\microsoft\windows\safer\levelobjects Opens kev: Opens key: HKLM\software\policies\microsoft\windows\safer\codeidentifiers\0\paths Opens key: be2efd2c1a33} $HKLM \setminus software \setminus policies \setminus microsoft \setminus windows \setminus safer \setminus code identifiers \setminus 0 \setminus hashes$ Opens key: Opens kev: edd5fbde1328} Opens key: $HKLM \ software \ policies \ microsoft \ windows \ safer \ code identifiers \ 0 \ hashes \ \{7fb9cd2e-3076-4df9-a57b-4df9-a57$ b813f72dbb91} Opens kev: HKLM\software\policies\microsoft\windows\safer\codeidentifiers\0\hashes\{81d1fe15-dd9d-4762-b16d-7c29ddecae3f} Opens kev: $HKLM \ software \ policies \ microsoft \ windows \ safer \ code identifiers \ 0 \ hashes \ \{94e3e076-8f53-42a5-8411-1444, \ normalization \$ 085bcc18a68d} Opens kev: HKLM\software\policies\microsoft\windows\safer\codeidentifiers\0\hashes\{dc971ee5-44eb-4fe4-ae2eb91490411bfc} Opens key: HKLM\software\policies\microsoft\windows\safer\codeidentifiers\0\urlzones $HKLM \ software \ policies \ microsoft \ windows \ safer \ code identifiers \ \ 4096 \ paths$ Opens key: HKLM\software\policies\microsoft\windows\safer\codeidentifiers\4096\hashes Opens kev: HKLM\software\policies\microsoft\windows\safer\codeidentifiers\4096\urlzones $HKLM \setminus software \setminus policies \setminus microsoft \setminus windows \setminus safer \setminus code identifiers \setminus 65536 \setminus paths$ Opens key: $HKLM \ software \ bolicies \ microsoft \ windows \ safer \ code identifiers \ 65536 \ has hes$ Opens kev: Opens kev: HKLM\software\policies\microsoft\windows\safer\codeidentifiers\131072\paths Opens key: HKLM\software\policies\microsoft\windows\safer\codeidentifiers\131072\hashes Opens kev: $HKLM \setminus software \setminus policies \setminus microsoft \setminus windows \setminus safer \setminus code identifiers \setminus 131072 \setminus urlzones$ Opens key: HKLM\software\policies\microsoft\windows\safer\codeidentifiers\262144\paths Opens key: HKLM\software\policies\microsoft\windows\safer\codeidentifiers\262144\hashes Opens key: $HKLM \setminus software \setminus policies \setminus microsoft \setminus windows \setminus safer \setminus code identifiers \setminus 262144 \setminus urlzones$

```
Opens key:
                                      HKCU\software\policies\microsoft\windows\safer\codeidentifiers\0\paths
  Opens key:
                                      HKCU\software\policies\microsoft\windows\safer\codeidentifiers\0\hashes
  Opens key:
HKCU\software\policies\microsoft\windows\safer\codeidentifiers\0\urlzones
  Opens kev:
HKCU \setminus software \setminus policies \setminus microsoft \setminus windows \setminus safer \setminus code identifiers \setminus 4096 \setminus paths
  Opens key:
HKCU\software\policies\microsoft\windows\safer\codeidentifiers\4096\hashes
  Opens key:
HKCU\software\policies\microsoft\windows\safer\codeidentifiers\4096\urlzones
  Opens kev:
HKCU \setminus software \setminus policies \setminus microsoft \setminus windows \setminus safer \setminus code identifiers \setminus 65536 \setminus paths
  Opens key:
\label{lem:hkcu} \begin{tabular}{ll} HKCU \software \policies \microsoft \windows \safer \code identifiers \hline \code identifiers \code \cod
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HKCU\software\policies\microsoft\windows\safer\codeidentifiers\65536\urlzones
  Opens key:
HKCU\software\policies\microsoft\windows\safer\codeidentifiers\131072\paths
  Opens key:
HKCU\software\policies\microsoft\windows\safer\codeidentifiers\131072\hashes
  Opens key:
HKCU\software\policies\microsoft\windows\safer\codeidentifiers\131072\urlzones
  Opens kev:
HKCU\software\policies\microsoft\windows\safer\codeidentifiers\262144\paths
  Opens key:
HKCU\software\policies\microsoft\windows\safer\codeidentifiers\262144\hashes
HKCU\software\policies\microsoft\windows\safer\codeidentifiers\262144\urlzones
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  Opens key:
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  Opens key:
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  Opens key:
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explorer\main\featurecontrol\feature_protocol_lockdown
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  Opens key:
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  Opens key:
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  Opens key:
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  Opens kev:
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settings\zonemap\domains\
  Opens key:
                                      HKCU\software\policies\microsoft\windows\currentversion\internet
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                                      HKLM\software\policies\microsoft\windows\currentversion\internet
  Opens key:
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  Opens key:
                                      HKCU\software\policies\microsoft\windows\currentversion\internet
settings\zonemap\ranges\
  Opens key:
                                      HKCU\software\microsoft\internet
explorer\main\featurecontrol\feature_unc_savedfilecheck
  Opens key:
                                      HKLM\software\microsoft\internet
explorer\main\featurecontrol\feature_unc_savedfilecheck
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Opens key:
                         HKLM\system\currentcontrolset\control\wmi\security
 Opens key:
                         HKLM\software\microsoft\windows nt\currentversion\drivers32
 Opens kev:
HKLM\system\currentcontrolset\control\mediaproperties\privateproperties\joystick\winmm
 Opens kev:
                         HKLM\software\microsoft\audiocompressionmanager\drivercache
 Opens key:
HKLM\software\microsoft\audiocompressionmanager\drivercache\msacm.imaadpcm
 Opens kev:
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 $HKLM \setminus software \setminus microsoft \setminus audio compression manager \setminus driver cache \setminus msadpc manager \setminus driver cache \setminus msadpc manager \setminus driver cache \setminus msadpc msa$

HKLM\software\microsoft\audiocompressionmanager\drivercache\msacm.msg711 Opens key:

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Opens key:

 $HKLM \setminus software \setminus microsoft \setminus audiocompression manager \setminus driver cache \setminus msacm. sl_anet$

Opens key: HKLM\software\microsoft\audiocompressionmanager\drivercache\msacm.iac2 Opens key: HKLM\software\microsoft\audiocompressionmanager\drivercache\msacm.13acm

Opens key: HKLM\system\currentcontrolset\control\mediaresources\acm

Opens key: HKCU\software\microsoft\office\10.0\common\debug

HKLM\software\microsoft\oasys\oaclient Opens kev:

Opens key: HKLM\software\microsoft\windows nt\currentversion\image file execution

options\riched20.dll

Opens key: HKLM\software\microsoft\windows nt\currentversion\image file execution

options\shfolder.dll

Opens key: HKLM\software\microsoft\office\10.0\common\installroot Opens key: HKLM\software\microsoft\ctf\compatibility\dwwin.exe

Opens key: HKLM\software\microsoft\windows nt\currentversion\image file execution

options\psapi.dll

HKLM\software\microsoft\windows nt\currentversion Opens key: Opens key: HKCU\software\microsoft\internet explorer\settings Opens key: HKLM\software\microsoft\pchealth\errorreporting\dw\debug Opens key: HKLM\software\policies\microsoft\pchealth\errorreporting\dw

Opens key: HKLM\software\microsoft\windows nt\currentversion\image file execution

options\dwwin.exe\rpcthreadpoolthrottle

HKCU\software\microsoft\windows\currentversion\internet settings Opens key:

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Opens key: HKLM\software\policies\microsoft\internet explorer HKLM\software\policies\microsoft\internet explorer\main Opens key: Opens key: HKLM\software\microsoft\windows\currentversion\internet

settings\5.0\cache

Opens key: HKCU\software\microsoft\windows\currentversion\internet

settings\5.0\cache

HKCU\software\microsoft\windows\currentversion\internet Opens kev:

settings\5.0\cache\content

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HKCU\software\microsoft\windows\currentversion\internet Opens key:

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settings\5.0\cache\history Opens key:

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Opens kev: HKCU\software\microsoft\windows\currentversion\internet

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Opens key: HKCU\software\microsoft\windows\currentversion\internet

settings\5.0\cache\extensible cache\privacie:

Opens key: HKCU\software\microsoft\internet

explorer\main\featurecontrol\retry_headeronlypost_onconnectionreset

HKLM\software\microsoft\internet Opens key:

explorer\main\featurecontrol\retry_headeronlypost_onconnectionreset

Opens key: HKCU\software\microsoft\internet explorer\main\featurecontrol\feature_bufferbreaking_818408 Opens key: HKLM\software\microsoft\internet

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explorer\main\featurecontrol\feature_bufferbreaking_818408
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explorer\main\featurecontrol\feature_skip_post_retry_on_internetwritefile_kb895954
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settings\5.0\cache
 Opens key:
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explorer\main\featurecontrol\feature_disallow_null_in_response_headers
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explorer \verb|\main| featurecontrol| feature_passport\_check\_302\_for\_success\_kb949059
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options\ws2_32.dll
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Oueries value: HKLM\software\microsoft\windows

nt\currentversion\winlogon[rsopdebuglevel]

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Queries value:

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Oueries value:

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Oueries value: HKLM\software\microsoft\windows\currentversion[devicepath] Queries value: HKLM\software\microsoft\windows\currentversion\setup[loglevel] Queries value: HKLM\software\microsoft\windows\currentversion\setup[logpath] Oueries value: HKLM\system\currentcontrolset\services\tcpip\parameters[hostname] Queries value: HKLM\system\currentcontrolset\services\tcpip\parameters[domain] Oueries value: HKLM\software\microsoft\pchealth\errorreporting[doreport] Oueries value: HKLM\software\microsoft\pchealth\errorreporting[showui] HKLM\software\microsoft\pchealth\errorreporting[allornone] Oueries value:

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Oueries value: HKLM\software\microsoft\pchealth\errorreporting[includekernelfaults] Oueries value: HKLM\software\microsoft\pchealth\errorreporting[includeshutdownerrs] HKCU\software\microsoft\windows\currentversion\thememanager[compositing] Oueries value: Oueries value: HKLM\software\microsoft\pchealth\errorreporting[numberoffaultpipes] Queries value: HKLM\software\microsoft\pchealth\errorreporting[numberofhangpipes] Queries value: HKLM\software\microsoft\pchealth\errorreporting[maxuserqueuesize] Oueries value: HKLM\software\microsoft\pchealth\errorreporting[forcequeuemode]

Queries value: HKCU\control panel\desktop[lamebuttontext]

Oueries value:

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Oueries value:

Queries value:

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Oueries value:

Queries value:

 $HKCU \ software \ microsoft \ windows \ current version \ (explorer \ advanced [list view shadow]) \ described by the software \ microsoft \ windows \ (explorer \ advanced \ microsoft) \ described by the software \ microsoft \ windows \ (explorer \ advanced \ microsoft) \ described by the software \ microsoft \ windows \ (explorer \ advanced \ microsoft) \ described by the software \ (explorer \ advanced \ microsoft) \ described by the software \ (explorer \ advanced \ microsoft) \ described \ described$ Queries value:

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manager\appcompatibility[disableappcompat]

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Queries value:

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Queries value:

 $\label{lem:hklmsoftware} HKLM \software \policies \microsoft \windows \safer \code identifiers \oldsymbol{lem:hklk} \end{2.5} $$411-085bcc18a68d \end{2.5} itemsize \partial properties \partial properties$

Queries value:

 $\label{thm:local-bound} HKLM\software\policies\microsoft\windows\safer\codeidentifiers\0\hashes\{94e3e076-8f53-42a5-8411-085bcc18a68d}\ [saferflags]$

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                          HKLM\software\microsoft\windows\currentversion\internet
settings[nocheckautodialoverride]
                          HKCU\software\microsoft\windows\currentversion\internet
 Oueries value:
settings[dontusednsloadbalancing]
 Oueries value:
                          HKLM\software\microsoft\windows\currentversion\internet
settings[dontusednsloadbalancing]
                          HKLM\software\microsoft\windows\currentversion\internet
 Queries value:
settings[sharecredswithwinhttp]
                          HKCU\software\microsoft\windows\currentversion\internet
 Oueries value:
settings[mimeexclusionlistforcache]
```

```
Oueries value:
                        HKCU\software\microsoft\windows\currentversion\internet
settings[headerexclusionlistforcache]
 Queries value:
                        \label{lem:hkcu} \verb+KKCU \software \verb+microsoft \verb+windows \verb+current version \verb+\internet+
settings[dnscacheenabled]
                        HKCU\software\microsoft\windows\currentversion\internet
 Oueries value:
settings[dnscacheentries]
 Queries value:
                        \label{lem:hkcu} \verb+KKCU \software \verb+microsoft \verb+windows \verb+current version \verb+\internet+
settings[dnscachetimeout]
 Queries value:
                        HKCU\software\microsoft\windows\currentversion\internet
settings[warnonpost]
                        HKCU\software\microsoft\windows\currentversion\internet
 Oueries value:
settings[warnalwaysonpost]
                        HKCU\software\microsoft\windows\currentversion\internet
 Queries value:
settings[warnonzonecrossing]
                        \label{lem:hkcu} \verb+KKCU \software \verb+microsoft \verb+windows \verb+current version \verb+\internet+
 Queries value:
settings[warnonbadcertsending]
                        HKCU\software\microsoft\windows\currentversion\internet
 Oueries value:
settings[warnonbadcertrecving]
                        HKCU\software\microsoft\windows\currentversion\internet
 Queries value:
settings[warnonpostredirect]
                        \label{lem:hkcu} \verb+KKCU \software \verb+microsoft \verb+windows \verb+current version \verb+\internet+
 Queries value:
settings[alwaysdrainonredirect]
                        HKCU\software\microsoft\windows\currentversion\internet
 Oueries value:
settings[warnonhttpstohttpredirect]
 Queries value:
HKLM\system\currentcontrolset\services\winsock2\parameters[winsock_registry_version]
HKLM\system\currentcontrolset\services\winsock2\parameters\protocol catalog9[serial access num]
 Oueries value:
HKLM\system\currentcontrolset\services\winsock2\parameters\protocol_catalog9[next_catalog_entry_id]
 Oueries value:
HKLM\system\currentcontrolset\services\winsock2\parameters\protocol_catalog9[num_catalog_entries]
Oueries value:
HKLM\system\currentcontrolset\services\winsock2\parameters\protocol_catalog9\catalog_entries\000000000002[packedcatalogitem]
 Oueries value:
Queries value:
Queries value:
HKLM \ system \ current control set \ services \ winsock 2 \ parameters \ protocol\_catalog 9 \ catalog\_entries \ 000000000005 \ [packed catalog item]
 Oueries value:
Oueries value:
HKLM\system\currentcontrolset\services\winsock2\parameters\protocol_catalog9\catalog_entries\00000000007[packedcatalogitem]
 Queries value:
HKLM\system\currentcontrolset\services\winsock2\parameters\protocol_catalog9\catalog_entries\000000000008[packedcatalogitem]
 Oueries value:
HKLM\system\currentcontrolset\services\winsock2\parameters\protocol_catalog9\catalog_entries\000000000009[packedcatalogitem]
 Oueries value:
HKLM\system\currentcontrolset\services\winsock2\parameters\protocol_catalog9\catalog_entries\000000000010[packedcatalogitem]
 Queries value:
HKLM\system\currentcontrolset\services\winsock2\parameters\protocol_catalog9\catalog_entries\000000000011[packedcatalogitem]
 Oueries value:
HKLM\system\currentcontrolset\services\winsock2\parameters\namespace_catalog5[serial_access_num]
 Oueries value:
HKLM\system\currentcontrolset\services\winsock2\parameters\namespace catalog5[num catalog entries]
 Queries value:
HKLM \ system \ current control set \ services \ winsock 2 \ parameters \ namespace \_catalog5 \ catalog\_entries \ 00000000001 [library path]
 Queries value:
Queries value:
HKLM \setminus system \setminus current control set \setminus services \setminus winsock 2 \cap ameters \setminus namespace\_catalog S \setminus catalog\_entries \setminus 000000000001[providerid]
 Queries value:
HKLM \ system \ (current control set \ services \ winsock 2 \ parameters \ names pace\_catalog 5 \ (catalog\_entries \ 000000000001 \ [address family]
 Queries value:
HKLM \ system \ (current control set \ services \ winsock 2 \ parameters \ name space\_catalog 5 \ (catalog\_entries \ 000000000001[supported name space]]
 Queries value:
HKLM\system\currentcontrolset\services\winsock2\parameters\namespace_catalog5\catalog_entries\00000000001[enabled]
 Queries value:
HKLM\system\currentcontrolset\services\winsock2\parameters\namespace_catalog5\catalog_entries\00000000001[version]
 Oueries value:
HKLM\system\currentcontrolset\services\winsock2\parameters\namespace_catalog5\catalog_entries\00000000001[storesserviceclassinfo]
 Queries value:
HKLM\system\currentcontrolset\services\winsock2\parameters\namespace_catalog5\catalog_entries\00000000002[librarypath]
 Queries value:
HKLM\system\currentcontrolset\services\winsock2\parameters\namespace_catalog5\catalog_entries\000000000002[displaystring]
 Oueries value:
HKLM\system\currentcontrolset\services\winsock2\parameters\namespace_catalog5\catalog_entries\000000000002[providerid]
 Queries value:
```

 $HKLM \ system \ (current control set \ services \ winsock 2 \ parameters \ name space_catalog 5 \ (catalog_entries \ 0000000000002 [address family])$

Queries value:

```
Oueries value:
HKLM\system\currentcontrolset\services\winsock2\parameters\namespace_catalog5\catalog_entries\000000000002[enabled]
  Queries value:
HKLM \ system \ (current control set \ services \ winsock 2 \ parameters \ namespace\_catalog \ services \ winsock 2 \ parameters \ namespace\_catalog \ services \ winsock 2 \ parameters \ namespace\_catalog \ services \ winsock 2 \ parameters \ namespace\_catalog \ services \ winsock 2 \ parameters \ namespace\_catalog \ services \ winsock 2 \ parameters \ namespace\_catalog \ services \ winsock 2 \ parameters \ namespace\_catalog \ services \ winsock 2 \ parameters \ namespace\_catalog \ services \ winsock 2 \ parameters \ namespace\_catalog \ services \ namespace\_catalog \ namespace\_
  Queries value:
HKLM\system\currentcontrolset\services\winsock2\parameters\namespace_catalog5\catalog_entries\000000000002[storesserviceclassinfo]
  Oueries value:
HKLM\system\currentcontrolset\services\winsock2\parameters\namespace_catalog5\catalog_entries\00000000003[librarypath]
  Oueries value:
HKLM \ system \ (current control set \ services \ winsock 2 \ parameters \ name space\_catalog 5 \ (catalog\_entries \ 0000000000003 \ [displaystring]
  Queries value:
Oueries value:
HKLM\system\currentcontrolset\services\winsock2\parameters\namespace_catalog5\catalog_entries\00000000003[addressfamily]
  Queries value:
Queries value:
Queries value:
HKLM \setminus system \setminus current control set \setminus services \setminus winsock 2 \cap ameters \setminus namespace\_catalog 5 \setminus catalog\_entries \setminus 0000000000003 [version]
  Queries value:
HKLM\system\currentcontrolset\services\winsock2\parameters\namespace_catalog_\catalog_entries\00000000003[storesserviceclassinfo]
HKLM\system\currentcontrolset\services\winsock2\parameters[ws2_32numhandlebuckets]
  Queries value:
HKLM\system\currentcontrolset\services\winsock2\parameters[ws2_32spincount]
  Queries value:
                                   HKCU\software\microsoft\windows\currentversion\internet
settings[globaluseroffline]
                                  HKCU\software\microsoft\windows\currentversion\internet
  Queries value:
settings[enableautodial]
                                  HKLM\software\microsoft\windows\currentversion\internet
  Queries value:
settings[urlencoding]
                                   HKCU\software\microsoft\windows\currentversion\internet
  Queries value:
settings[truncatefilename]
                                   HKCU\software\microsoft\windows\currentversion\internet
  Queries value:
settings[badproxvexpirestime]
  Queries value:
HKLM\software\microsoft\windows\currentversion\telephony[tapi32maxnumrequestretries]
  Queries value:
HKLM \verb|\software\microsoft\windows\currentversion\telephony[tapi32requestretrytimeout]|
  Queries value:
                                   HKLM\software\microsoft\tracing[enableconsoletracing]
                                   HKLM\software\microsoft\tracing\rasapi32[enablefiletracing]
  Oueries value:
  Queries value:
                                   HKLM\software\microsoft\tracing\rasapi32[filetracingmask]
                                   HKLM \setminus software \setminus microsoft \setminus tracing \setminus rasapi32 [enable consolet racing]
  Oueries value:
  Queries value:
                                   HKLM\software\microsoft\tracing\rasapi32[consoletracingmask]
  Queries value:
                                   HKLM\software\microsoft\tracing\rasapi32[maxfilesize]
  Queries value:
                                   HKLM\software\microsoft\tracing\rasapi32[filedirectory]
  Oueries value:
                                   HKLM\software\microsoft\windows\currentversion\explorer\user shell
folders[common appdata]
  Oueries value:
                                   HKLM\software\microsoft\windows
nt\currentversion\profilelist[profilesdirectory]
  Queries value:
                                   HKLM\software\microsoft\windows
nt\currentversion\profilelist[allusersprofile]
                                  HKLM\software\microsoft\windows
  Oueries value:
nt\currentversion\profilelist[defaultuserprofile]
  Queries value:
                                  HKCU\software\microsoft\windows
nt\currentversion\winlogon[parseautoexec]
  Queries value:
                                  HKCU\software\microsoft\windows\currentversion\internet
settings[migrateproxy]
                                  HKCU\software\microsoft\windows\currentversion\internet
  Queries value:
settings[proxyenable]
                                   HKCU\software\microsoft\windows\currentversion\internet
  Queries value:
settings[proxyserver]
  Queries value:
                                   HKCU\software\microsoft\windows\currentversion\internet
settings[proxyoverride]
                                   HKCU\software\microsoft\windows\currentversion\internet
  Queries value:
settings[autoconfigurl]
  Queries value:
                                   \label{lem:hkcu} \verb+KKCU \software \verb+ microsoft \verb+ windows \verb+ current version \verb+ internet+ \\
settings\connections[savedlegacvsettings]
  Queries value:
                                   \label{lem:hkcu} \mbox{\tt HKCU\software\mbox{\tt microsoft\windows\currentversion\linear}} \mbox{\tt internet}
settings\connections[defaultconnectionsettings]
                                  HKCU\software\microsoft\windows nt\currentversion\windows[scrollinset]
  Oueries value:
  Queries value:
                                   HKCU\software\microsoft\windows nt\currentversion\windows[dragdelay]
  Queries value:
                                   HKCU\software\microsoft\windows nt\currentversion\windows[dragmindist]
  Oueries value:
                                   HKCU\software\microsoft\windows nt\currentversion\windows[scrolldelav]
  Queries value:
                                  HKCU\software\microsoft\windows
nt\currentversion\windows[scrollinterval]
                                  HKLM\software\microsoft\rpc\securityservice[10]
  Oueries value:
  Oueries value:
HKLM\system\currentcontrolset\control\securityproviders[securityproviders]
                                  Oueries value:
```

Queries value:

HKLM\system\currentcontrolset\control\lsa\sspicache\msapsspc.dll[comment]

Queries value:

HKLM\system\currentcontrolset\control\lsa\sspicache\msapsspc.dll[capabilities]

Queries value: HKLM\system\currentcontrol\sa\sspicache\msapsspc.dll[rpcid]

Queries value:

Queries value: HKLM\system\currentcontrolset\control\lsa\sspicache\msapsspc.dll[type]

Oueries value:

HKLM\system\currentcontrolset\control\lsa\sspicache\msapsspc.dll[tokensize]

Queries value: HKLM\system\currentcontrol\sa\sspicache\digest.dll[name]
Queries value: HKLM\system\currentcontrol\set\control\lsa\sspicache\digest.dll[comment]

Queries value:

HKLM\system\currentcontrolset\control\lsa\sspicache\digest.dll[capabilities]

Queries value: HKLM\system\currentcontrol\sa\sspicache\digest.dll[rpcid]
Queries value: HKLM\system\currentcontrol\set\control\lsa\sspicache\digest.dll[version]
Queries value: HKLM\system\currentcontrol\set\control\lsa\sspicache\digest.dll[type]
Oueries value:

HKLM\system\currentcontrolset\control\lsa\sspicache\digest.dll[tokensize]

Queries value: HKLM\system\currentcontrolset\control\lsa\sspicache\msnsspc.dll[name]
Queries value: HKLM\system\currentcontrolset\control\lsa\sspicache\msnsspc.dll[comment]

Queries value:

HKLM\system\currentcontrolset\control\lsa\sspicache\msnsspc.dll[capabilities]

Queries value: HKLM\system\currentcontrolset\control\lsa\sspicache\msnsspc.dll[rpcid]
Queries value: HKLM\system\currentcontrolset\control\lsa\sspicache\msnsspc.dll[version]
Queries value: HKLM\system\currentcontrolset\control\lsa\sspicache\msnsspc.dll[type]
Oueries value:

HKLM\system\currentcontrol\sa\sspicache\msnsspc.dll[tokensize]
Value changes: HKLM\software\microsoft\cryptography\rng[seed]

Value changes: HKCU\software\microsoft\windows\currentversion\explorer\shell

folders[appdata]

Value changes: HKCU\software\microsoft\windows\currentversion\explorer\shell

folders[personal]

Value changes: HKCU\software\microsoft\windows\currentversion\explorer\shell

folders[cache]

Value changes: HKCU\software\microsoft\windows\currentversion\explorer\shell

folders[cookies]

 $\label{thm:local_value} Value\ changes: \\ HKCU\ software\ microsoft\ windows\ current version\ explorer\ shell$

folders[history]

Value changes: HKLM\software\microsoft\windows\currentversion\explorer\shell

folders[common appdata]

Value changes: HKCU\software\microsoft\windows\currentversion\internet

settings[proxyenable]

Value changes: HKCU\software\microsoft\windows\currentversion\internet

settings\connections[savedlegacysettings]