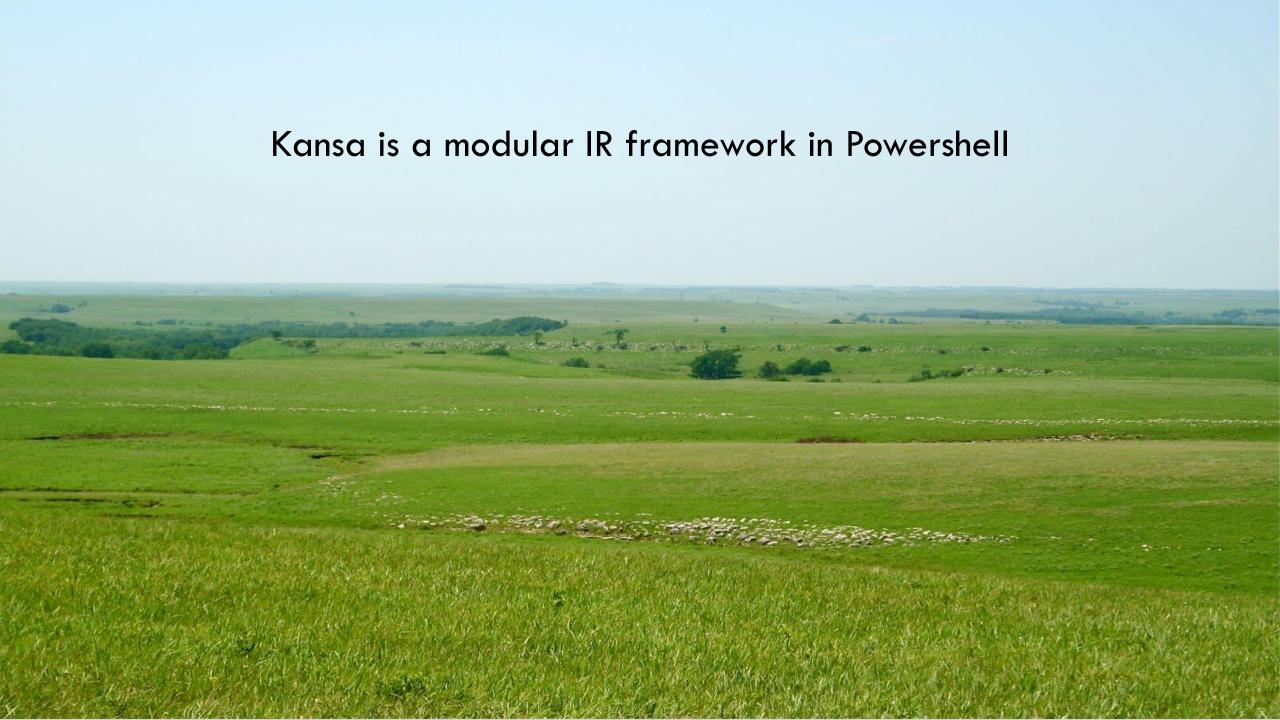
Σ

KANSA: INCIDENT RESPONSE & OPEN SOURCE IN THE BELLY OF THE BEST



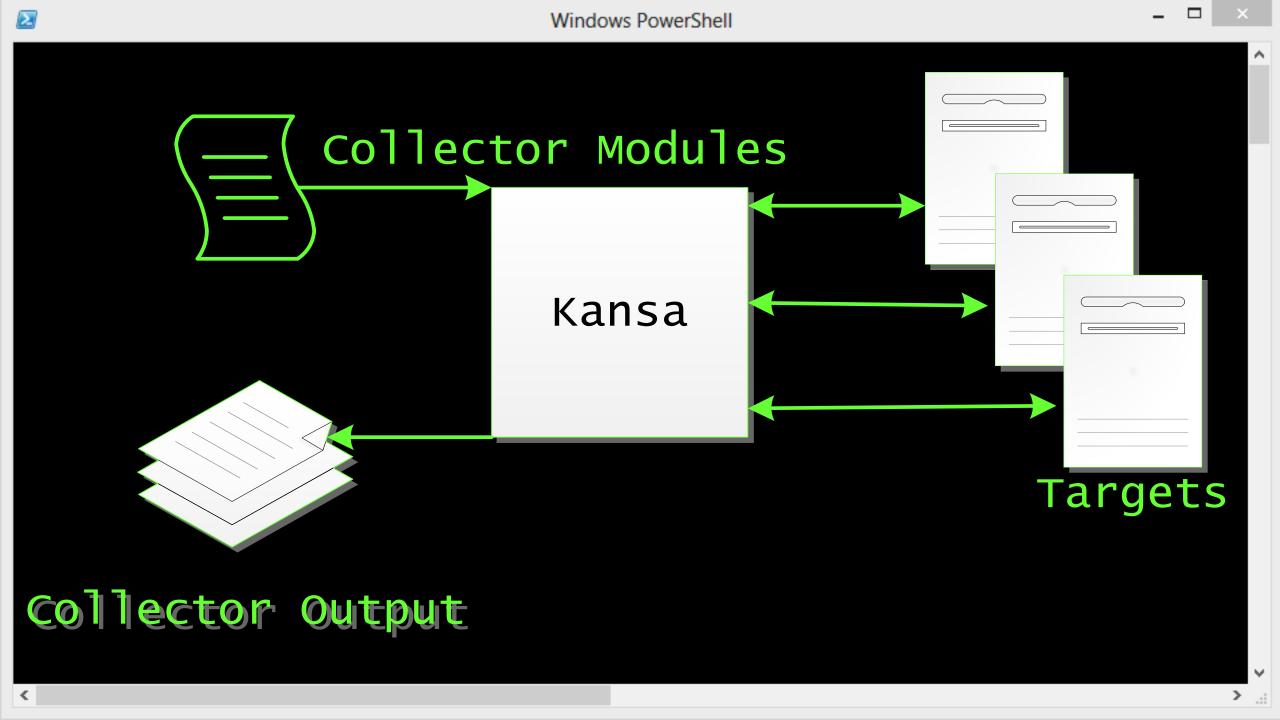


DESIGN PRINCIPLES / GOALS

MODULAR NOT MONOLITHIC

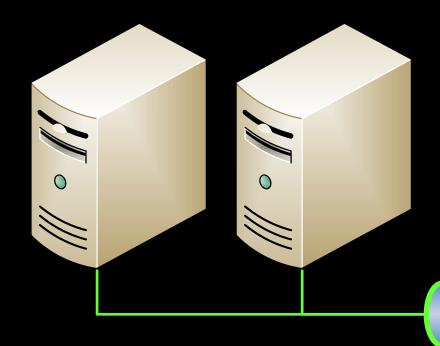
PRODUCE MACHINE ANALYZABLE OUTPUT

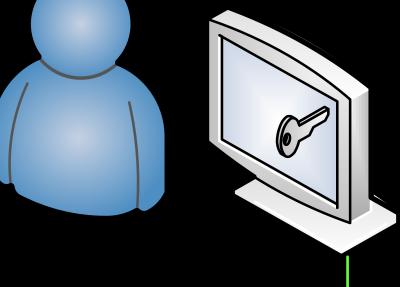
SECURE-ISH



Windows Remote Management and Powershell

- Native on Win7/2k8 and later
- Non-delegated Kerberos network logons
- Runs across hosts in parallel
- Read/Write enabled









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WHAT SUCKS?

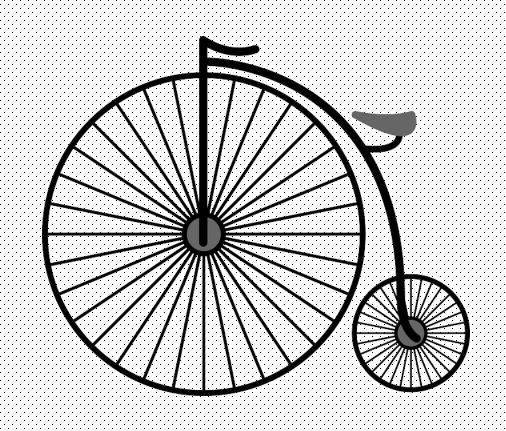
LONG TAILS

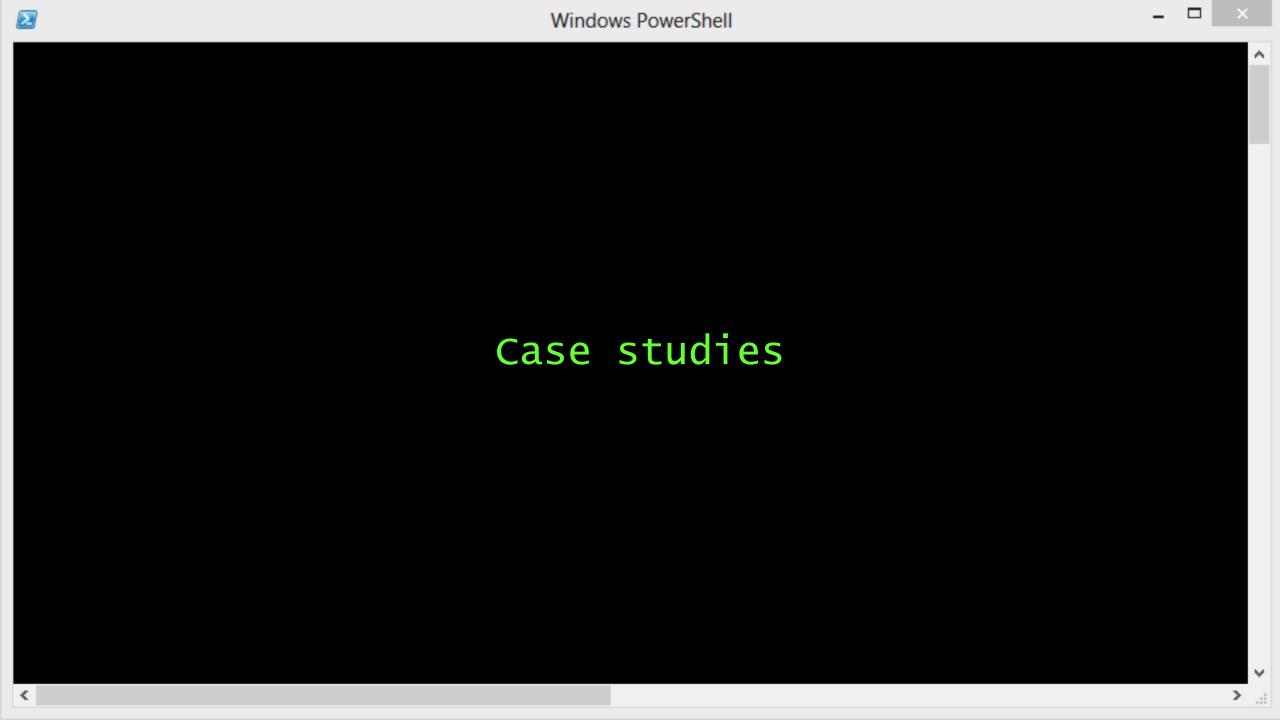
HUB AND SPOKE MODEL

DOUBLE-HOPS

API MAY BE A LIE

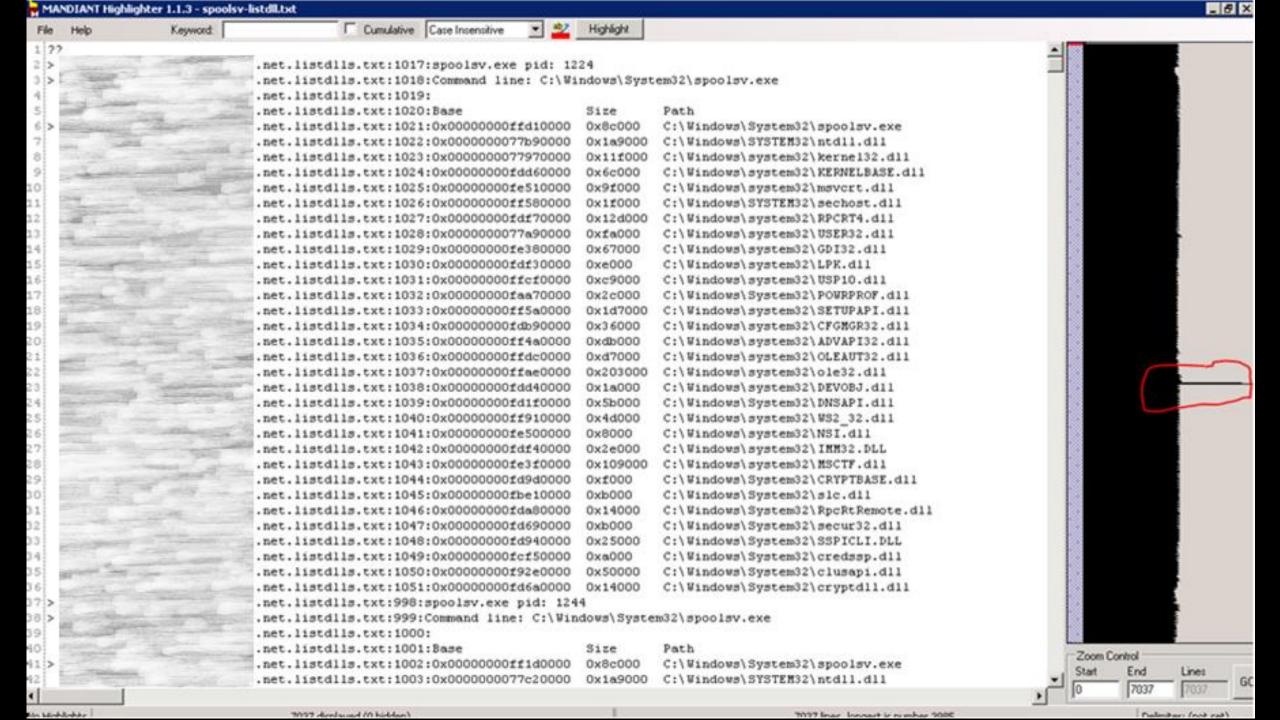
HUB AND SPOKE MODEL (SUBOPTIMAL)







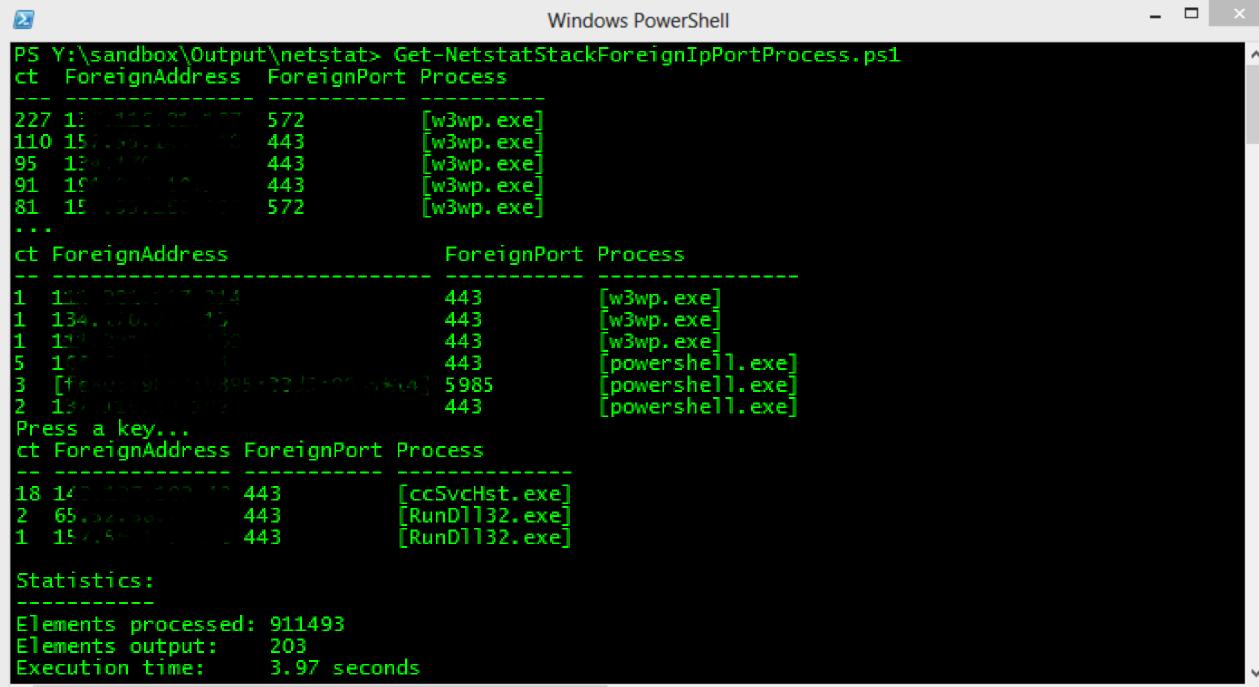




```
PS Y:\sandbox\wmievtconsmr> ls | sort length -Descending | select -First 30
```

Directory: Y:\sandbox\wmievtconsmr

Mode	LastWriteTime	Length Name
-a	5/12/2014 8:13 PM	40088 DFWBOSSWEE01_wmievtconsmr.xml
-a	2/26/2014 5:27 PM	10926 HNDOE01DGF03_wmievtconsmr.xml
-a	2/26/2014 5:27 PM	10926 HND0E01DGF05_wmievtconsmr.xml
-a	2/26/2014 5:27 PM	10926 HND0E01DGF04_wmievtconsmr.xml
-a	2/26/2014 5:28 PM	10926 HND0E01DGF08_wmievtconsmr.xml
-a	2/26/2014 4:50 PM	10926 PEKOBOOSMT03_wmievtconsmr.xml
-a	2/26/2014 5:27 PM	10926 HND0E01DGF06_wmievtconsmr.xml
-a	2/26/2014 5:27 PM	10926 HND0E01DGF07_wmievtconsmr.xml
-a	2/26/2014 5:27 PM	10926 HND0E01DGF02_wmievtconsmr.xml
-a	2/26/2014 5:23 PM	10926 HND0E00WHR07_wmievtconsmr.xml
-a	2/26/2014 5:22 PM	10926 HNDOE00WHR06_wmievtconsmr.xml
-a	2/26/2014 5:22 PM	10926 HNDOE00WHR05_wmievtconsmr.xml
-a	2/26/2014 5:22 PM	10926 HNDOE00WHR08_wmievtconsmr.xml
-a	2/26/2014 5:27 PM	10926 HND0E01DGF01_wmievtconsmr.xml
-a	2/26/2014 5:27 PM	10926 HND0E00WHR10_wmievtconsmr.xml
-a	2/26/2014 5:28 PM	10926 HND0E00WHR09_wmievtconsmr.xml
-a	2/26/2014 4:37 PM	10926 PEKOBOORATO3_wmievtconsmr.xml
-a	2/26/2014 5:28 PM	10926 HND0E02FEZ06_wmievtconsmr.xml
-a	2/26/2014 5:28 PM	10926 HND0E02FEZ05_wmievtconsmr.xml
-a	2/26/2014 5:28 PM	10926 HND0E02FEZ04_wmievtconsmr.xml
-a	2/26/2014 5:28 PM	10926 HND0E02FEZ07_wmievtconsmr.xml
-a	2/26/2014 4:44 PM	10926 PEKOBOOPHDO7_wmievtconsmr.xml
-a	2/26/2014 4:42 PM	10926 PEKOBO000S01 wmievtconsmr.xml



<

```
Windows PowerShell

$ 1pquery = @"
```

```
SELECT DISTINCT ForeignAddress, ConPId,
    PSComputerName
FROM
    *netstat.tsv
WHERE
    Process = '[powershell.exe]' and
    ForeignAddress in ('16*.***.***';
        113* *** *** *** )
```

logparser -i:tsv -dtlines:0 -rtp:40 -fixedsep:on
\$lpquery

```
16*.**.*** 7596 kc1cofscan101
```

```
13*.***.** 14604 de1cofwww316
```

```
13*.***.** 12208 ac2coffeui101
```

Statistics:

Elements processed: 911493

Elements output: 3

Execution time: 1.54 seconds

```
PS> $data = Import-Clixml .\ac2coffeui101-
ProcsWMI.xml
```

PS> \$data | ? { \$_.ProcessId -eq "12208" } | Select-Object CreationDate, ParentProcessId, CommandLine

CreationDate : 20140414182809.398530+000

ParentProcessId: 1332

CommandLine

C:\Windows\system32\windowspowershell\v1.0\powershell .exe -ExecutionPolicy bypass -WindowStyle hidden -NonInteractive -EncodedCommand JABİAEGANABZAEKAQQBBAEEAQQBBAEEAQQBFAEEATWAYADKAQGAYA

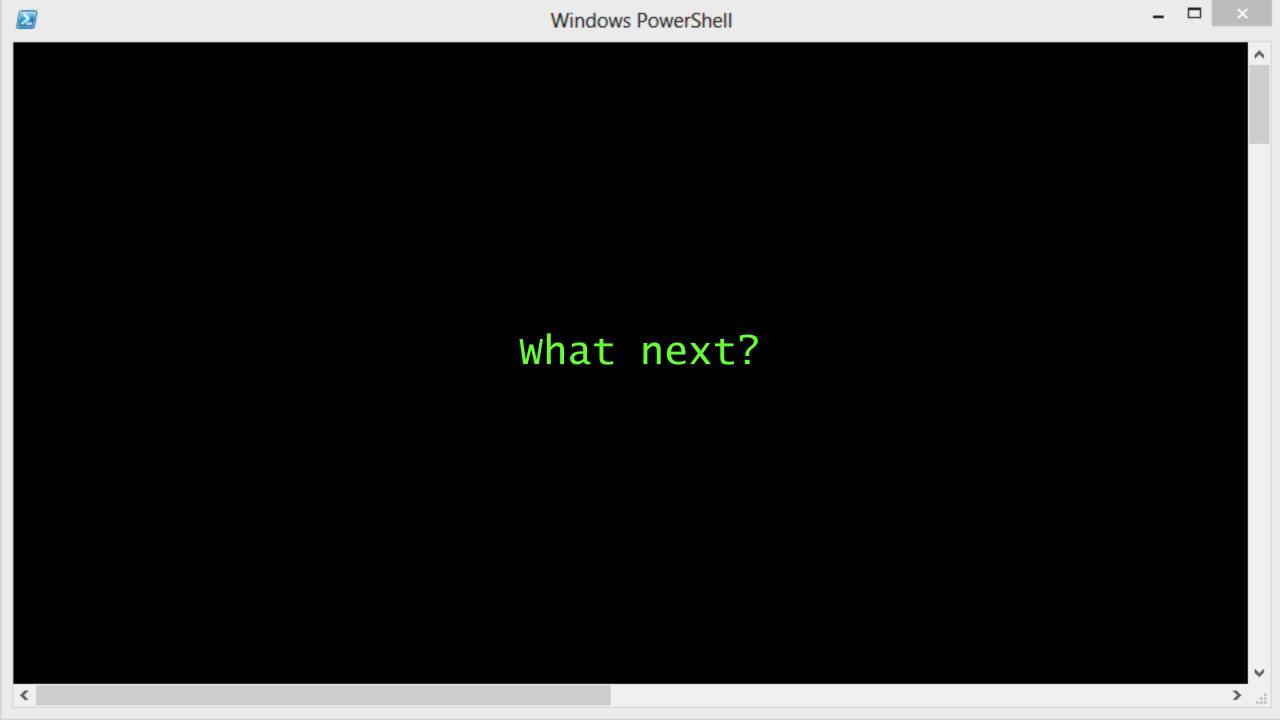
EEAYWBTAFOAWQBSAEOAaQA5AHQAeQBuAHQALw...

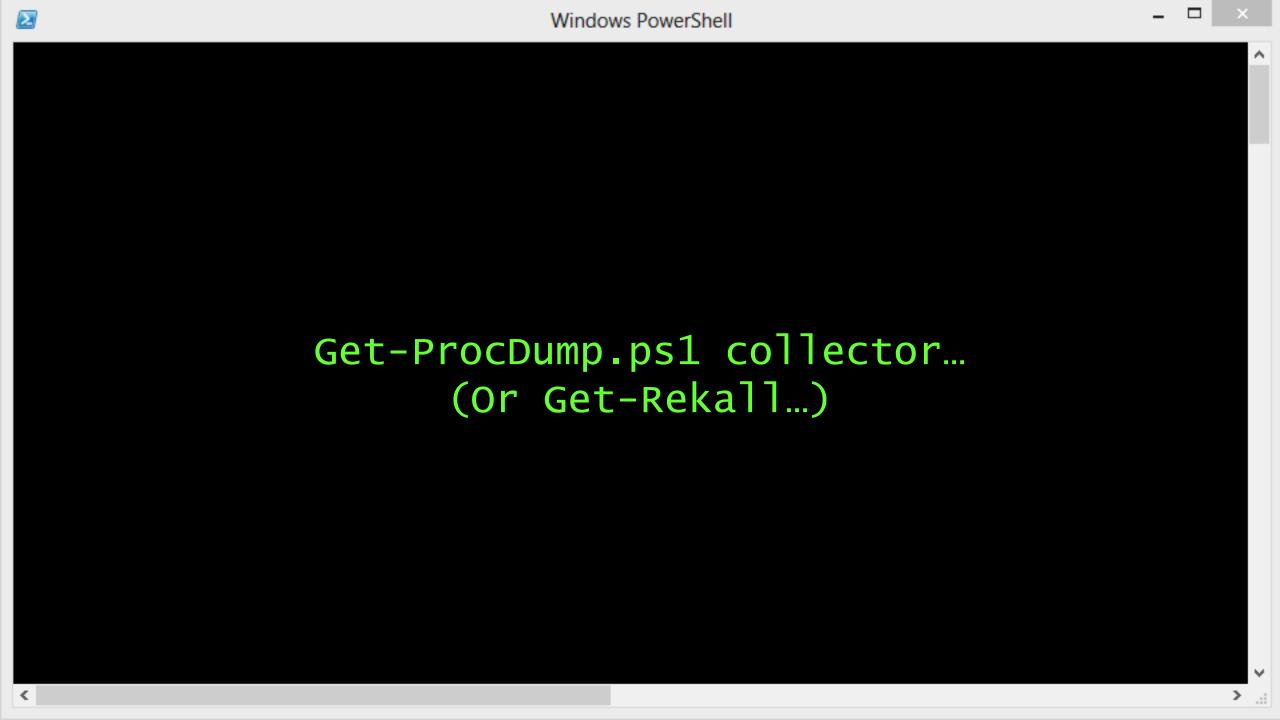
```
PS> $data | ? { $_.ProcessId -eq "1332" } | Select-Object CreationDate, ParentProcessId, CommandLine | fl *
```

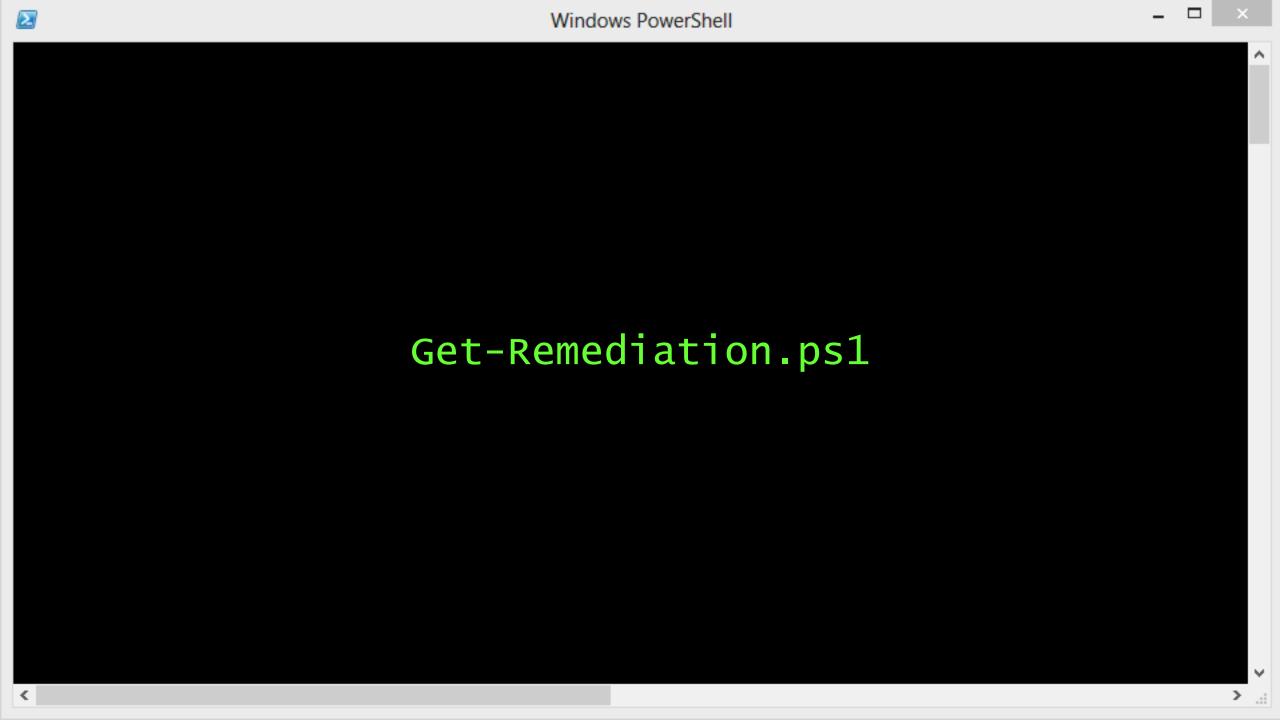
<u>CreationDate</u>: 20140409052656.334861+000

ParentProcessId: 624

CommandLine : C:\Windows\System32\spoolsv.exe







RED TEAM FILE SERVER VIEWS LOGGING HELP

257 Invoke-TokenManipulation

Server Listeners	Zombies X	Englishmen (Legalishe					
	-4	Microsoft Windows NT 6.2.9200.0	64	4/18/2014 1:10:08 AM		2.0	-
	4	Microsoft Windows NT 6.2.9200.0	64	4/18/2014 1:10:05 AM		2.0	-
	27.570-4 4	Microsoft Windows NT 6.1.7601 Service Pack 1	64	4/23/2014 5:31:31 PM		1.0	
	10 360	Microsoft Windows NT 6.2.9200.0	64	4/23/2014 5:27:41 PM		2.0	_
	720	Microsoft Windows NT 6.2.9200.0	64	4/23/2014 9:27:32 PM		2.0	
	600	Microsoft Windows NT 6.2.9200.0	64	4/23/2014 5:23:41 PM		2.0	_
	16 4	Microsoft Windows NT 6.2.9200.0	64	4/18/2014 1:10:02 AM		2.0	-
	4	Microsoft Windows NT 6.2.9200.0	64	4/18/2014 1:08:39 AM		2.0	
	4	Microsoft Windows NT 6.2.9200.0	64	4/18/2014 1:08:31 AM		2.0	
	4	Microsoft Windows NT 6.2.9200.0	64	4/18/2014 12:54:03 AM		2.0	
	4	Microsoft Windows NT 6.2.9200.0	64	4/18/2014 1:07:33 AM		2.0	
	360	Microsoft Windows NT 6.2.9200.0	64	4/18/2014 4:07:35 PM	And policional divisystem	2.0	
	4	Microsoft Windows NT 6.2.9200.0	64	4/22/2014 6:44:59 PM		2.0	
	4	Microsoft Windows NT 6.2.9200.0	64	4/22/2014 7:42:19 PM		2.0	
	60	Microsoft Windows NT 6.2.9200.0	64	4/22/2014 8:20:07 PM		2.0	
	4	Microsoft Windows NT 6.2.9200.0	64	4/22/2014 8:02:50 PM		2.0	

#	Command	Description
219	fingerprint	
220	Invoke-WmiPivot	Executing PowerShellFile Command. Folder: Command: Invoke-WmiPivot Aruments: System.Collections.Generic.Dictionary'2[System.String,System.Object]
226	callback: 600	Setting callback delay to: 600 seconds
227	fingerprint	
228	callback: 4	Setting callback delay to: 4 seconds
229	Get-DomainUsers	Executing PowerShellFile Command. Folder: Command: Get-DomainUsers Aruments: System.Collections.Generic.Dictionary'2[System.String,System.Object]
232	fingerprint	
234	Invoke-WmiPivot	Executing PowerShellFile Command. Folder: Command: Invoke-WmiPivot Aruments: System.Collections.Generic.Dictionary'2[System.String,System.Object]
242	Invoke-Mimikatz	Executing PowerShellFile Command. Folder: Command: Invoke-Mimikatz Aruments: System.Collections.Generic.Dictionary`2[System.String,System.Object]
244	Invoke-Mimikatz	Executing PowerShellFile Command. Folder: Command: Invoke-Mimikatz Aruments: System.Collections.Generic.Dictionary`2[System.String,System.Object]
245	callback: 600	Setting callback delay to: 600 seconds
246	fingerprint	
255	Invoke-PowerShellPivot	Executing PowerShellFile Command. Folder: Command: Invoke-PowerShellPivot Aruments: System.Collections.Generic.Dictionary`2[System.String,System.Object]

Nickname:

Callback Delay: 600 seconds

Callback Addresses:

143 http://v

Add

Add

Forwarders:

Of Missed Connections Red: 3 Attempts

Yellow: 2 Attempts

Connection Status:

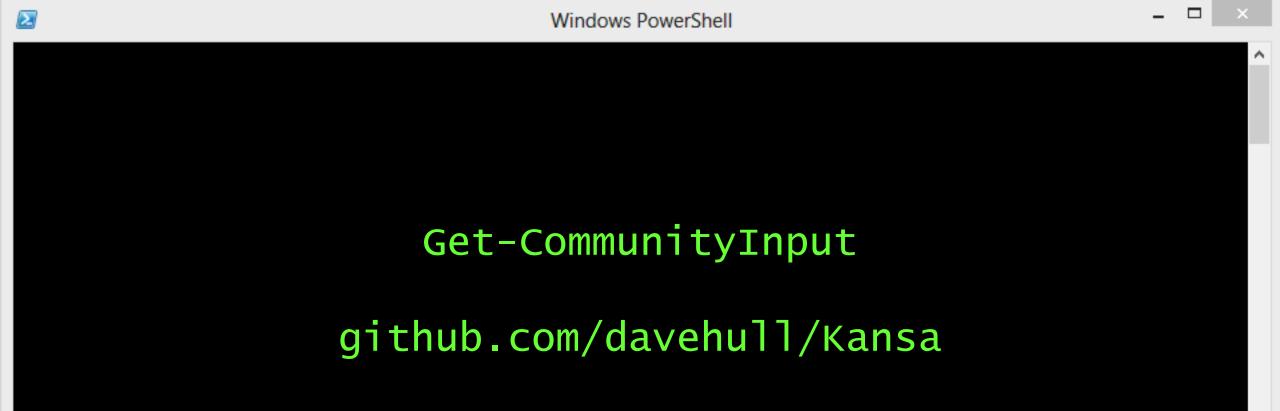














Get-AudienceQuestions

Thank you!

Email : davehull@trustedsignal.com

Twitter: @davehull

```
PS Y:\sandbox> .\kansa.ps1 -TargetList .\hostlist -Pushbin -Verbose
VERBOSE: Found Modules\Modules.conf.
VERBOSE: Running modules: Get-PrefetchListing Get-PrefetchFiles Get-Netstat Get-DNSCache Get-Arp Get-Prox Get-Tasklistv Get-
Tasklistm Get-Handle Get-SvcAll Get-SvcFail Get-SvcTrigs Get-WMIEvtFilter Get-WMIFltConBind Get-WMIEvtConsumer Get-Autorunsc
Get-ProcsWMI Get-ProcDump Get-NetRoutes Get-NetIPInterfaces Get-LocalAdmins Get-PSProfiles
VERBOSE: $Targets are Wilbur Orville Selfridge.
VERBOSE: Get-Handle has dependency on Handle.exe.
VERBOSE: Attempting to copy Handle.exe to targets...
VERBOSE: Get-Autorunsc has dependency on Autorunsc.exe.
VERBOSE: Attempting to copy Autorunsc.exe to targets...
/ERBOSE: Waiting for Get-PrefetchListing to complete.
                       PSJobTypeName State
Ιd
       Name
                                                                      Location
                                                      HasMoreData
                                                                                            Command
       ____
       Job2
                       RemoteJob
                                       Completed
                                                                      Wilbur, Orville, ... # OUTPUT tsv...
                                                     True
VERBOSE: Waiting for Get-PrefetchFiles to complete.
       Job6
                       RemoteJob
                                       Completed
                                                                      Wilbur, Orville, ... # OUTPUT zip...
                                                      True
VERBOSE: Waiting for Get-Netstat to complete.
       Job10
                                       Completed
                                                                      Wilbur, Orville, ... # OUTPUT tsv...
                       RemoteJob
                                                      True
VERBOSE: Waiting for Get-DNSCache to complete.
       Job14
                       RemoteJob
                                       Completed
                                                                      Wilbur, Orville, ... # OUTPUT tsv...
14
                                                     True
VERBOSE: Waiting for Get-Arp to complete.
       Job18
                                       Completed
                                                                      Wilbur, Orville, ... # OUTPUT tsv...
18
                       RemoteJob
                                                      True
VERBOSE: Waiting for Get-Prox to complete.
       Job22
                       RemoteJob
                                       Completed
                                                                      Wilbur, Orville, ... # OUTPUT xml...
22
                                                      True
VERBOSE: Waiting for Get-Tasklistv to complete.
       Job26
                       RemoteJob
                                       Completed
                                                                      Wilbur,Orville,... # OUTPUT tsv...
26
                                                      True
VERBOSE: Waiting for Get-Tasklistm to complete.
       Job30
                                       Completed
                       RemoteJob
                                                      True
                                                                      Wilbur, Orville, ... # OUTPUT tsv...
VERBOSE: Waiting for Get-Handle to complete.
       Job34
                       RemoteJob
                                       Completed
                                                                      Wilbur, Orville, ... # OUTPUT tsv...
34
                                                      True
VERBOSE: Waiting for Get-SvcAll to complete.
       Job38
                       RemoteJob
                                       Completed
                                                                      Wilbur, Orville, ... # OUTPUT tsv...
38
                                                      True
VERBOSE: Waiting for Get-SvcFail to complete.
```

```
PS Y:\sandbox> ls | select lastwritetime, name | fl - Autosize

LastWriteTime Name
```

```
5/15/2014
          7:27 AM
                      Analysis
5/20/2014
                      Modules
           12:05 PM
5/15/2014
           8:33 AM
                      Output_201405150833
5/20/2014
           12:19 PM
                      Output_201405201209
5/20/2014
                      Output_201405201230
           12:39 PM
5/19/2014
           5:53 PM
                      .gitignore
5/20/2014
           12:31 PM
                      hostlist
5/19/2014
           5:53 PM
                      kansa.ps1
5/19/2014
            5:53 PM
                      LICENSE
```

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```
PS Y:\sandbox> ls .\Output_201405201230
                                          select
lastwritetime, name | fl -Autosize
```

```
LastWriteTime
                      Name
5/20/2014
           12:35 PM
                      Arp
5/20/2014
           12:36 PM
                      Autorunsc
5/20/2014
           12:35 PM
                      DNSCache
5/20/2014
                      Handle
           12:35 PM
5/20/2014
                      LocalAdmins
           12:39 PM
5/20/2014
           12:39 PM
                      NetIPInterfaces
5/20/2014
           12:39 PM
                      NetRoutes
5/20/2014
           12:35 PM
                      Netstat
5/20/2014
           12:30 PM
                      PrefetchFiles
```

LastWriteTime

```
_ 🗆 ×
```

```
PS Y:\sandbox> ls .\Output_201405201230\Netstat | select lastwritetime, name | fl -Autosize
```

```
5/20/2014 12:35 PM Wilbur-Netstat.tsv
5/20/2014 12:35 PM Orville-Netstat.tsv
5/20/2014 12:35 PM Selfridge-Netstat.tsv
```

Name

OUTPUT tsv

Returns Get-NetRoute data

Get-NetRoute

Name

Get-ASEPImagePathLaunchStringMD5Stack

Get-ASEPImagePathLaunchStringMD5UnsignedStack

Get-ASEPImagePathLaunchStringPublisherStack

Get-ASEPImagePathLaunchStringStack

Get-ASEPImagePathLaunchStringUnsignedStack

Get-SvcAllRunningAuto

Get-SvcAllStack

Get-SvcFailAllStack

Get-SvcFailCmdLineStack ...

Unsigned ASEP Stack

Unsigned ASEPS on domain controllers: cnt Image Path

c:\windows\system32\cpqnimgt\cpqnimgt.exe 10

c:\hp\hpsmh\data\cgi-bin\vcagent\vcagent.exe 10

10 c:\windows\system32\cpqmgmt\cqmgstor\cqmgstor.exe

c:\program files\hpwbem\storage\service\hpwmistor.exe 202274cb14edaee27862c6ebce3128d8 10

c:\hp\hpsmh\bin\smhstart.exe 10

10 c:\msnipak\win2012sp0\asr\configureasr.vbs

c:\program files\hp\cissesrv\cissesrv.exe 10

MD5

78af816051e512844aa98f23fa9e9ab5

54879ccbd9bd262f20b58f79cf539b3f

60668a25cfa2f1882bee8cf2ecc1b897

5c74c7c4dc9f78255cae78cd9bf7da63

197a28adb0b404fed01e9b67568a8b5e

bf68a382c43a5721eef03ff45faece4a

```
_ _ ×
```

```
PS Y:\sandbox> ls .\Analysis\meta\*.ps1 | select name
Name
----
Get-AllFileLengths.ps1
Get-FileLengths.ps1
Length Name
```

```
40088 DFWBOSSWEE01_wmievtconsmr.xml
10926 HND0E01DGF03_wmievtconsmr.xml
10926 HND0E01DGF05_wmievtconsmr.xml
10926 HND0E01DGF04_wmievtconsmr.xml
10926 HND0E01DGF08_wmievtconsmr.xml
10926 PEK0B00SMT03_wmievtconsmr.xml
10926 HND0E01DGF06_wmievtconsmr.xml
```

```
PS Y:\sandbox> ls .\Analysis\network\*.ps1 | select name
```

Name

Get-ARPStack.ps1

Get-DNSCacheStack.ps1

Get-NetstatStack.ps1

Get-NetstatStackByProtoForeignIpStateComponentProcess.ps1

Get-NetstatStackForeignIpPortProcess.ps1

Get-NetstatStackForeignIpProcess.ps1

ct	ForeignAddress	ForeignPort	Process
1	1 111 201 117 014	443	[w3wp.exe]
1	134 20. 2	443	[w3wp.exe]
1	1 11. 221	443	[w3wp.exe]
5	109 7 3 3 3 3 3 3	443	[powershell.exe]
3	[fexe::98-7:6895-23d5-9935964]	5 9 8 5	[powershell.exe]
2	132.046.63.302	443	[powershell.exe]

Name

Get-HandleProcessOwnerStack.ps1

Get-PrefetchListingLastWriteTime.ps1

Get-PrefetchListingStack.ps1

Get-ProcsWMICmdlineStack.ps1

Get-ProxSystemStartTime.ps1