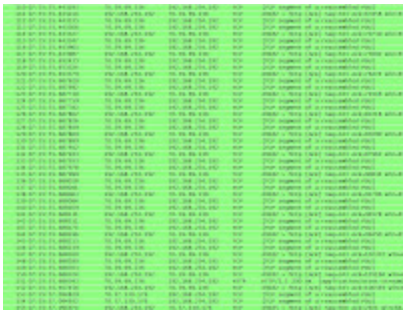
DarkMegi rootkit - sample (distributed via Blackhole)

contagiodump.blogspot.com/2012/04/this-is-darkmegie-rootkit-sample-kindly.html

114	07:35:55.443327	192.168.254.192	70.39.69.236	TCP	49182 > http [ACK] Seq=343 Ack=70730 Win=6
115	07:35:55.443347	70.39.69.236	192.168.254.192	TCP	[TCP segment of a reassembled PDU]
116	07:35:55.443965	70.39.69.236	192.168.254.192	TCP	[TCP segment of a reassembled PDU]
117	07:35:55.443987	192.168.254.192	70.39.69.236	TCP	49182 > http [ACK] Seq=343 Ack=73602 Win=6
118	07:35:55.652435	70.39.69.236	192.168.254.192	TCP	[TCP segment of a reassembled PDU]
119	07:35:55.653324	70.39.69.236	192.168.254.192	TCP	[TCP segment of a reassembled PDU]
120	07:35:55.653379	192.168.254.192	70.39.69.236	TCP	49182 > http [ACK] Seq=343 Ack=76474 Win=6
121	07:35:55.687620	70.39.69.236	192.168.254.192	TCP	[TCP segment of a reassembled PDU]
122	07:35:55.687692	70.39.69.236	192.168.254.192	TCP	[TCP segment of a reassembled PDU]
123	07:35:55.687730	192.168.254.192	70.39.69.236	TCP	49182 > http [ACK] Seq=343 Ack=79346 Win=6
124	07:35:55.687759	70.39.69.236	192.168.254.192	TCP	[TCP segment of a reassembled PDU]
125	07:35:55.687782	70.39.69.236	192.168.254.192	TCP	[TCP segment of a reassembled PDU]
126	07:35:55.687802	192.168.254.192	70.39.69.236	TCP	49182 > http [ACK] Seq=343 Ack=82218 Win=6
127	07:35:55.687826	70.39.69.236	192.168.254.192	TCP	[TCP segment of a reassembled PDU]
128	07:35:55.687849	70.39.69.236	192.168.254.192	TCP	[TCP segment of a reassembled PDU]
129	07:35:55.687869	192.168.254.192	70.39.69.236	TCP	49182 > http [ACK] Seq=343 Ack=85090 Win=6
130	07:35:55.687889	70.39.69.236	192.168.254.192	TCP	[TCP segment of a reassembled PDU]
131	07:35:55.687912	70.39.69.236	192.168.254.192	TCP	[TCP segment of a reassembled PDU]
132	07:35:55.687933	192.168.254.192	70.39.69.236	TCP	49182 > http [ACK] Seq=343 Ack=87962 Win=6
133	07:35:55.687953	70.39.69.236	192.168.254.192	TCP	[TCP segment of a reassembled PDU]
134	07:35:55.687978	70.39.69.236	192.168.254.192	TCP	[TCP segment of a reassembled PDU]
135	07:35:55.687999	192.168.254.192	70.39.69.236	TCP	49182 > http [ACK] Seq=343 Ack=90834 Win=6
136	07:35:55.688018	70.39.69.236	192.168.254.192	TCP	[TCP segment of a reassembled PDU]
137	07:35:55.688041	70.39.69.236	192.168.254.192	TCP	[TCP segment of a reassembled PDU]
138	07:35:55.688063	192.168.254.192	70.39.69.236	TCP	49182 > http [ACK] Seq=343 Ack=93706 Win=6
139	07:35:55.688084	70.39.69.236	192.168.254.192	TCP	[TCP segment of a reassembled PDU]
140	07:35:55.688109	70.39.69.236	192.168.254.192	TCP	[TCP segment of a reassembled PDU]
141	07:35:55.688131	192.168.254.192	70.39.69.236	TCP	49182 > http [ACK] Seq=343 Ack=96578 Win=6
142	07:35:55.688151	70.39.69.236	192.168.254.192	TCP	[TCP segment of a reassembled PDU]
143	07:35:55.688174	70.39.69.236	192.168.254.192	TCP	[TCP segment of a reassembled PDU]
144	07:35:55.688196	192.168.254.192	70.39.69.236	TCP	49182 > http [ACK] Seq=343 Ack=99450 Win=6
145	07:35:55.688215	70.39.69.236	192.168.254.192	TCP	[TCP segment of a reassembled PDU]

Update April 20, 2012 Kimberly wrote an excellent analysis of this sample. Please go to Stopmalvertising to read



This is a "DarkMegie" rootkit sample, kindly donated by Hendrik Adrian. Just like described in the McAfee article "Darkmegi: This is Not the Rootkit You're Looking For" by Craig Schmugar, it is anything but quiet and stealthy. In fact, it makes so many system changes that it is hard to cover it all in a quick post.

Indeed, it drops the rootkit components in drivers with the incredible padding to 25MB and generates a lot of traffic. Unfortunately, I did not have time yet to sort out the mess and purpose of all files that this malware creates so I am just posting it here along with sandbox results for you to analyze. If you write a detailed analysis, please share, I will link to.

File information

Size: 77312
MD5: 6C8F9658A390C24A9F4551DC15063927

Download

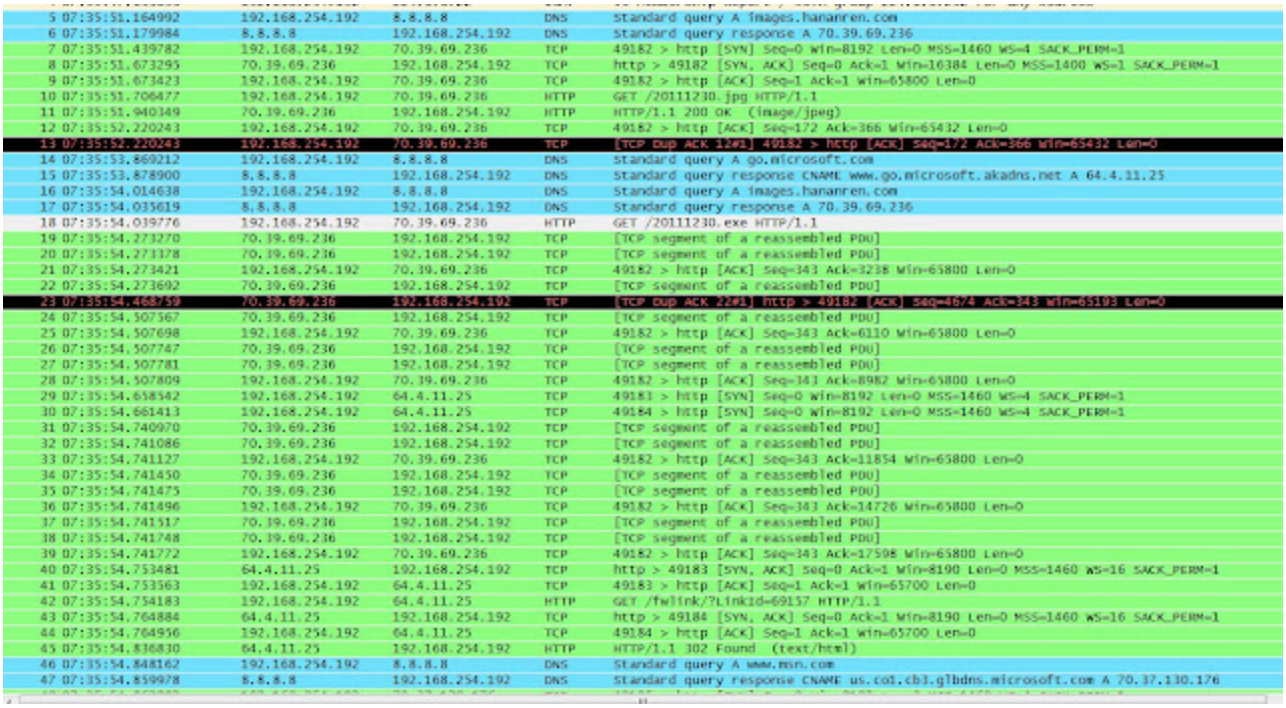
Download (email me if you need the password scheme)
Download the modified / created files and analysis data
Download pcap

Malware system changes

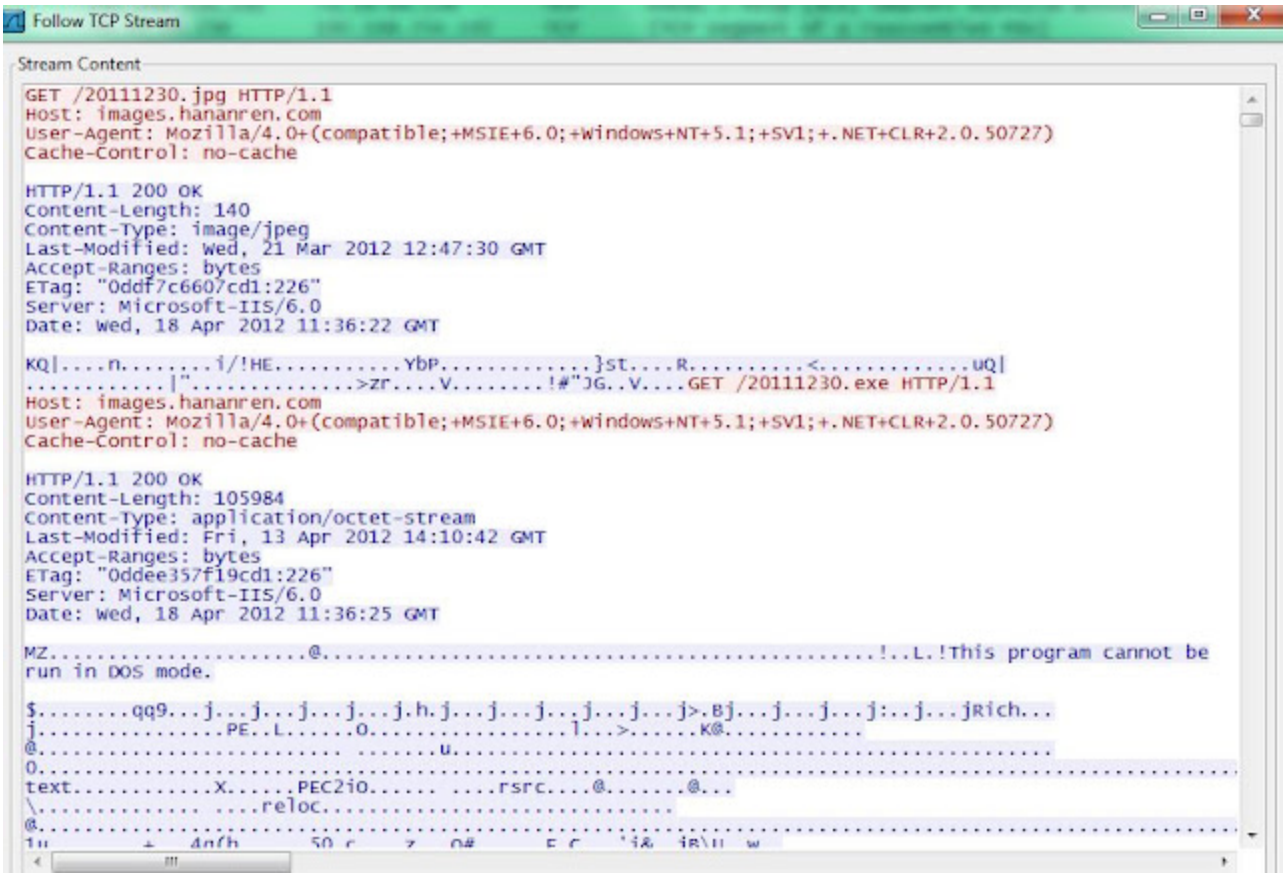
Sample analysis -by Stopmalvertising

C:\Windows\System32\drivers\com32.sys 9728
4399b8a60977814197feae67c02a7ac2
C:\Windows\System32\drivers\RCX50E3.tmp 26224256
9f32c51764f579512810b7ab3de1a91a
C:\Windows\System32\drivers\com32.sys 26224256
dd313b92f60bb66d3d613bc49c1ef35e
C:\Windows\System32\com32.dl 45056
25cfb72df8a30cbb7e6ee852bc31c50f
C:\Windows\System32\RCX5B11.tmp 31506432
2f00e0927c07bc44d9b79ccbe567f398
C:\Windows\System32\del043.bat 86
1a1e7855edc0afa6624080d60da8bf44

You can download the full detailed sandbox report here
Traffic
It is as active as a click fraud or DDoS bot but does not fit these categories.
I am not quite sure what it is doing, please look and us know :)



5	07:35:51.164992	192.168.254.192	8.8.8.8	DNS	Standard query A images.hananren.com
6	07:35:51.179984	8.8.8.8	192.168.254.192	DNS	Standard query response A 70.39.69.236
7	07:35:51.439782	192.168.254.192	70.39.69.236	TCP	49182 > http [SYN] Seq=0 Win=8192 Len=0 MSS=1460 WS=4 SACK_PERM=1
8	07:35:51.673295	70.39.69.236	192.168.254.192	TCP	http > 49182 [SYN, ACK] Seq=0 Ack=1 Win=16384 Len=0 MSS=1400 WS=1 SACK_PERM=1
9	07:35:51.673423	192.168.254.192	70.39.69.236	TCP	49182 > http [ACK] Seq=1 Ack=1 Win=65800 Len=0
10	07:35:51.706477	192.168.254.192	70.39.69.236	HTTP	GET /20111230.jpg HTTP/1.1
11	07:35:51.940349	70.39.69.236	192.168.254.192	HTTP	HTTP/1.1 200 OK (image/jpeg)
12	07:35:52.220243	192.168.254.192	70.39.69.236	TCP	49182 > http [ACK] Seq=172 Ack=366 Win=65432 Len=0
13	07:35:52.220243	192.168.254.192	70.39.69.236	TCP	[TCP Dup ACK 12#1] 49182 > http [ACK] Seq=172 Ack=366 Win=65432 Len=0
14	07:35:53.869212	192.168.254.192	8.8.8.8	DNS	Standard query A go.microsoft.com
15	07:35:53.878900	8.8.8.8	192.168.254.192	DNS	Standard query response CNAME www.go.microsoft.akadns.net A 64.4.11.25
16	07:35:54.014638	192.168.254.192	8.8.8.8	DNS	Standard query A images.hananren.com
17	07:35:54.035619	8.8.8.8	192.168.254.192	DNS	Standard query response A 70.39.69.236
18	07:35:54.039776	192.168.254.192	70.39.69.236	HTTP	GET /20111230.exe HTTP/1.1
19	07:35:54.273270	70.39.69.236	192.168.254.192	TCP	[TCP segment of a reassembled PDU]
20	07:35:54.273378	70.39.69.236	192.168.254.192	TCP	[TCP segment of a reassembled PDU]
21	07:35:54.273421	192.168.254.192	70.39.69.236	TCP	49182 > http [ACK] Seq=343 Ack=3238 Win=65800 Len=0
22	07:35:54.273692	70.39.69.236	192.168.254.192	TCP	[TCP segment of a reassembled PDU]
23	07:35:54.468759	70.39.69.236	192.168.254.192	TCP	[TCP Dup ACK 22#1] http > 49182 [ACK] Seq=4674 Ack=343 Win=65193 Len=0
24	07:35:54.507567	70.39.69.236	192.168.254.192	TCP	[TCP segment of a reassembled PDU]
25	07:35:54.507698	192.168.254.192	70.39.69.236	TCP	49182 > http [ACK] Seq=343 Ack=6110 Win=65800 Len=0
26	07:35:54.507747	70.39.69.236	192.168.254.192	TCP	[TCP segment of a reassembled PDU]
27	07:35:54.507781	70.39.69.236	192.168.254.192	TCP	[TCP segment of a reassembled PDU]
28	07:35:54.507809	192.168.254.192	70.39.69.236	TCP	49182 > http [ACK] Seq=343 Ack=8982 Win=65800 Len=0
29	07:35:54.658542	192.168.254.192	64.4.11.25	TCP	49183 > http [SYN] Seq=0 Win=8192 Len=0 MSS=1460 WS=4 SACK_PERM=1
30	07:35:54.661413	192.168.254.192	64.4.11.25	TCP	49184 > http [SYN] Seq=0 Win=8192 Len=0 MSS=1460 WS=4 SACK_PERM=1
31	07:35:54.740970	70.39.69.236	192.168.254.192	TCP	[TCP segment of a reassembled PDU]
32	07:35:54.741086	70.39.69.236	192.168.254.192	TCP	[TCP segment of a reassembled PDU]
33	07:35:54.741127	192.168.254.192	70.39.69.236	TCP	49182 > http [ACK] Seq=343 Ack=11854 Win=65800 Len=0
34	07:35:54.741450	70.39.69.236	192.168.254.192	TCP	[TCP segment of a reassembled PDU]
35	07:35:54.741475	70.39.69.236	192.168.254.192	TCP	[TCP segment of a reassembled PDU]
36	07:35:54.741496	192.168.254.192	70.39.69.236	TCP	49182 > http [ACK] Seq=343 Ack=14726 Win=65800 Len=0
37	07:35:54.741517	70.39.69.236	192.168.254.192	TCP	[TCP segment of a reassembled PDU]
38	07:35:54.741748	70.39.69.236	192.168.254.192	TCP	[TCP segment of a reassembled PDU]
39	07:35:54.741772	192.168.254.192	70.39.69.236	TCP	49182 > http [ACK] Seq=343 Ack=17598 Win=65800 Len=0
40	07:35:54.753481	64.4.11.25	192.168.254.192	TCP	http > 49183 [SYN, ACK] Seq=0 Ack=1 Win=8190 Len=0 MSS=1460 WS=16 SACK_PERM=1
41	07:35:54.753563	192.168.254.192	64.4.11.25	TCP	49183 > http [ACK] Seq=1 Ack=1 Win=65700 Len=0
42	07:35:54.754183	192.168.254.192	64.4.11.25	HTTP	GET /fwlink/?LinkId=69157 HTTP/1.1
43	07:35:54.764884	64.4.11.25	192.168.254.192	TCP	http > 49184 [SYN, ACK] Seq=0 Ack=1 Win=8190 Len=0 MSS=1460 WS=16 SACK_PERM=1
44	07:35:54.764956	192.168.254.192	64.4.11.25	TCP	49184 > http [ACK] Seq=1 Ack=1 Win=65700 Len=0
45	07:35:54.836830	64.4.11.25	192.168.254.192	HTTP	HTTP/1.1 302 Found (text/html)
46	07:35:54.848162	192.168.254.192	8.8.8.8	DNS	Standard query A www.msn.com
47	07:35:54.859978	8.8.8.8	192.168.254.192	DNS	Standard query response CNAME us.co1.cb1.glbdns.microsoft.com A 70.37.130.176



Some of the traffic

[process 8] 65.55.253.27 192.168.254.192 GET /c.gif?evt=br&rid=4571d83250544049bfc2ee88060f6bc8 &exa=&cts=1334748967640&expac=&fk=W&gp=P&optkey=de

fault&clid=23A3C63D37E16EEA2397C50633E16E45&cp=def
ault&di=340&pi=7317&ps=95101&mk=en-us&pn=US+HPMSFT
3Wdefault&pid=6901517&su=http%3A%2F%2Fwww.msn.com%
2Fdefaultwpe3w.aspx&pageid=690151710&ce=1&hl=cplus
&cm=head%3Ecb1

[process 8] 65.54.81.211 192.168.254.192 GET
/i/87/DEC3F3D671E6CC76B09340612A38.jpg
[process 8] 207.46.193.176 192.168.254.192 GET

/action/MSN_Homepage_Remessaging_111808/nc?a=1
[process 8] 207.46.193.176 192.168.254.192 none

[process 8] 208.44.23.25 192.168.254.192 none

[process 8] 208.44.23.25 192.168.254.192 GET

/b?c1=2&c2=3000001&c7=http%3A%2F%2Fwww.msn.com%2F%
3Focid%3Diehp&c9=&rn=1334748958175

[process 8] 65.55.239.146 192.168.254.192 GET
/c.gif?udc=true&di=340&pi=7317&ps=95101&lng=en-us&
tp=http%3A%2F%2Fwww.msn.com%2Fdefaultwpe3w.aspx&ri
d=4571d83250544049bfc2ee88060f6bc8&rnd=13347489581
76&rf=&scr=1024x768

[process 8] 65.55.239.146 192.168.254.192 GET
/c.gif?udc=true&di=340&pi=7317&ps=95101&lng=en-us&
tp=http%3A%2F%2Fwww.msn.com%2Fdefaultwpe3w.aspx&ri
d=4571d83250544049bfc2ee88060f6bc8&rnd=13347489581
76&rf=&scr=1024x768&MUID=23A3C63D37E16EEA2397C5063
3E16E45&cb=1cd1d576b2f13a0

[process 8] 65.54.81.211 192.168.254.192 GET
/i/5E/4B835E56AC3C8535DB16275B4BAF4.jpg

[process 8] 65.54.80.242 192.168.254.192 GET
/i/BB/756A1C963A72E4AFBC36501B512725.jpg

[process 8] 65.54.81.211 192.168.254.192 GET
/i/E2/F757C6DFF15796123FA81CF7DCCF.jpg

[process 8] 65.55.239.146 192.168.254.192 GET
/c.gif?udc=true&di=340&pi=7317&ps=95101&lng=en-us&
tp=http%3A%2F%2Fwww.msn.com%2Fdefaultwpe3w.aspx&ri

d=4571d83250544049bfc2ee88060f6bc8&rnd=13347489581
76&rf=&scr=1024x768&RedC=c.msn.com&MXFR=23A3C63D37

E16EEA2397C50633E16E45
[process 8] 65.55.239.146 192.168.254.192 none

[process 8] 23.66.231.58 192.168.254.192 GET
/qsonhs.aspx?form=MSN005&q=

[process 8] 23.66.231.58 192.168.254.192 none

[process 8] 65.54.81.185 192.168.254.192 GET

/CIS/77/000/000/000/028/440.swf?fd=www.msn.com

[process 8] 65.54.81.185 192.168.254.192 GET
/CIS/18/000/000/000/024/175.jpg

Automatic scans

Virustotal
SHA256: a2c176ef3cc343194207e33acc19d5f8cb083a3c387a0404bd8f9d6bd29cfd6f
SHA1: c1af1fa6937097762824d0db039777ff35577727
MD5: 6c8f9658a390c24a9f4551dc15063927
File size: 75.5 KB (77312 bytes)
File name: DarkMegiSample
File type: Win32 EXE
Tags: yoda yodaprot
Detection ratio: 34 / 42
Analysis date: 2012-04-17 08:22:42 UTC (1 day, 3 hours ago)
More details

Antivirus	Result	Update
AhnLab-V3	Dropper/Rootkit.77312	20120417
AntiVir	HEUR/Crypted	20120417
Antiy-AVL	Trojan/Win32.Agent.gen	20120417
Avast	Win32:Malware-gen	20120417
AVG	PSW.Agent.ASED	20120417
BitDefender	Trojan.Generic.KDV.503006	20120417
ByteHero	-	20120417
CAT-QuickHeal	TrojanSpy.Agent.bwtk	20120417
ClamAV	PUA.Packed.YodaProt	20120417
Commtouch	W32/Heuristic-210!Eldorado	20120417
Comodo	TrojWare.Win32.TrojanDownloader.Agent.accn	20120417
DrWeb	Trojan.PWS.Gamania.34539	20120417
Emsisoft	Trojan.SuspectCRC!IK	20120417

eSafe Suspicious File 20120415
eTrust-Vet - 20120417
F-Prot W32/Heuristic-210!Eldorado 20120416
F-Secure Trojan.Generic.KDV.503006 20120417
Fortinet W32/Agent.BWTK!tr 20120417
GData Trojan.Generic.KDV.503006 20120417
Ikarus Trojan.SuspectCRC 20120417
Jiangmin TrojanSpy.Agent.uzc 20120417
K7AntiVirus Riskware 20120416
Kaspersky Trojan-Spy.Win32.Agent.bwtk 20120417
McAfee Artemis!6C8F9658A390 20120416
McAfee-GW-Edition - 20120417
Microsoft Trojan:Win32/Meredrop 20120417
NOD32 a variant of Win32/CsNowDown.C 20120417
Norman W32/Troj_Generic.ASBJ 20120416
nProtect Trojan/W32.Agent.77312.VC 20120417
Panda Generic Trojan 20120416
PCTools Downloader.Darkmegi 20120417
Sophos Mal/Packer 20120417
SUPERAntiSpyware - 20120402
Symantec Downloader.Darkmegi 20120417
TrendMicro Cryp_Yodap 20120417
TrendMicro-HouseCall Cryp_Yodap 20120417
VBA32 TrojanSpy.Agent.bwtk 20120416
VIPRE Trojan-Spy.Win32.Agent