



Anti-Virus Comparative No.1

- a) On-demand detection of virus/malware
- b) On-demand detection of dialers
- c) On-demand detection of unwanted samples

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1. Prologue

This is the first public Anti-Virus comparative made by my colleagues and me (Andreas Clementi). Because some of you still does not know much about me, here a little brief of me: I was born the 23. June 1979 in Italy and completed in the year 1999 in South Tyrol a degree as "Business technician for electro technology, electronic and informatics" in German language. After that, I started to study at the University of Innsbruck (Austria) informatics and psychology. Now, I make a break of my informatics study, because I need the time to finish my thesis for the psychology study. I am interested in computer viruses since about 1993, when my PC was infected the first time. Since that moment, I hate and catch computer viruses and help to make Anti-Virus software better in order to provide better protection against them; I would like to thank all teachers and people that helped me to improve my knowledge in this area. Since some months, this project has for the moment no longer academical support; I collaborate now with the Innsbrucker Kompetenzzentrum.IT. In future, when I will have finished all my studies and will have my degree in informatics, I will give to my comparatives a more official character. The comparatives that I will make will focus on on-demand scans over all viruses/malware samples that I find/receive. Further, the scan engines will be tested about their ProActive detection capabilities, to see how good they can protect against new threats. Those on-demand tests will be performed on a regular basis: every 6 months there will be an on-demand detection comparative and 3 months after there will be a retrospective test. All tested products are already a selection of good scanners that does fulfil our participation conditions. The 3 most important conditions in order to participate are: 100% ITW detection rates (as I do not have at the moment access to the WildCore collections, I have to use just those ItW-samples that I have), at least 80% ZOO detection rates and only products with one (own) scan-engine will be tested.

2. Introduction

There are just a few anti-virus testing institutions around the world, for example the aVTC of the University of Hamburg, AV-Test.org (University of Magdeburg), the University of Tampere, Virus Bulletin, ICSALABS, West Coast Labs, CheckVir, etc. It is hard to get into this area, but I think that more different independent and good test centres are needed, in order to evaluate and compare better the results.

All tests are free of fee for all, but who wants, has the possibility to donate something; donations and gifts are always welcome and highly appreciate.

About the quality of the used samples, we do our best to keep up a good collection; this is also one reason why it took so long before this first public comparative started, as we needed the time to maintain and analyze the databases. Residual bad samples in the databases should be just a few and not affecting much the results, as the databases are quite large.

During last year, we reported to AV companies for example: false alarms, crashes while scanning or deletion of some samples, security risks in virus descriptions provided on websites, cosmetical errors, etc.

2.1 Test Team

Supervisor, Presentation, Report and Test-beds: A. Clementi
Hardware, Software, Support, Help: P. Stelzhammer, G. Stocker, P. Heiss, R. Edwards, M. Jaider, G. Prossliner

2.2 Hardware and Operating System used

The tests were performed on a Windows XP Professional SP1 system. 13 Anti-Virus products were tested in this comparative.

Tests were performed by using this hardware:

1*Pentium 4 HT 2,8 GHz, 512 MB RAM, 2*80 GB hard disks + 4*120 GB hard disks (all HD are removable), DVD-ReWriter.

3. Conditions in order to participate

In order to participate to the comparative, products must conform to the following conditions in this order:

- a) The scanner must be able to detect 100% of ItW-samples and at least 80% of all zoo-samples.
- b) The scanner must be able to finish the scan of the full database with best possible settings within a reasonable time (time limit is 36 hours; most scanners do need about 6 hours).
- c) The product must use only (one) own scan engine(s).
- d) The scanner must be able to run without crashing or causing major problems. If it is not possible to make the scanner run, it will/can not be tested.
- e) The scanner must be able to scan files with extensions defined by the tester.
- f) The scanner should not move or change in any way the files or system during the scan when running in report-only mode. If it does, we will need to run the scanner in delete mode.
- g) The scanner must be able to scan a subdirectory tree.
- h) The scanner should not issue a sound alarm; there must be a way to turn the sound off.
- i) We keep the right to choose or exclude at any time products that are going to be tested. To be tested is a privilege and not a right.
- j) Only participating companies can on request receive missed samples for analysis (only where possible), excluding samples from the "unwanted" databases. There is a limit of samples that companies can receive. The limit is equal for all companies and set by the author.
- k) In order to be tested over dialers, the scanner must detect at least 1% of Dialers on-demand. In order to receive missed Dialers, the scanner must detect at least 51% of the Dialers.
- l) The scanner should create a report file on the fly. If no report file is created or if the report file has a "complicated" format, the scanner will be run in delete-mode and no report file will be delivered for that products.
- m) We keep the right to change the conditions at any time.

3.1 Tested products

The following 13 products were tested in this comparative:

Avast! 4.1.342 Professional Edition
BitDefender Anti-Virus 7.2 Professional Edition
Dr.Web Anti-Virus for Windows 95-XP 4.30a
ESET NOD32 2.000.9
F-Prot Anti-Virus for Windows 3.14b
H+B EDV AntiVir Professional Edition 6.22.00.09
Kaspersky Anti-Virus Personal 4.5.0.95
McAfee VirusScan Professional 8.0.26
Panda Anti-Virus Platinum 7.06.00
Symantec Norton Anti-Virus 10.0.1.13
GeCAD Reliable Anti-Virus (RAV) 8.6.105
Sophos Anti-Virus 3.78
Trend Micro Internet Security 11.10

Deadline for submitting products was the 4. February 2004. All products were updated with the last official updates that were available at 18.55 CET the 6. February 2004.

4. Content of virus/malware databases

The databases were frozen the 4. February 2004.

Number of samples in the databases:

Dialers	204.840
DOS viruses	219.025
Windows viruses	11.958
Worms	11.303
Macros	23.077
Scripts	5.144
OtherOS malware	1.081
Trojans	12.589
Backdoors	14.800
Other malware	1.535
Unwanted files	97.066
Unwanted programs	6.381

For more details, please check the virus lists and logs that are available for all participating companies on our website (password required).

I presume that the error quote of the results will be about between 0,01%-0,2%; I think that is low enough and acceptable, anyway I will of course try to minimize it further in future. I am sorry that I discovered the presence of some bad samples too late.

4.1 Creating the final summary of the results

Scans are performed up to 3 times for each product in order to get sure that all what can be detected by the scanner was detected. We process the logs and count every detected virus/malware in each category. To be sure that the results are counted right, we process the logs twice separately and compare than the results. The logs of all participating products can be downloaded by participating AV companies from our website. Contact the author to obtain the password if you did not received it already or if you forgot it.

5. Test results

Developer		H+BEDV Datentechnik		Alwil Software		Softwin		DialogueScience		Frisk Software	
Product name		AntiVir Prof.		Avast! Prof.		BitDefender Prof.		Dr. Web		F-Prot	
Program version		6.22.00.09		4.1.342		7.2.0.0		4.30a		3.14b	
Engine / signature version		6.23.0.60		0401-10		N/A		4.30.0		3.14.2	
Signature date		02/06/2004		02/06/2004		02/06/2004		02/06/2004		02/05/2004	
Number of virus records		N/A		N/A		70.071		46.016		103.435	
On-demand detection of virus/malware											
DOS viruses	219.025	209.747	95,76%	211.812	96,71%	212.076	96,83%	216.447	98,82%	218.805	99,90%
Windows viruses	11.958	9.030	75,51%	11.109	92,90%	11.134	93,11%	11.117	92,97%	11.584	96,87%
Macro viruses	23.077	22.310	96,68%	22.460	97,33%	22.931	99,37%	23.047	99,87%	23.025	99,77%
Script viruses	5.144	2.742	53,30%	3.051	59,31%	3.800	73,87%	3.998	77,72%	4.187	81,40%
Worms	11.303	8.140	72,02%	9.002	79,64%	9.959	88,11%	10.255	90,73%	10.239	90,59%
Backdoors	14.800	7.681	51,90%	10.432	70,49%	13.955	94,29%	13.307	89,91%	13.993	94,55%
Trojans	12.589	6.804	54,05%	9.495	75,42%	10.585	84,08%	8.776	69,71%	11.599	92,14%
other malware	1.535	329	21,43%	1.079	70,29%	1.038	67,62%	941	61,30%	1.319	85,93%
OtherOS malware	1.081	338	31,27%	684	63,27%	368	34,04%	590	54,58%	801	74,10%
TOTAL	300.512	267.121	88,89%	279.124	92,88%	285.846	95,12%	288.478	96,00%	295.552	98,35%
<i>Total without DOS & OtherOS</i>	<i>80.406</i>	<i>57.036</i>	<i>70,94%</i>	<i>66.628</i>	<i>82,86%</i>	<i>73.402</i>	<i>91,29%</i>	<i>71.441</i>	<i>88,85%</i>	<i>75.946</i>	<i>94,45%</i>
On-demand detection of dialers											
Dialers	204.840	192.733	94,09%			82.505	40,28%				
Detection of "unwanted samples"											
<i>Unwanted files¹</i>	<i>97.066</i>	<i>51.212</i>	<i>53%</i>	<i>38.359</i>	<i>40%</i>	<i>49.315</i>	<i>51%</i>	<i>54.081</i>	<i>56%</i>	<i>53.916</i>	<i>56%</i>
<i>Unwanted programs²</i>	<i>6.381</i>	<i>3.094</i>	<i>48%</i>	<i>2.123</i>	<i>33%</i>	<i>4.000</i>	<i>63%</i>	<i>1.797</i>	<i>28%</i>	<i>2.204</i>	<i>35%</i>
<i>Unwanted samples - TOTAL</i>	<i>103.447</i>	<i>54.306</i>	<i>52%</i>	<i>40.482</i>	<i>39%</i>	<i>53.315</i>	<i>52%</i>	<i>55.878</i>	<i>54%</i>	<i>56.120</i>	<i>54%</i>

Developer		Trend Micro		Kaspersky Labs		Network Associates		ESET	
Product name		Internet Security		KAV Personal		McAfee VirusScan		NOD32 Anti-Virus	
Program version		11.10		4.5.0.95		8.0.26		2.000.9	
Engine / signature version		6.810.1005 (757)		N/A		4.3.20 / 4322		1.617	
Signature date		02/06/2004		02/06/2004		02/04/2004		02/06/2004	
Number of virus records		N/A		84.229		85.469		N/A	
On-demand detection of virus/malware									
DOS viruses	219.025	206.838	94,44%	218.930	99,96%	218.865	99,93%	184.117	84,06%
Windows viruses	11.958	10.338	86,45%	11.932	99,78%	11.945	99,89%	11.432	95,60%
Macro viruses	23.077	22.859	99,06%	23.077	100%	23.061	99,93%	22.952	99,46%
Script viruses	5.144	3.523	68,49%	5.012	97,43%	5.052	98,21%	3.439	66,85%
Worms	11.303	8.773	77,62%	11.214	99,21%	11.141	98,57%	9.565	84,62%
Backdoors	14.800	8.715	58,89%	14.768	99,78%	13.854	93,61%	12.941	87,44%
Trojans	12.589	8.694	69,06%	12.510	99,37%	11.675	92,74%	8.498	67,50%
other malware	1.535	836	54,46%	1.530	99,67%	1.373	89,45%	1.030	67,10%
OtherOS malware	1.081	656	60,68%	1.045	96,67%	1.033	95,56%	519	48,01%
TOTAL	300.512	271.232	90,26%	300.018	99,84%	297.999	99,16%	254.493	84,69%
<i>Total without DOS & OtherOS</i>	<i>80.406</i>	<i>63.738</i>	<i>79,27%</i>	<i>80.043</i>	<i>99,55%</i>	<i>78.101</i>	<i>97,13%</i>	<i>69.857</i>	<i>86,88%</i>
On-demand detection of dialers									
Dialers	204.840			203.190	99,19%	204.016	99,60%		
Detection of "unwanted samples"									
<i>Unwanted files¹</i>	<i>97.066</i>	<i>34.812</i>	<i>36%</i>	<i>65.420</i>	<i>67%</i>	<i>72.029</i>	<i>74%</i>	<i>22.211</i>	<i>23%</i>
<i>Unwanted programs²</i>	<i>6.381</i>	<i>3.442</i>	<i>54%</i>	<i>6.076</i>	<i>95%</i>	<i>5.521</i>	<i>87%</i>	<i>1.680</i>	<i>26%</i>
<i>Unwanted samples - TOTAL</i>	<i>103.447</i>	<i>38.254</i>	<i>37%</i>	<i>71.496</i>	<i>69%</i>	<i>77.550</i>	<i>75%</i>	<i>23.891</i>	<i>23%</i>

Developer		Symantec		Panda Software		GeCAD Software		Sophos	
Product name		Norton Anti-Virus		Panda Platinum		RAV Desktop		Sophos Anti-Virus	
Program version		10.0.1.13		7.06.00		8.6.105		3.78	
Engine / signature version		60204d		N/A		8.11		2.18	
Signature date		02/04/2004		02/06/2004		02/05/2004		02/06/2004	
Number of virus records		64.943		69.415		89.689		87.468	
On-demand detection of virus/malware									
DOS viruses	219.025	212.580	97,06%	218.446	99,74%	217.791	99,44%	213.301	97,39%
Windows viruses	11.958	11.814	98,80%	11.508	96,24%	11.617	97,15%	11.437	95,64%
Macro viruses	23.077	22.962	99,50%	23.047	99,87%	22.868	99,09%	22.824	98,90%
Script viruses	5.144	4.434	86,20%	4.779	92,90%	4.499	87,46%	3.736	72,63%
Worms	11.303	10.845	95,95%	10.892	96,36%	10.743	95,05%	9.711	85,92%
Backdoors	14.800	10.887	73,56%	14.336	96,86%	14.384	97,19%	10.782	72,85%
Trojans	12.589	10.137	80,52%	11.962	95,02%	11.317	89,90%	9.112	72,38%
other malware	1.535	1.136	74,01%	481	31,34%	1.225	79,80%	984	64,10%
OtherOS malware	1.081	818	75,67%	941	87,05%	897	82,98%	782	72,34%
TOTAL	300.512	285.613	95,04%	296.392	98,63%	295.341	98,28%	282.669	94,06%
<i>Total without DOS & OtherOS</i>	<i>80.406</i>	<i>72.215</i>	<i>89,81%</i>	<i>77.005</i>	<i>95,77%</i>	<i>76.653</i>	<i>95,33%</i>	<i>68.586</i>	<i>85,30%</i>
On-demand detection of dialers									
Dialers	204.840	125.950	61,49%			202.860	99,03%	172.194	84,06%
Detection of "unwanted samples"									
<i>Unwanted files¹</i>	<i>97.066</i>	<i>33.256</i>	<i>34%</i>	<i>35.390</i>	<i>36%</i>	<i>49.707</i>	<i>51%</i>	<i>24.312</i>	<i>25%</i>
<i>Unwanted programs²</i>	<i>6.381</i>	<i>3.741</i>	<i>59%</i>	<i>1.656</i>	<i>26%</i>	<i>3.691</i>	<i>58%</i>	<i>2.208</i>	<i>35%</i>
<i>Unwanted samples - TOTAL</i>	<i>103.447</i>	<i>36.997</i>	<i>36%</i>	<i>37.046</i>	<i>36%</i>	<i>53.398</i>	<i>52%</i>	<i>26.520</i>	<i>26%</i>

6. Summary results

Here are the results reached by each scanner on each category, sorted by detection rate.

(a) Results over Windows viruses, Macros, Worms and Scripts detection:

1.	Kaspersky	99,52%
2.	McAfee	99,45%
3.	Panda	97,56%
4.	Symantec	97,23%
5.	RAV	96,59%
6.	F-Prot	95,25%
7.	Dr.Web	94,05%
8.	BitDefender	92,89%
9.	Sophos	92,67%
10.	NOD32	92,05%
11.	Avast	88,62%
12.	TrendMicro	88,37%
13.	H+BEDV	82,01%

(b) Results over Backdoors, Trojans and other malware detection:

1.	Kaspersky	99,60%
2.	RAV	93,09%
3.	F-Prot	93,04%
4.	McAfee	93,01%
5.	Panda	92,58%
6.	BitDefender	88,43%
7.	Dr.Web	79,60%
8.	NOD32	77,68%
9.	Symantec	76,61%
10.	Avast	72,62%
11.	Sophos	72,18%
12.	TrendMicro	63,08%
13.	H+BEDV	51,22%

(c) Results over DOS virus detection:

1.	Kaspersky	99,96%
2.	McAfee	99,93%
3.	F-Prot	99,90%
4.	Panda	99,74%
5.	RAV	99,44%
6.	Dr.Web	98,82%
7.	Sophos	97,39%
8.	Symantec	97,06%
9.	BitDefender	96,83%
10.	Avast	96,71%
11.	H+BEDV	95,76%
12.	TrendMicro	94,44%
13.	NOD32	84,06%

(d) Results over Dialer detection:

1.	McAfee	99,60%
2.	Kaspersky	99,19%
3.	RAV	99,03%
4.	H+BEDV	94,09%
5.	Sophos	84,06%
6.	Symantec	61,49%
7.	BitDefender	40,28%
8.	all the others	< 1 %

(e) Results over 'OtherOS malware' detection:

1.	Kaspersky	96,67%
2.	McAfee	95,56%
3.	Panda	87,05%
4.	RAV	82,98%
5.	Symantec	75,67%
6.	F-Prot	74,10%
7.	Sophos	72,34%
8.	Avast	63,27%
9.	TrendMicro	60,68%
10.	Dr.Web	54,58%
11.	NOD32	48,01%
12.	BitDefender	34,04%
13.	H+BEDV	31,27%

7. Credits

After each comparative products will receive "credits" based on the rankings reached in each single category (This is mainly just for my curiosity):

	a	b	c	d	e	$\Sigma^1/5$
Avast	11	10	10	8	8	9,40
BitDefender	8	6	9	7	12	8,40
Dr.Web	7	7	6	8	10	7,60
F-Prot	6	3	3	8	6	5,20
H+BEDV	13	13	11	4	13	10,80
Kaspersky	1	1	1	2	1	1,20
McAfee	2	4	2	1	2	2,20
NOD32	10	8	13	8	11	10,00
Panda	3	5	4	8	3	4,60
RAV	5	2	5	3	4	3,80
Sophos	9	11	7	5	7	7,80
Symantec	4	9	8	6	5	6,40
TrendMicro	12	12	12	8	9	10,60

All the tested products are already a selection of very good Anti-Virus scan engines (compared to others). Anyway, based on this test, I would rank the products as follow:

1 st	place: Kaspersky	(1,20)
2 nd	place: McAfee	(2,20)
3 rd	place: RAV	(3,80)
4 th	place: Panda	(4,60)
5 th	place: F-Prot	(5,20)
6 th	place: Symantec	(6,40)
7 th	place: Dr.Web	(7,60)
9 th	place: Sophos	(7,80)
8 th	place: BitDefender	(8,40)
10 th	place: Avast	(9,40)
11 th	place: NOD32	(10,0)
12 th	place: TrendMicro	(10,6)
13 th	place: H+BEDV	(10,8)

¹ Lower numbers means „better“.

7.1 Additional test

Additionally we tested also the detection rates over unwanted files and unwanted programs. As those categories covers samples in the „grey zone“ - this means they can be totally harmless, but some of them can under circumstances also be used malevolent - the detection rate over those categories will not influence at all the rankings and final results of the comparative above.

Unwanted files are for example: bad, corrupted, intended samples, object files & source codes, and other various garbage. Unwanted programs are for example: Adware, Jokes, Simulations, Constructors, Virus & Hacker tools, and other potentially dangerous software.

Results over Unwanted files detection:

1. McAfee	74%
2. Kaspersky	67%
3. Dr.Web	56%
4. F-Prot	56%
5. H+BEDV	53%
6. RAV	51%
7. BitDefender	51%
8. Avast	40%
9. Panda	36%
10. TrendMicro	36%
11. Symantec	34%
12. Sophos	25%
13. NOD32	23%

Results over Unwanted programs detection:

1. Kaspersky	95%
2. McAfee	87%
3. BitDefender	63%
4. Symantec	59%
5. RAV	58%
6. TrendMicro	54%
7. H+BEDV	48%
8. Sophos	35%
9. F-Prot	35%
10. Avast	33%
11. Dr.Web	28%
12. NOD32	26%
13. Panda	26%

The detection of such samples is not a must, anyway it can be an useful feature, as for example system administrators would like to know about the presence of such files on their system (as they should normally not be found on 100% "clean" system) and then decide how to handle with them.

7.2 Products that did crash or hang while during the test

Those products did crash/hang:

- BitDefender
- H+BEDV
- F-Prot
- Panda
- Symantec

Was I able to reproduce/report it?

NO, but it's probably while cleaning or updating self-extracting EXE/ZIPs can be solved by change settings

NO, I am not able to send single files where it occurs

NO, :-?

YES, "error 3019,1" on various files

8. Conclusions

With those results, we wish to help AV producers to determine their actual state of detection rate, in order that they can improve their products and protect their customers. We think (hope) that our tests are of some value, because our databases are relevant and our test procedures fair and independent; anyway faults are always possible. We think that there are too much low-quality reviews of AV products based on small and bad quality test sets, we want to provide with those tests the required data for reviewers, as our tests are of superior quality than those done by magazine and other reviewers, as they do not have the knowledge and the resources (e.g. virus/malware databases) in order to make good (valid) tests. We are concentrating to show how good scan-engines are at detecting viruses/malware on-demand; other features like interface, manuals, support, price, speed, etc. can be easily reviewed also by magazine reviewers. It is necessary that more good and independent tests of anti-virus products are performed and published, so that the users can read how safe they really are. We hope that everybody will find our tests useful.

9. Next tests

It is our intention to continue our tests periodically: every 6 months (February and August) an on-demand test and every 3 months later a retrospective test, as long as we are able to update our virus/malware databases suitably. The next test will be done in 3 months (May 2003); it will be a retrospective test. In future, we will most probably not include anymore the "unwanted" databases.

10. Used products, versions and options during tests

The following list summarizes products/versions tested and options used during test. Producer addresses and contacts are also listed below (if an address is wrong, please let me know). Best possible settings were used in the GUI version. If needed, we used the command line scanners to make logs of some products.

%1 denotes path-to-scan %2 denotes report file name and location.

Product: Avast!
Version: 4.1.342 Sig: 0401-10 date: 02/06/2004
Company: Alwil Software
Address: Prubezna 76, 100 00 Prague 10, Czech Republic
Contact: Pavel Baudis Email: baudis@asw.cz
Website: <http://www.avast.com>
Options: started from GUI with best possible settings

Product: BitDefender Professional Edition
Version: 7.2.0.0 Sig-date: 02/06/2004
Company: SOFTWIN GmbH
Address: Karlsdorfer Str. 56, 88069 Tettnang, Germany
Contact: Martin Siemens Email: msiemens@bitdefender.de
Website: <http://www.bitdefender.com>
Options: started from GUI with best possible settings

Product: Dr.Web for Windows 95-XP
Version: 4.30a Sig/date: 02/06/2004
Company: Dialogue Science, Inc.
Address: Computing Center of the Russian Academy of Sciences
Room 102, House 40, Vavilova Street
Moscow, 119991, Russia
Contact: Yury Lyashchenko Email: Yury@dials.ru
Website: <http://www.dials.ru/english>
Options: started from GUI with best possible settings

Product: F-Prot Anti-Virus
Version: program: 3.14a engine: 3.14.2
 Sign.def & Sign2.def from 02/05/2004
 Macro.def and nomacro.def from 02/02/2004
Company: Frisk Software International
Address: Thverholt 18, 105 Reykjavik, Iceland
Contact: Sigurdur Arnar Stefnisson Email: siggia@f-prot.com
Website: <http://www.f-prot.com>
Options: fpcmd.exe /AI /LIST /DUMB /ARCHIVE /PACKED /NOMEM /COLLECT /REPORT=%2
%1

Product: Kaspersky Anti-Virus
Version: 4.5.0.95 Sig-date: 06 February 2004
Company: Kaspersky Lab.
Address: 123363 Geroyev Panfilovtcev Street 10, Moscow, Russia
Contact: Petr Vovchenko Email: Petr.Vovchenko@kaspersky.com
Website: <http://www.kaspersky.com>
Options: started /redundant command line and best possible settings

Product: McAfee VirusScan
Version: 8.0.26 Sig: 4.3.20 / 4322 date: 02/04/2004
Company: Network Associates
Address: Alton House, Gateway Way, Aylesbury, Bucks HP19 8YD, England
Contact: Igor Muttik Email: vsample@avertlabs.com
Website: <http://www.mcafee.com>
Options: scan.exe %1 /rptall /rpterr /mailbox /secure /mime /vid /program
/nomem /!guru /!ivn /l /sub /report=%2

Product: AntiVir Personal Edition
Version: 6.22.00.09 Sig: 6.23.0.60 date: 02/06/2004
Company: H+B EDV Datentechnik
Address: Lindauer Str. 21, 88069 Tettnang, Germany
Contact: Tjark Auerbach Email: tauerbach@antivir.de
Website: <http://www.hbedv.de>
Options: started from GUI with best possible settings

Product: NOD32
Version: 2.000.9 Sig: 1.617 date: 02/06/2004
Company: ESET s.r.o
Address: Svoradova 1, 811 03 Bratislava, Slovenská republika
Contact: Anton Zajac Email: zajac@eset.com
Website: <http://www.nod32.com>
Options: started with /AH command line and best possible settings

Product: Norton Antivirus
Version: 10.0.1.13 Sig: 60204d date: 02/04/2004
Company: Symantec
Address: 10201 Torre Avenue, Cupertino, CA 95014
Contact: Sarah Gordon Email: sgordon@symantec.com
Website: <http://www.symantec.com>
Options: started from GUI with best possible settings

Product: Panda Platinum Anti-Virus
Version: 7.06.00 date: 02/06/2004
Company: Panda Software
Address: Ronda de Poniente 19, 28760 Tres Cantos, Madrid, Spain
Contact: Javier Merchan Email: jmerchan@pandasoftware.es
Website: <http://www.pandasoftware.com>
Options: started from GUI with best possible settings

Product: RAV Antivirus
Version: 8.6.105 date: 02/05/2004
Company: GeCAD The Software Company, Romania
Address: Optidol Business Center, Floor 2, Mihai Bravu 223, Bucharest, ROMANIA
Contact: Adrian Filiseanu Email: fili@ravantivirus.com
Website: <http://www.ravantivirus.com>
Options: ravav.exe --heuristics=on --archive -M -I off -rptall --report=%2 %1

Product: Sophos Anti-Virus
Version: 3.78 date: 02/06/2004
Company: Sophos Plc
Address: The Pentagon, Abingdon Science Park, Abingdon, OX14 3YP, UK
Contact: Paul Baccas Email: paul.baccas@sophos.com
Website: <http://www.sophos.com>
Options: started from GUI with best possible settings

Product: Trend Micro
Version: 11.10 Sig: 6.810.1005 (pattern 757) date: 02/06/2004
Company: Trend Micro Deutschland GmbH
Address: Lise-Meitner-Str. 4, 85716 Unterschleissheim, Germany
Contact: Raimund Genes
Email: Raimund_Genes@trendmicro-europe.com
Website: <http://www.trendmicro.com>
Options: started from GUI with best possible settings

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Andreas Clementi, Austria (February 2004)