

VB100 COMPARATIVE REVIEW ON WINDOWS 10 PRO 64-BIT

INTRODUCTION

Our first test on the shiny new *Windows 10* got under way just a few months after the platform's release in mid-2015, and as expected there was a wide field of participants eager to gain certification. A few of our regular participants opted to sit this test out, thanks to their solutions not being quite ready for the platform. Amongst those that did participate, we expected to see a few bugs emerging as development and QA teams settle in to the new surroundings of *Windows 10*.

Testing took somewhat longer than expected, and with some storage issues hitting our test network as well, this report has taken some time to come to completion. We plan to revisit *Windows 10* in the near future, and will make it one of our more regularly tested platforms as its uptake continues to grow.

PLATFORM AND TEST SETS

Setting up *Windows 10* presented few surprises for the lab team, who had read copious articles and blog posts detailing the changes from previous editions – most notably from a security and privacy angle – in a slew of data-harvesting techniques, which were disabled as far as possible during the installation and set-up process. Some initial trials showed that most of our standard testing tools and automation scripts functioned with few to no changes required in the new environment, and barring some networking oddities that arose during the initial set-up phases, we were soon ready to see how well our selection of products would fit in.

The deadline for participation in this test was 21 October, with the most recent WildList available at the time forming the core of our certification sets – this proved to be version 4.022, released the same day. Alongside this was our standard set of clean files, as usual stripped of items

considered to have become too old or too rarely used to be relevant, and boosted as always by a batch of newer packages. The total size of the clean set this month was a little over 750,000 files, taking up around 160GB of disk space.

With the certification sets in place and our standard procedures having been followed for compiling our other detection sets – using samples first seen by our lab systems in the days shortly before and shortly after each phase of the test – we were ready to start looking at some products.

BUSINESS PRODUCTS

Defenx Security Suite

Main version: 9.2

Update versions: 4632.?.2041 build 211, build 223, build 229, build 238

Last 6 tests: 5 passed, 0 failed, 1 no entry

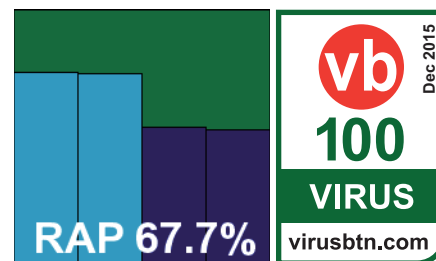
Last 12 tests: 10 passed, 0 failed, 2 no entry

ItW on demand: 100.00% **ItW on access:** 100.00%

False positives: 0 **Stability:** Fair

First up this month is *Defenx*, a regular on our test bench for more than five years with a very strong pass rate over that time. Its

most recent version takes a little time to install, with much of the process taken up by the firewalling components of



the suite, but once completed a clean and spartan interface is presented, with minimal adornment but good access to a decent range of configuration options.

Stability was reasonable for the most part, but on one occasion we encountered a blue screen whilst performing our speed tests, an issue which was quickly resolved by the developers but one which dents the stability rating for *Defenx* heavily this month. Speed measures were completed without further interruptions, showing fairly light impact on resource usage but a clear slowdown in our set of common activities.

Detection rates were a little on the low side as usual, with a distinct drop into the latter, offline parts of the RAP sets, but the WildList set was covered well, and with no issues in the clean sets, *Defenx* earns another VB100 award.

eScan Internet Security Suite for Windows

Main version: 14.0.1400.1809 DB

Update versions: N/A

Last 6 tests: 6 passed, 0 failed, 0 no entry

Last 12 tests: 12 passed, 0 failed, 0 no entry

ItW on demand: 100.00% **ItW on access:** 100.00%

False positives: 0 **Stability:** Fair

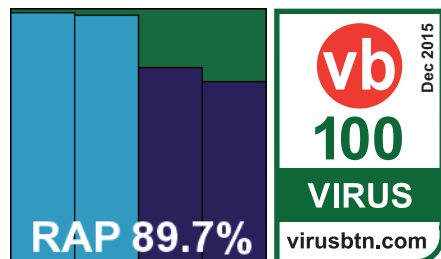
eScan is one of a select few products able to boast a perfect record of passes in the last 12 tests.

Installation of the current suite

edition was a lengthy process but it completed smoothly, presenting an interface with an attractive and colourful set of tiles in the centre and a grey, serious background. Configuration is provided in excellent depth and seemed simple to navigate.

Stability was decent, although we noted that the real-time protection took quite some time to take effect on start-up, and on one install the interface locked itself down with all options greyed out and inaccessible; a reboot was needed to rectify things. Performance impact was good, with very light use of memory, CPU use somewhat increased at busy times, and our set of tasks zipping through at great speed.

Detection was, as usual, aided by the *Bitdefender* engine, and once again proved very strong with good scores across the test sets. The core certification sets were handled



well and *eScan* comfortably earns another VB100 award, maintaining its long run of success.

ESTsoft ALYac

Main version: 3.0.0.5

Update versions: 15.8.17.1/562593.2015102115/7.63007/5744006.20151021, 15.8.17.1/566207.2015110422/7.63212/5729964.20151104, 15.8.17.1/562593.2015102115/7.63007/5744006.20151021, 15.8.17.1/567835.2015112322/7.63515/5685378.20151123

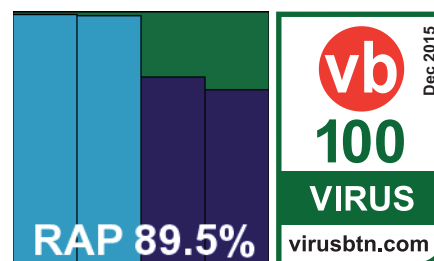
Last 6 tests: 5 passed, 0 failed, 1 no entry

Last 12 tests: 10 passed, 0 failed, 2 no entry

ItW on demand: 100.00% **ItW on access:** 100.00%

False positives: 0 **Stability:** Solid

ESTsoft is another provider that integrates the *Bitdefender* engine alongside its own technology, and has enjoyed



an impressive run of success over the past few years. The installation process this month was pretty time-consuming, possibly in part due to the distance of our lab from the company's core markets. Once installation was complete, we saw the usual busy interface packed with information and links; configuration options are reasonably detailed, and for the most part clearly marked.

Performance impact was pretty decent, with minimal use of RAM and CPU use not too high either, and our set of activities didn't take much longer to complete than our baselines. Stability was impeccable with no problems to report.

Detection was strong too, with superb coverage in the reactive sets, something of a decline into the proactive part of the RAP test but maintaining respectable levels. The core sets presented no issues and *ESTsoft* easily earns another VB100 award.

Fortinet FortiClient

Main version: 5.0.9.1349

Update versions: 5.220/28.910, 29.155, 29.345, 30.579

Last 6 tests: 5 passed, 0 failed, 1 no entry

Last 12 tests: 9 passed, 1 failed, 2 no entry

ItW on demand: 100.00% **ItW on access:** 100.00%
False positives: 0 **Stability:** Solid

Fortinet's client anti-malware product is another reliable performer in our tests with a clean run of passes in the last year of testing.

The set-up process is speedy and simple and the interface likewise: very minimal with few configuration options available at the client side, but sensible defaults and no issues finding what options are provided.

Stability was perfect with no problems even under heavy stress, and performance impact was good too, with low resource usage and our set of tasks running through faster than on a machine running *Windows Defender*.

Detection was very good too, and with flawless coverage of the core certification sets a VB100 award is easily earned by *Fortinet*.

Ikarus anti.virus

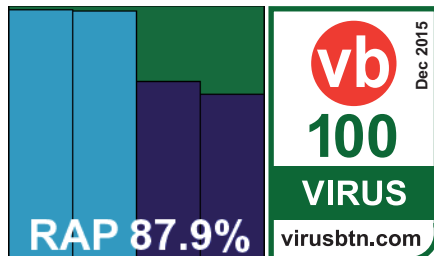
Main version: 2.8.40
 Update versions: 1.9.5/94333, 94619, 94744, 2.8.41/94927
 Last 6 tests: 4 passed, 0 failed, 2 no entry
 Last 12 tests: 8 passed, 0 failed, 4 no entry

ItW on demand: 100.00% **ItW on access:** 100.00%
False positives: 0 **Stability:** Stable

Austrian *Ikarus* does not enter every one of our tests, but has appeared in two out of every three in the last couple of years, achieving a

pass in each of those. The product install is simple and speedy (having the .NET framework available helps with this), and the interface is clean and angular with decent information and a reasonable array of configuration options.

Stability was decent, with only a single incidence of a scan apparently getting stuck on a file. Performance impact



wasn't bad either, with RAM usage low and CPU usage just a little above average, while our set of tasks once again ran through faster than the baseline measures.

Detection was very good too, well up with the bulk of this month's top performers, and with nothing to complain about in the certification sets a VB100 award is well deserved by *Ikarus*.

iSheriff Security from the Cloud

Main version: 3.71
 Update versions: 5.6.0, 3.71/5.7.3
 Last 6 tests: 4 passed, 1 failed, 1 no entry
 Last 12 tests: 9 passed, 1 failed, 2 no entry

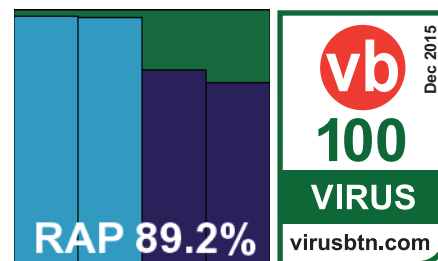
ItW on demand: 100.00% **ItW on access:** 100.00%
False positives: 0 **Stability:** Solid

Our test history for *iSheriff* shows a decent rate of passes over the last few years, with a very regular participation rate. The product has

evolved somewhat over that time, the current version being another user of the *Bitdefender* engine. Installation involves accessing an online portal and fetching an install package from there, which adds a little to the overall set-up time. The interface is also web-based, with a local set of controls supplemented by configuration options on the central portal.

Stability was excellent, with no problems reported, and performance numbers were good too, with resource usage around average and our set of tasks blasting through in splendid time.

Detection was very strong, and with a clean run through the certification sets a VB100 award is comfortably earned by *iSheriff*.



Kaspersky Small Office Security 4 Personal Computer

Main version: 15.0.2.361(c)
 Update versions: 15.0.2.361(d)
 Last 6 tests: 5 passed, 0 failed, 1 no entry
 Last 12 tests: 9 passed, 0 failed, 3 no entry

ItW on demand: 100.00% **ItW on access:** 100.00%
False positives: 0 **Stability:** Solid

As usual we had two submissions from *Kaspersky Lab* this month, starting off with the vendor's small-business offering, which has picked up a strong string of passes in the last few years of testing. Installing the product takes a little while, with the initial updates accounting for much of the time. The interface presented is as slick and professional as ever – as with many products of late, it uses a tiled approach to fit in with the latest trends for *Windows* products, and manages to present controls for a wealth of components in some detail without making access overcomplicated.

Stability was perfect with no problems observed throughout the test period, and performance impact was very light too, with no more than a marginal increase in memory use. CPU use was slightly elevated and completion of our set of tasks was quicker than the baselines.

Detection measures are missing again this month, but the certification sets were handled impeccably and a VB100 award is easily earned by *Kaspersky Lab*.

Microsoft System Center Endpoint Protection

Main version: 4.8.10240.16384

Update versions: 1.1.12205.0/1.209.151.0, 1.1.12205.0/1.209.1414.0, 1.1.12205.0/1.209.2169.0, 1.1.12300.0/1.211.298.0

Last 6 tests: 4 passed, 0 failed, 2 no entry

Last 12 tests: 9 passed, 0 failed, 3 no entry

ItW on demand: 100.00% **ItW on access:** 100.00%
False positives: 0 **Stability:** Stable

Microsoft's business product seems even more closely integrated with *Windows Defender* in *Windows 10*, with the installation

process little more than a quick adjustment to allow centralized management. The GUI used at the client level is that of *Windows Defender*, which as one would expect is professional-looking and fits in nicely with its surroundings. Configuration options are at a decent base level of complexity, and fairly simple to operate.



Stability was good but not quite perfect, with a single incidence of an update failing to complete (complaining about network issues, but there were no signs of any issues at our end). Performance impact was, as one would expect, fairly similar to what was recorded with the basic *Windows Defender* set-up, trace differences possibly caused by random noise as much as the minor changes to the product itself.

Detection was strong, especially in the offline proactive sets, showing a steady upward trend for *Microsoft* over the last few tests; the core sets presented no difficulties and with a clean run through all of them, *Microsoft* also earns another VB100 award.

Quick Heal Seqrite Endpoint Security

Main version: 16.00/9.0.3.1 64Bit

Update versions: N/A

Last 6 tests: 4 passed, 0 failed, 2 no entry

Last 12 tests: 4 passed, 0 failed, 8 no entry

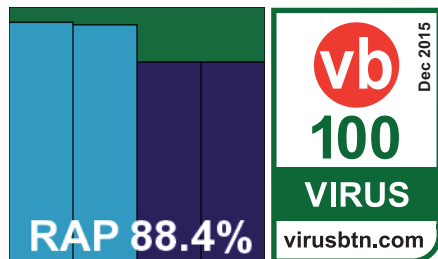
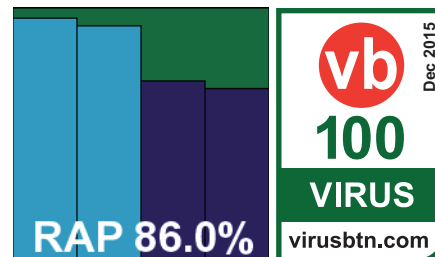
ItW on demand: 100.00% **ItW on access:** 100.00%
False positives: 0 **Stability:** Stable










Quick Heal's Seqrite range targets larger enterprises, and has been showing up in our tests for much of the last year or so, achieving a

good run of success in its first few outings. Set-up is rather a drawn-out affair, with much of the time taken up with initial updates; later updates proved much more rapid. The interface will be familiar to users of *Quick Heal's* other products, with the layout little changed and only the severe monochrome colour scheme differentiating it.

Stability was decent, only a couple of scans of large malware sets proving a little troublesome, and performance impact was not too heavy either, with resource usage just a touch above this month's average figure and our set of tasks only slightly slower than average.

Detection rates were strong too, with creditable scores across the board, and with another clean sweep of the core certification sets, *Quick Heal's Seqrite* comfortably earns a VB100 award.



Certification tests - business products	On demand	On access	Clean sets		VB100
	Standard WildList	Standard WildList	FP	Warnings	
Defenx Security Suite	100.00%	100.00%			
eScan Internet Security Suite for Windows	100.00%	100.00%			
ESTsoft ALYac	100.00%	100.00%			
Fortinet FortiClient	100.00%	100.00%			
Ikarus anti.virus	100.00%	100.00%			
iSheriff Security from the Cloud	100.00%	100.00%			
Kaspersky Small Office Security 4 Personal Computer	100.00%	100.00%		2	
Microsoft System Center Endpoint Protection	100.00%	100.00%			
Quick Heal Seqrite Endpoint Security	100.00%	100.00%			

Product information - business products	Install time (m)*	Reboot required	Fully 64-bit	Third-party engine technology †	Stability score	Stability rating
Defenx Security Suite	4:15	✓	✓	Agnitum	10	<i>Fair</i>
eScan Internet Security Suite for Windows	15:15	X	X	Bitdefender	7	<i>Fair</i>
ESTsoft ALYac	19:30	X	✓	Bitdefender	0	Solid
Fortinet FortiClient	3:30	X	X		0	Solid
Ikarus anti.virus	3:15	X	X		1	<i>Stable</i>
iSheriff Security from the Cloud	12:00	X	X	Bitdefender	0	Solid
Kaspersky Small Office Security 4 Personal Computer	11:00	X	X		0	Solid
Microsoft System Center Endpoint Protection	N/A	X	X		1	<i>Stable</i>
Quick Heal Seqrite Endpoint Security	24:00	X	✓		2	<i>Stable</i>

0 = Solid 0.1 – 4.9 = Stable 5 – 14.9 = Fair 15 – 29.9 = Buggy 30+ = Flaky

* Install time includes initial updates and time to enable on-access protection (assuming reasonable typing speed and familiarity with product operation)

† Only records presence of third-party scanning engines, most products will include additional in-house technologies

Archive scanning - business products		ACE	CAB	EXE-RAR	EXE-ZIP	JAR	LZH	RAR	TGZ	ZIP	7z	TBZ2	ZIPX	EXT*
Defenx Security Suite	OD	√	√	√	√	√	X	√	5	√	X	5	X	√
	OA	X	X	X	X	X	X	X	X	X	X	X	X	√
eScan I.S.S for Windows	OD	X/√	X/√	5/√	6/√	1/√	X/√	X/√	5/√	1/√	X/√	X/√	1/√	√
	OA	X	X	X	X	1	X	X	X	1	X	X	X	√
ESTsoft ALYac	OD	√	√	8	8	X/1	X	√	X	X/1	√	X	X	√
	OA	X	X	8	8	X	X	X	X	X	X	X	X	√
Fortinet FortiClient	OD	√	√	√	√	√	√	√	6	√	√	√	√	√
	OA	√	X	√	√	√	X	X	X	X	X	√	√	√
Ikarus anti.virus	OD	7	7	2	2	7	8	7	7	7	2	7	2	√
	OA	7	X	2	2	X	8	X	7	X	2	7	2	√
iSheriff Security	OD	X/√	X/√	X/√	X/√	X/√	X/√	X/√	X/√	X/√	X/√	X/√	X/√	√
	OA	X	X	X	X	X	X	X	X	X	X	X	X	√
Kaspersky S.O.S	OD	√	√	√	√		√	√	√	√	√	√	√	√
	OA	X/√	X/√	1/√	1/√	X/√	X/√	X/√	X/√	X/√	X/√	X/√	X/√	√
Microsoft System Center	OD	√	√	√	√	√	√	√	√	√	√	√	√	√
	OA	X	X	X	X	X	X	X	X	X	X	X	X	√
Quick Heal Seqrite	OD	2/5	X/5	2	2	3/5	X	2/5	X/2	3/5	2/5	X/2	1	√
	OA	X	X	X	X	2	X	X	X	2	X	X	1	√

Key:

√ - Detection of EICAR test file up to ten levels of nesting

X - No detection of EICAR test file

X/√ - default settings/all files









(Please refer to text for full product names.)

1-9 - Detection of EICAR test file up to specified nesting level

If just z-exe detection in ext, then X

*Detection of EICAR test file with randomly chosen file extension

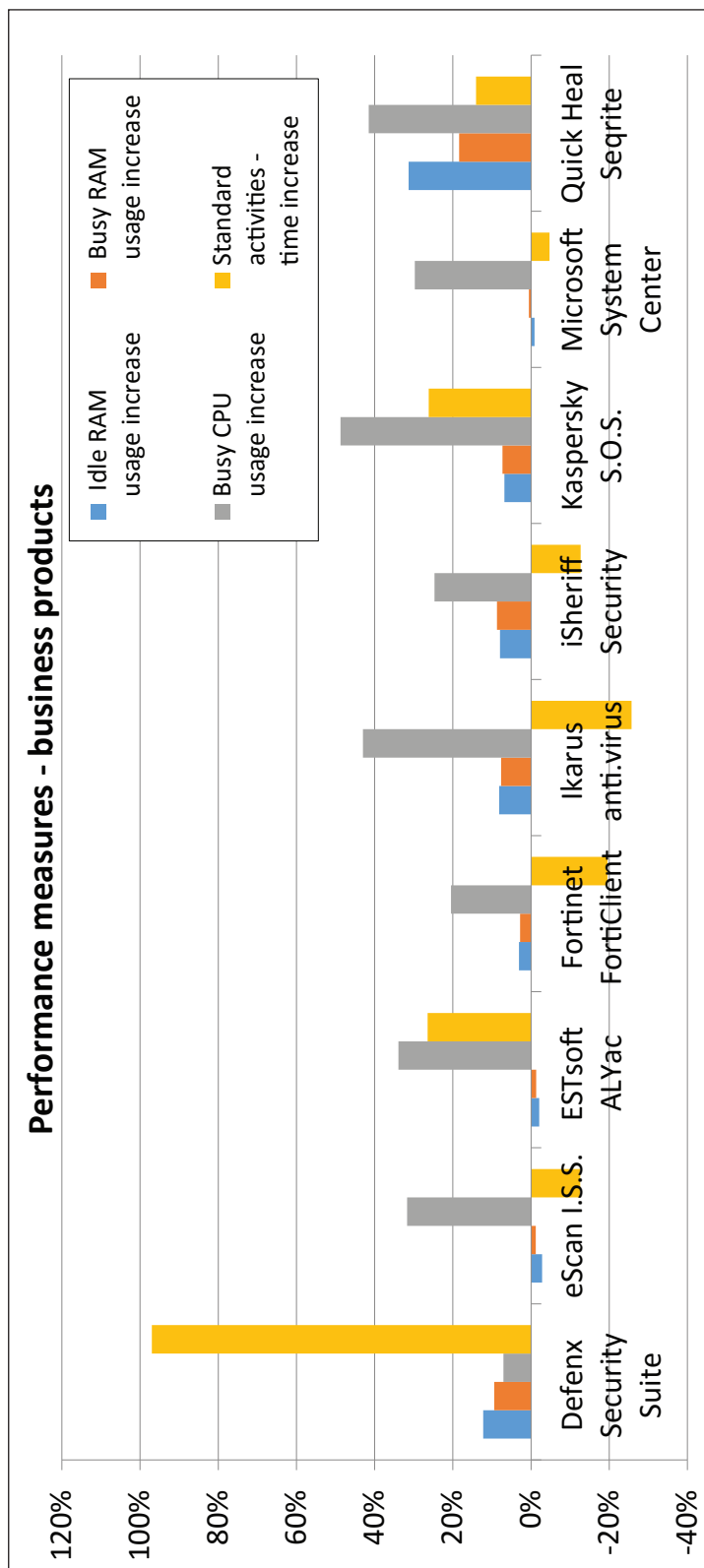
Performance measures - business products	Idle RAM usage increase	Busy RAM usage increase	Busy CPU usage increase	Standard activities - time increase
Defenx Security Suite	12.24%	9.42%	7.08%	96.99%
eScan Internet Security Suite for Windows	-2.82%	-1.21%	31.68%	-12.56%
ESTsoft ALYac	-2.10%	-1.33%	33.93%	26.47%
Fortinet FortiClient	3.09%	2.81%	20.46%	-19.53%
Ikarus anti.virus	8.17%	7.67%	42.99%	-25.72%
iSheriff Security from the Cloud	7.96%	8.71%	24.69%	-12.67%
Kaspersky Small Office Security 4 Personal Computer	6.83%	7.29%	48.73%	26.18%
Microsoft System Center Endpoint Protection	-0.90%	0.54%	29.74%	-4.73%
Quick Heal Seqrite Endpoint Security	31.30%	18.39%	41.51%	14.06%

Reactive and Proactive (RAP) tests - business products	VB100	Reactive		Proactive		Reactive average	Proactive average	Weighted average [‡]
		Set -2*	Set -1*	Set +1 [†]	Set +2 [†]			
Defenx Security Suite		75.3%	74.6%	53.8%	52.8%	74.9%	53.3%	67.7%
eScan Internet Security Suite for Windows		98.2%	97.1%	76.6%	71.4%	97.6%	74.0%	89.7%
ESTsoft ALYac		98.7%	98.3%	74.0%	69.3%	98.5%	71.7%	89.5%
Fortinet FortiClient		98.2%	97.6%	70.5%	65.3%	97.9%	67.9%	87.9%
Ikarus anti.virus		98.4%	98.7%	75.5%	69.2%	98.6%	72.4%	89.8%
iSheriff Security from the Cloud		97.0%	97.0%	76.3%	71.1%	97.0%	73.7%	89.2%
Microsoft System Center Endpoint Protection		94.0%	92.8%	78.5%	78.5%	93.4%	78.5%	88.4%
Quick Heal Seqrite Endpoint Security		95.9%	92.6%	71.1%	68.1%	94.2%	69.6%	86.0%

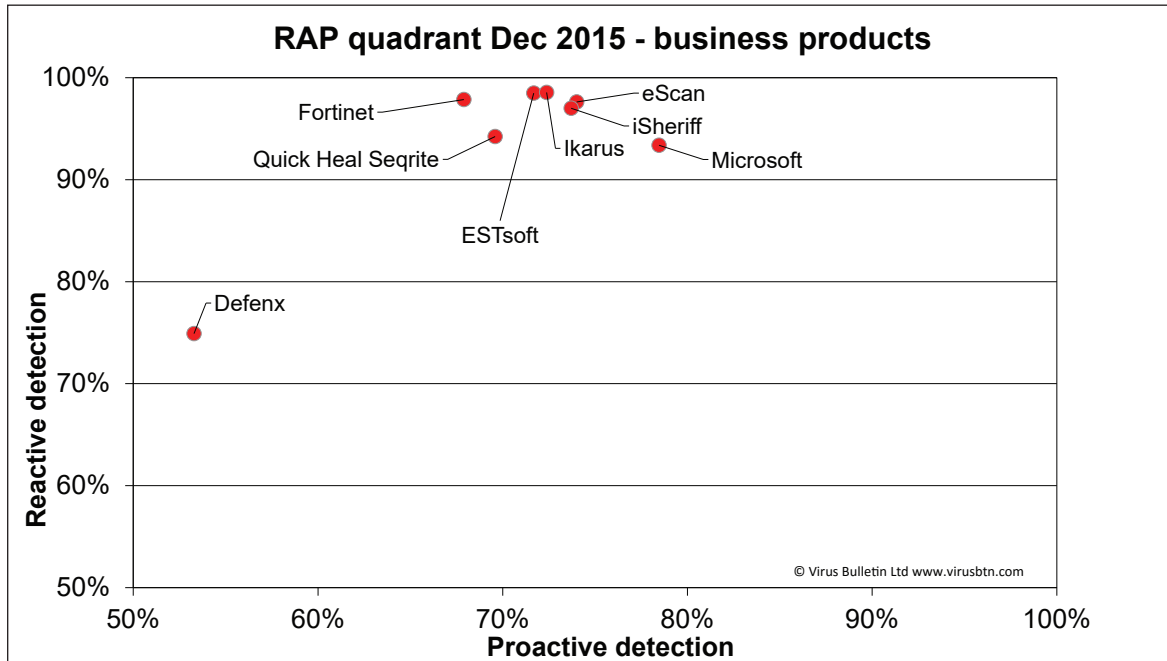
*Set -1 = Samples discovered 1 to 5 days before testing; Set -2 = Samples discovered 6 to 10 days before testing.

[†]Set +1 = Samples discovered 1 to 5 days after updates frozen; Set +2 = Samples discovered 6 to 10 days after updates frozen.

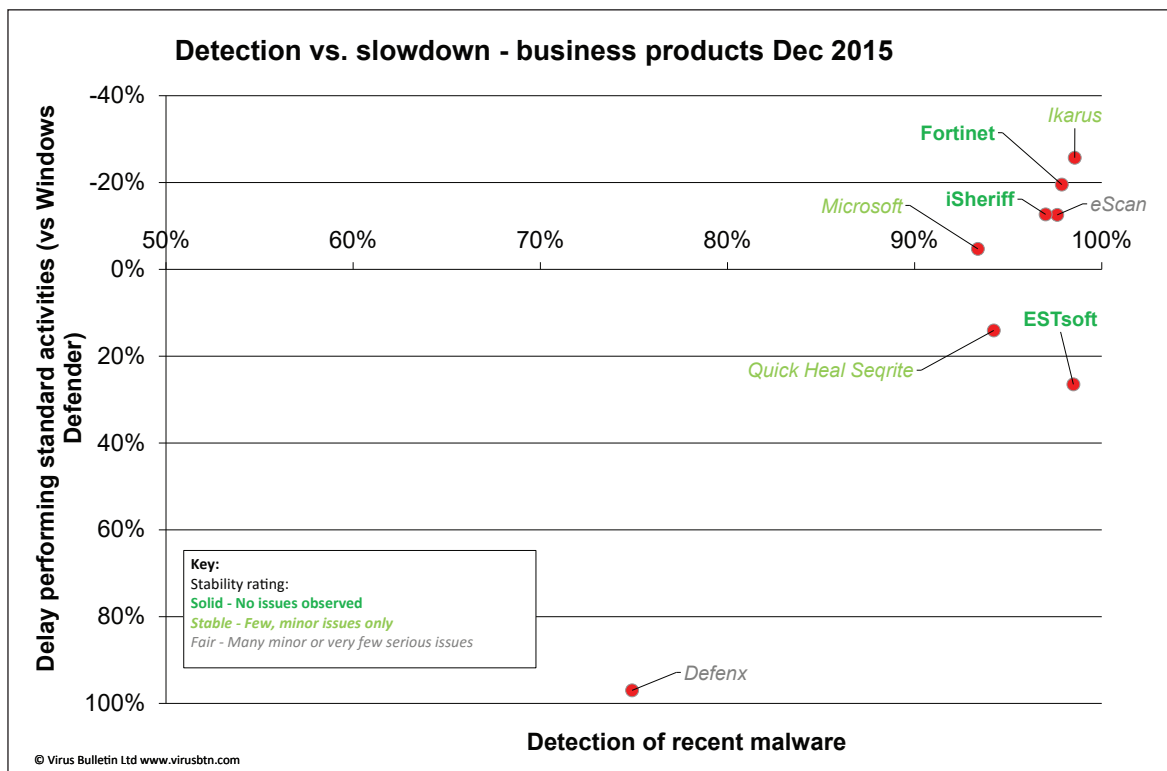
[‡]Weighted average gives equal emphasis to the two reactive weeks and the whole proactive part.



(Please refer to text for full product names.)



(Please refer to text for full product names.)



(Please refer to text for full product names.)

CONSUMER PRODUCTS

Agnitum Outpost Security Suite Pro

Main version: 9.2

Update versions: 4866.?.2041 build 211, build 223, build 229, build 238

Last 6 tests: 5 passed, 0 failed, 1 no entry

Last 12 tests: 10 passed, 0 failed, 2 no entry

ItW on demand: 100.00% **ItW on access:** 100.00%

False positives: 0 **Stability:** Buggy

Agnitum's anti-malware team and technology was acquired by Russian search giant *Yandex* while this test was under way, and is slowly

being retired; remaining users will be pleased with its recent success in our tests, passing all comparatives entered in the last two years and only skipping our annual *Linux* tests. The installation process is somewhat slow, but once complete the usual interface appears with a clean and crisp look, nice clear information and a good set of basic controls.

Stability was somewhat shaky on the new platform, with a handful of incidents which either sparked a reboot or required one to recover from a freeze. Performance impact was not too bad, with resource usage a little above average and our set of tasks significantly slowed down, but less so than we have seen in recent tests.

Detection was somewhat below par but still respectable, and another clean run was recorded in the certification sets, earning *Agnitum* what seems likely to be its last VB100 award.

AhnLab V3 Internet Security

Main version: 9.0.9.7

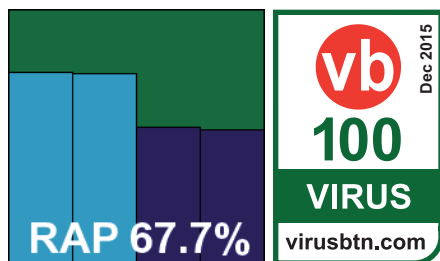
Update versions: build 726/2015.10.20.00, 9.0.10.8/build 774/2015.07.31.00, 9.0.11.1/build 776/2015.11.11.00, 9.0.11.2/build 777/2015.11.21.01

Last 6 tests: 2 passed, 0 failed, 4 no entry

Last 12 tests: 3 passed, 0 failed, 9 no entry

ItW on demand: 100.00% **ItW on access:** 100.00%

False positives: 0 **Stability:** Solid



AhnLab's history in our tests shows a fairly irregular pattern of entries with only a couple in the last year, but passes have been achieved

reliably. This month we have two of the vendor's products on the test bench, starting with the main suite solution. Set-up wasn't too slow considering the distance of our lab from the company's main market in South Korea, and the interface is bright and colourful, adopting the on-trend angular tiled style and providing nice clear information and a decent set of configuration options.

Stability was good, with no problems observed, and performance impact was light too, with minimal use of resources and very little slowdown of our set of activities.

Detection was decent, with just a slight downturn through the RAP sets, and with a clean run through the certification sets *AhnLab* comfortably earns another VB100 award.

AhnLab V3 Lite

Main version: 3.3.0.7

Update versions: N/A, build 670/2105.11.06.00, 2015.11.11.00, 2015.11.21.01

Last 6 tests: 1 passed, 0 failed, 5 no entry

Last 12 tests: 1 passed, 0 failed, 11 no entry

ItW on demand: 100.00% **ItW on access:** 100.00%

False positives: 0 **Stability:** Stable

Our second product from *AhnLab* this month is the 'Lite' edition. Installation was again not too slow, and the GUI looks pretty similar to the full suite with the same clear layout and good set of controls.

Stability was decent, but we did hit some errors running on-demand scans without an Internet connection, meaning we could not gather proactive data for the RAP sets. Performance impact was light, as the product name might suggest, with RAM use low, CPU use below average, and our set of tasks not impeded much at all.

The detection figures we were able to collect showed good rates with cloud connections available, and the core sets were well covered with no issues, earning *AhnLab* a second VB100 award this month.



Avast Free Antivirus 2015

Main version: 10.4.2233

Update versions: 151021-0, 151102-0,
11.1.2241/151110-0, 11.1.2241/151119-0

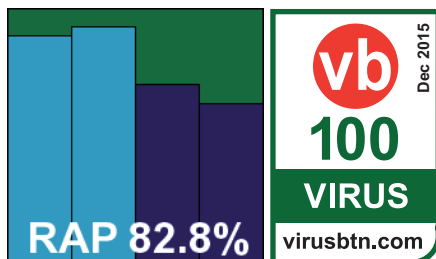
Last 6 tests: 6 passed, 0 failed, 0 no entry

Last 12 tests: 9 passed, 2 failed, 1 no entry

ItW on demand: 100.00% **ItW on access:** 100.00%

False positives: 0 **Stability:** Stable

Avast's products have been regulars in the VB100 tests for many years now, with a strong record of passes and a perfect pass rate in the last



12 months of testing. As usual in our desktop tests, we were provided with the free solution, which took a little time to set up and required a reboot; the interface remains very slick and attractive with good usability and an excellent set of fine-tuning controls provided.

Stability was almost flawless, the rating dented only by a single incident where the update button froze for a short time. It quickly righted itself, but was judged just enough to merit a point. Memory usage was low, CPU use just a shade above this month's average, and our set of tasks was slowed just a little.

Detection was decent, not quite challenging the leaders in the pack but still very respectable, and with the WildList sets well covered and only a few warnings of possible 'archive bombs' in the clean sets, another VB100 award is well deserved by *Avast*.

AVG AntiVirus

Main version: 2016.0.7163

Update versions: 4450/10862, 4450/10934, 4450/10957,
4460/11027

Last 6 tests: 6 passed, 0 failed, 0 no entry

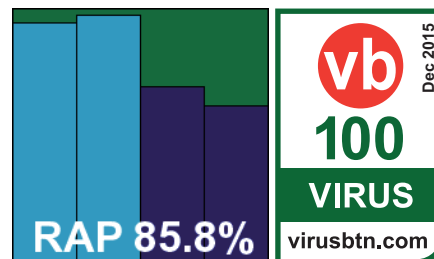
Last 12 tests: 12 passed, 0 failed, 0 no entry

ItW on demand: 100.00% **ItW on access:** 100.00%

False positives: 0 **Stability:** Solid

AVG can boast a clean sweep in the last two years of VB100 testing, with passes in all 12 tests. This month we have the vendor's straight '*AntiVirus*' product, which sets up rather

slowly with a reboot needed, but once done presents the usual dark and moody interface, with plenty of informative text and a good set of configuration options.



Stability was flawless with no issues even under heavy stress, and our performance measures show RAM use to be around average and CPU use a touch high, but our set of tasks completed in good time.

Detection was very strong in the reactive sets, dropping off a little into the proactive sets, but once again the core certification sets were handled impeccably, earning AVG another VB100 award.

Bitdefender Antivirus Plus 2016

Main version: 7.63020

Update versions: 5739736, 7.63213/5729934,
7.63329/5747712, 7.63516/5685444

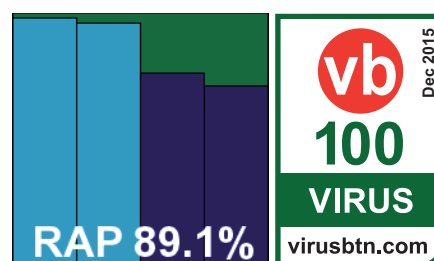
Last 6 tests: 6 passed, 0 failed, 0 no entry

Last 12 tests: 12 passed, 0 failed, 0 no entry

ItW on demand: 100.00% **ItW on access:** 100.00%

False positives: 0 **Stability:** Stable

Bitdefender can also be proud of its VB100 record, with a solid block of passes stretching back more than five years. The 2016 edition takes



several minutes to install, with the process adding a number of components including a 'wallet' browser add-on. Once complete, another dark interface is displayed, brightened by the odd splash of colour. A solid set of configuration options are provided.

Stability was mostly very good indeed, with only a single issue noted: an error thrown during an install attempt. Re-running the installer proved much more successful, and the issue did not recur over several more installs. Performance impact measures show RAM use somewhat higher than most, CPU use low, and our set of tasks blasting

through very quickly – this was one of several products this month that proved faster than our baselines, recorded with *Windows Defender* protecting the system.

Detection was excellent with some very high scores, and with another perfect run through our certification sets, *Bitdefender*'s long run of passes continues unchecked.

BullGuard Antivirus

Main version: 15.1.310.5

Update versions: 7.63007, 16.0.311.1/7.63213, 16.0.311.2/7.63329, 16.0.311.3/7.63516

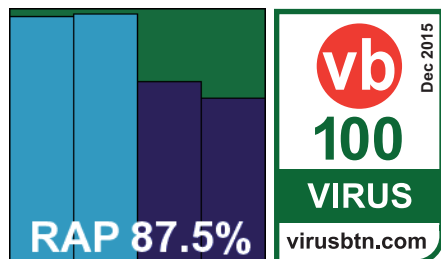
Last 6 tests: 3 passed, 0 failed, 3 no entry

Last 12 tests: 7 passed, 0 failed, 5 no entry

ItW on demand: 100.00% **ItW on access:** 100.00%

False positives: 0 **Stability:** Solid

BullGuard's products only appear in our desktop tests these days, but have been producing very reliable performances for quite some



time. Installation this month was a little slow. The interface makes good use of tiles to provide simple information and easy access to a good range of controls; several sections were greyed-out placeholders for extra modules included with more complete versions of the product.

Stability was rock-solid once again with nothing to report. Performance impact was light with low use of memory and a very short time taken to complete our set of activities.

Detection, aided as usual by the *Bitdefender* engine, proved very strong indeed, and with another good showing in the certification sets, *BullGuard* comfortably makes the grade for another VB100 award.

CYREN Command Anti-Malware

Main version: 5.1.35

Update versions: 5.4.20

Last 6 tests: 1 passed, 4 failed, 1 no entry

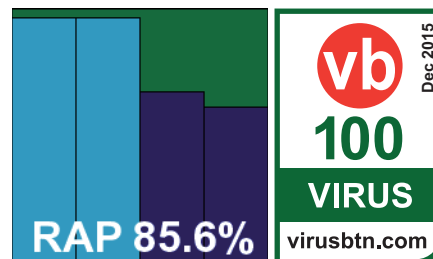
Last 12 tests: 2 passed, 7 failed, 3 no entry

ItW on demand: 100.00% **ItW on access:** 100.00%

False positives: 0 **Stability:** Fair

CYREN's venerable *Command* product has been putting in

some excellent performances of late in terms of detection, with numbers heading steadily upwards, but this has been



tempered by regular issues with false positives, which have meant it has achieved only a few VB100 passes in the last couple of years. The product is very small and light, installing very quickly; the GUI has changed little in many years, providing a decent basic set of configuration options and clear information in a simple style.

Stability proved a little shaky at times, with a crash taking down the interface at one point and another freezing the entire system, requiring a reboot to straighten things out. Performance impact measures showed another rather slow run through our set of activities with processor usage high throughout.

Detection was once again very strong indeed with the cloud enabled, dropping off somewhat without it, and in the certification sets a clean run through the WildList sets was complemented by good handling of the clean sets, earning *CYREN* a much-needed VB100 award.

Emsisoft Anti-Malware

Main version: 10.0.0.5735

Update versions: 10.0.0.5735, 10.0.0.5735, 11.0.0.5911

Stability rating: Fair

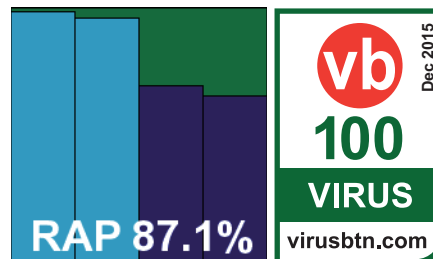
Last 6 tests: 5 passed, 0 failed, 1 no entry

Last 12 tests: 9 passed, 1 failed, 2 no entry

ItW on demand: 100.00% **ItW on access:** 100.00%

False positives: 0 **Stability:** Fair

Emsisoft has managed passes in all VB100 tests entered in the last year, with a strong pass rate going back much longer.



The current version installs somewhat slowly and requires a reboot to complete. The interface is clear and glossy and proved mostly responsive, simple to operate and well stocked with configuration options.

Stability was shaken by a rather odd moment where running a scan seemed to disable the start menu and Cortana; the scan finished successfully, but a restart was needed to get the system back to normal. Performance measures show resource usage on the light side and our set of tasks running through very quickly indeed.

Detection, as usual assisted by the *Bitdefender* engine, was very strong indeed in the reactive sets, dropping away somewhat in the proactive sets as one would expect. The certification sets presented no difficulties, and *Emsisoft* easily earns another VB100 award.

ESET NOD32 Antivirus

Main version: 9.0.318.0

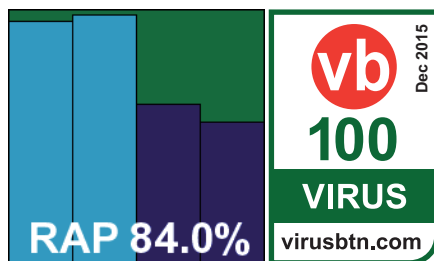
Update versions: 12443, 12503, 12538, 12597

Last 6 tests: 6 passed, 0 failed, 0 no entry

Last 12 tests: 12 passed, 0 failed, 0 no entry

ItW on demand: 100.00% **ItW on access:** 100.00%
False positives: 0 **Stability:** Solid

ESET remains our most reliable performer over the years, with every test entered and passed for a very long time



indeed. The current edition of *NOD32*, version 9, has a pale, washed-out look, adorned as ever with the company's cyborg motif. As is typical, usability was very good, with clear information, and configuration options provided in depth while remaining simple to navigate.

Stability was once again superb, with no problems noted at all, and performance impact was also very light, with just a trace of RAM usage increase, CPU use not excessive, and our set of tasks completing slightly faster than our *Defender* baselines.

Detection was very strong too, dipping somewhat in the proactive sets but excellent in the reactive sets, and with yet another flawless run over the certification sets, *ESET* adds one more VB100 award to its vast collection.

Essentware PCKeeper Antivirus PRO

Main version: 8.3.34.48

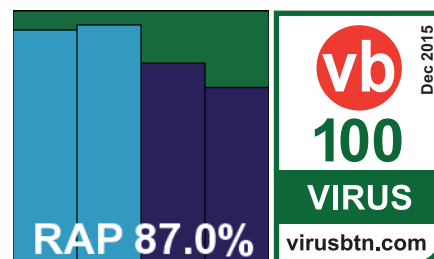
Update versions: 8.12.20.60, 8.3.34.60/8.12.25.78, 8.3.34.64/8.12.26.192, 8.3.34.80/8.12.31.104

Last 6 tests: 1 passed, 0 failed, 5 no entry

Last 12 tests: 2 passed, 0 failed, 10 no entry

ItW on demand: 100.00% **ItW on access:** 100.00%
False positives: 0 **Stability:** Stable

The *PCKeeper* brand has been around for a while but is under its third ownership since its first appearance in our tests a few years



ago, *Zeobit* having passed it on to the *Kromtech Alliance Corporation*, from whom it has now been acquired by *Essentware*. Internally, little seems to have changed so far, with the *Avira* engine still powering the core protection.

Installation was fairly speedy, and the product interface is bright and friendly with a clear, simple layout and a decent basic set of configuration options available. Stability was reasonable, our rating dented by a couple of incidents of the GUI freezing up, at least one of which needed a reboot to clear. Performance figures show a fairly high use of memory, average CPU usage and fairly low impact on our set of activities.

Detection was pretty strong and the certification sets were well handled, earning *Essentware* its first VB100 award, the sixth in total for the *PCKeeper* product line.

G Data Antivirus

Main version: 25.1.0.9

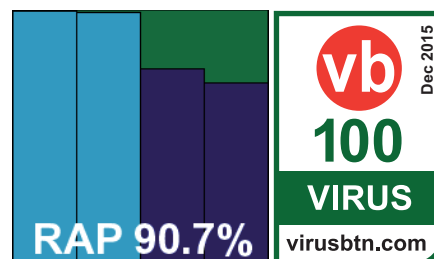
Update versions: AVA 25.3966/GD 25.5768, AVA 25.4201/GD 25.5841, AVA 25.4321/GD 25.5874, AVA 25.4496/GD 25.5929

Last 6 tests: 5 passed, 0 failed, 1 no entry

Last 12 tests: 9 passed, 0 failed, 3 no entry

ItW on demand: 100.00% **ItW on access:** 100.00%
False positives: 0 **Stability:** Fair

G Data's products have a pretty strong history in our tests, with passes in all tests entered in the last two years, and very



few tests missed (usually only our annual *Linux* tests). This month, installation took quite a while, but once complete we were presented with a familiar interface, clean and clear with bold styling, plenty of status information and easy access to a thorough range of configuration options.

Stability was shaken by a single incident during the performance tests where the product complained that its engine was not available, and a more minor issue exporting extra-large logs; both were easily overcome and testing continued. Our performance measures showed memory usage around average, CPU use a little high, and our set of tasks not much affected.

Detection as usual was superb, near-perfect in the reactive sets, and the core certification sets were dealt with similarly well with no issues to report, earning *G Data* another VB100 award.

Inca nProtect Anti-Virus Spyware

Main version: 2015.10.21.01

Update versions: 4.0.0.10007, 2015.11.04.01/4.0.0.10008, N/A, 2015.11.23.01/4.0.0.10008

Last 6 tests: 1 passed, 0 failed, 5 no entry

Last 12 tests: 1 passed, 0 failed, 11 no entry

ItW on demand: 100.00% **ItW on access:** 100.00%
False positives: 0 **Stability:** Buggy

Something of a newcomer to our tests, *Inca's nProtect* has appeared a couple of times before, both back in 2013, and on both occasions it achieved a pass. The 2015 edition takes a little time to set up but presents a very bright and friendly interface, clear and simple with a decent range of controls.

It proved more than a little unstable on *Windows 10* however, with a number of issues including GUI crashes, freezes, errors, and an as-yet undiagnosed problem in the performance tests which saw the system repeatedly restarting; as a result no performance measures were possible.

Detection, supplied by the popular *Bitdefender* engine, proved solid in the reactive sets, with no proactive numbers available thanks to issues with the submission. The core certification sets were dealt with properly though, and a VB100 award is earned by *Inca*.

Iolo System Shield AntiVirus & Anti-Spyware

Main version: 5.0.2.11

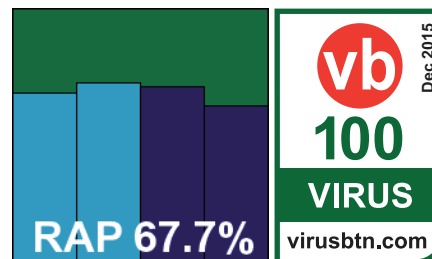
Update versions: N/A

Last 6 tests: 1 passed, 1 failed, 4 no entry

Last 12 tests: 1 passed, 1 failed, 10 no entry

ItW on demand: 100.00% **ItW on access:** 100.00%
False positives: 0 **Stability:** Stable

Iolo first submitted a product to our tests way back in 2007, and we've seen a few bursts of entries since then, but only one in the last



couple of years. Based on the *CYREN* engine, the product has had a few issues with false positives in the past, but has also recorded some decent detection rates. Installation isn't too slow and the interface looks glossy and professional, with a standard layout that has changed little over several years. Configuration options are reasonably thorough, and simple to navigate.

Stability was knocked only by a single issue where the real-time protection refused to switch off, with nothing more serious even under heavy stress. Performance measures showed a fairly serious slowdown of our set of tasks, with high CPU usage throughout.

Detection was a little lacklustre, apparently relying only on local signatures, but remained respectable throughout. The WildList was well covered and there were no problems in the clean sets this month, meaning a VB100 award is earned by *Iolo*.

K7 Internet Security

Main version: 15.1.0277

Update versions: 9.211.17606, 9.212.17732, 9.212.17790, 15.1.0282/9.212.17907

Last 6 tests: 5 passed, 0 failed, 1 no entry

Last 12 tests: 9 passed, 0 failed, 3 no entry

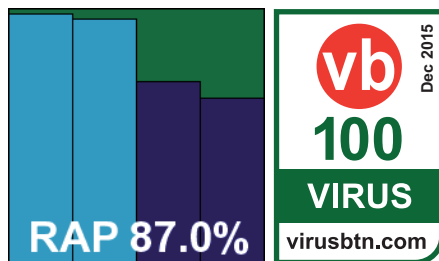
ItW on demand: 100.00% **ItW on access:** 100.00%
False positives: 0 **Stability:** Solid

We have seen products from *K7* in most of our tests of late, with a good record of passes in the last couple of years. As usual, after a nice speedy installation process, the product interface appeared with its rugged military styling, providing a good level of configuration options in a clear and simple manner.

Stability was as tough and reliable as the interface design implies, with no problems observed throughout the testing



period. Performance impact was very light indeed, with all our measures well below this month's average and our set of activities running through faster than the *Windows Defender* baselines.



Detection was very strong in the reactive sets and still pretty decent in the offline proactive sets. The WildList was covered with ease and with no issues in the clean sets a VB100 award is well deserved by *K7*.

Kaspersky Internet Security

Main version: 16.0.0.614

Update versions: 16.0.0.614(c)

Last 6 tests: 4 passed, 0 failed, 2 no entry

Last 12 tests: 9 passed, 0 failed, 3 no entry

ItW on demand: 100.00% **ItW on access:** 100.00%
False positives: 0 **Stability:** Solid

Kaspersky Lab's Internet Security suite solution is the company's consumer submission this month, following a number of appearances over the last couple of years with a pattern of strong performances. Installation was a fairly lengthy affair with multiple components to get in place and update, but once complete we saw the usual highly polished and visually appealing interface, with a wealth of fine-tuning options available under the clear and simple covers.



Stability was impeccable, with no issues even under heavy stress. Our performance measures showed RAM use a shade above the average this month, CPU use fairly low, and our set of activities somewhat delayed by the added security.

Detection figures are not available for the RAP sets, but in the core sets another clean sweep was recorded with no problems to report, and another VB100 award is comfortably earned by *Kaspersky Lab*.

Lavasoft Ad-Aware Free Antivirus +

Main version: 11.8.586.8535

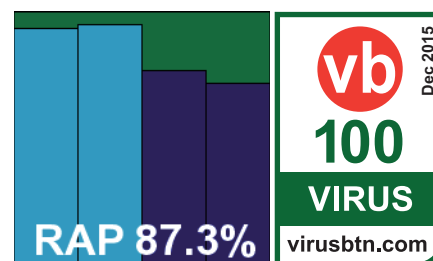
Update versions: 11.8.586.8535, 11.8.586.8535, 11.9.662.8718

Last 6 tests: 3 passed, 0 failed, 3 no entry

Last 12 tests: 6 passed, 0 failed, 6 no entry

ItW on demand: 100.00% **ItW on access:** 100.00%
False positives: 0 **Stability:** Solid

Lavasoft's products tend to appear only in our desktop tests, but when they enter they tend to do well, with passes from all attempts in



the last two years. Initial set-up is a lengthy process with a reboot needed, but the interface is very nicely designed, colourful and friendly with a good supply of status information and easy access to a decent range of controls.

Stability was very good indeed, with no problems to report, and performance was good too; RAM use was a shade higher than average but CPU use was low, and our set of activities ran through in very good time indeed.

Detection, aided by the ubiquitous *Bitdefender* engine, proved very strong once again, and with no problems noted in the certification sets another VB100 award goes to *Lavasoft*.

NANO Antivirus

Main version: 0.30.26.69483

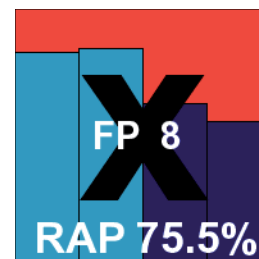
Update versions: 0.14.23.6323, 0.30.26.69973/0.14.23.6392, 0.14.23.6427, 0.30.26.70287/0.14.23.6489

Last 6 tests: 0 passed, 2 failed, 4 no entry

Last 12 tests: 0 passed, 2 failed, 10 no entry

ItW on demand: 100.00% **ItW on access:** 97.68%
False positives: 8 **Stability:** Stable

NANO has appeared on our test bench a few times in the past, putting in some strong performances but so far not quite making the grade for VB100 certification. This month, set-up took a little while but completed smoothly, bringing up a nicely clean and simple interface with clear information and a good set of well laid out controls.



Stability was mostly very good too, although on one occasion we noted the test system slowing to a crawl; a

reboot cleared the blockage successfully and the problem did not occur again, but it was adjudged enough to count as a single point in our rating system. Performance measures show resource usage just a touch above average and a good time taken to complete our set of activities.

Detection was pretty decent too, not quite up with the leaders this month but not too far behind. The WildList was properly handled on demand, but on access a small number of files were ignored – on checking the on-demand logs it seemed as if these had been treated as archive files, and presumably not checked internally on-read. In the clean sets we also found a small number of false alarms, meaning *NANO* still does not quite reach the required standard for VB100 certification, but looks to be edging ever closer.

PC Pitstop PC Matic Home Security

Main version: 1.0.0.57

Update versions: N/A

Last 6 tests: 0 passed, 4 failed, 2 no entry

Last 12 tests: 1 passed, 6 failed, 5 no entry

ItW on demand: 99.29% **ItW on access:** 100.00%

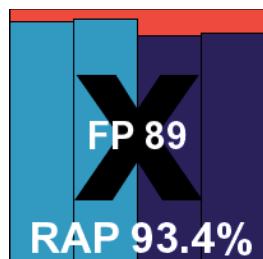
False positives: 89 **Stability:** Fair

PC Pitstop continues to push the envelope with its unusual product, combining whitelisting with more traditional approaches to malware detection and bundling in a range of system monitoring and optimization tools. Of late, the approach has produced some spectacular detection levels, countered, as is so often the case with such approaches, by a fairly high false alarm rate.

Installation of the product is fairly quick and simple, although it takes a few extra minutes for the protection components to finish their preparations and come online. The interface is unusual and occasionally a little challenging for the test team, but with some experience proves more than capable of fulfilling our rather specialized requirements.

Stability was somewhat shaky this month, with a number of error messages observed and the occasional brief freeze-up, but no single problem proved very serious. Performance measures show very light resource usage, memory consumption in particular being lower than our baseline measures with *Windows Defender* active, and our set of activities also ran through very rapidly indeed.

Detection was pretty strong once again, particularly in the



offline proactive sets, and the WildList sets were covered perfectly on access with the whitelisting component enabled. Sadly, the more limited on-demand side missed a selection of items in each run, improving slightly from week to week but never quite reaching 100% detection, and with another scattering of false positives in the clean sets, *PC Pitstop* doesn't quite make the VB100 grade despite those epic detection scores.

Qihoo 360

Main version: 5.0.0.5104(64)

Update versions: N/A

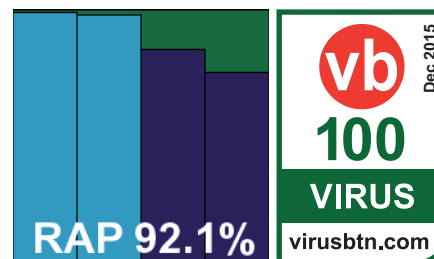
Last 6 tests: 1 passed, 0 failed, 5 no entry

Last 12 tests: 5 passed, 0 failed, 7 no entry

ItW on demand: 100.00% **ItW on access:** 100.00%

False positives: 0 **Stability:** Solid

Returning to our tests after an absence, *Qihoo's* recent test history is a little sparse, but prior to a year or so ago, there was a good rate of passes. Set-



up proved pretty straightforward and zippy. The interface for this month's product was localized in Chinese, but the clear and simple layout made operation fairly intuitive even without linguistic clues.

Stability was perfect, with no issues noted, and performance measures show fairly light resource usage and an excellent time taken to complete our set of tasks. Detection was splendid even without the optional extra engines enabled, and with a clean sweep through the certification sets, *Qihoo* gets back on track with another VB100 award.

Quick Heal Total Security

Main version: 16.00/9.0.24.2 64Bit

Update versions: N/A

Last 6 tests: 4 passed, 0 failed, 2 no entry

Last 12 tests: 6 passed, 1 failed, 5 no entry

ItW on demand: 100.00% **ItW on access:** 100.00%

False positives: 0 **Stability:** Solid

The second product from *Quick Heal* this month is the 'Total Security' version, which has been putting in some good performances in recent tests. This month it took some

time to install its various components, which include parental controls and a 'PC Tuner', as well as the standard anti-malware

provisions. The interface is clear and angular with an interesting green-and-turquoise colour scheme, providing a good set of configuration controls in a sensible layout.

Stability was rock-solid throughout testing, and performance measures showed somewhat elevated resource usage but not too heavy a slowdown of our set of activities.

Detection was pretty good too, with decent scores across the board, and with a clear run through the certification sets a VB100 award is easily earned by *Quick Heal*.

Tencent PC Manager

Main version: 11.0.25992.501

Update versions: N/A

Last 6 tests: 3 passed, 0 failed, 3 no entry

Last 12 tests: 8 passed, 0 failed, 4 no entry

ItW on demand: 100.00% **ItW on access:** 100.00%

False positives: 0 **Stability:** Solid

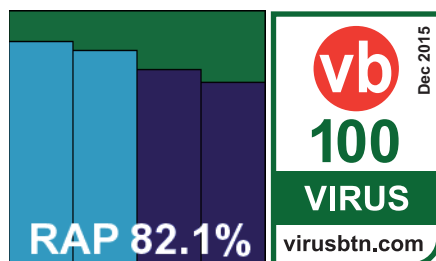
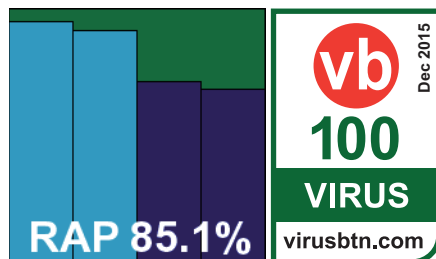
Also absent from some of our recent tests, *Tencent's PC Manager* suite has a good history of strong performances.

Installation

was super-quick, as usual, and the interface extremely clean and simple, but with a respectable range of configuration options available.

Stability was unshaken by all we could throw at it, and performance measures indicated reasonable resource consumption as well as a very good time taken to complete our set of tasks.

Detection, aided by the *Bitdefender* engine, was fairly strong, lagging a little behind the leaders this month, and with another good showing in the certification sets a VB100 award is well deserved by *Tencent*.



Total Defense Internet Security

Main version: 9.0.0.397

Update versions: 3.0.2.1015/2015.10.22.6, 2015.11.5.8, 2015.11.11.13, 2015.11.24.10

Last 6 tests: 3 passed, 0 failed, 3 no entry

Last 12 tests: 4 passed, 0 failed, 8 no entry

ItW on demand: 100.00% **ItW on access:** 100.00%

False positives: 0 **Stability:** Solid

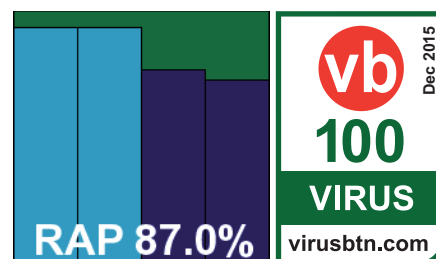
Total Defense's

products tend to appear only in our desktop tests, with a good run of passes in the last few tests entered. Set-up, which includes

numerous components such as browser add-ons, takes a few minutes and requires a reboot to complete. Once up, the interface starts with a very simple layout, with four large tiles leading to the main sections of the suite.

Stability was impeccable, with no problems noted, and performance measures show memory use a little above average, CPU use on the low side and our set of tasks allowed to run through very quickly.

Detection was pretty strong, and the certification sets were dealt with well, earning *Total Defense* another VB100 award.



TrustPort 2015 Antivirus

Main version: 15.0.4.5438

Update versions: N/A

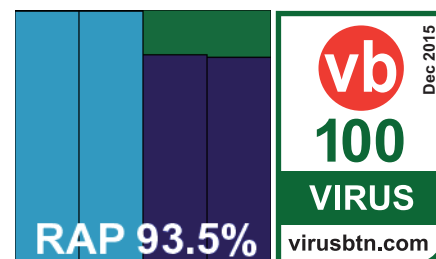
Last 6 tests: 2 passed, 0 failed, 4 no entry

Last 12 tests: 2 passed, 0 failed, 10 no entry

ItW on demand: 100.00% **ItW on access:** 100.00%

False positives: 0 **Stability:** Stable

TrustPort's products claim to be equally well suited to business and consumer use, and this month's entry has been included in the consumer category. This 2015 edition



has been tested several times by the lab team of late, and combining entries from both business and consumer categories gives a rather stronger history than our simplified numbers show. Installation is not too slow, and the interface is crisp and clear with the now commonplace tiled styling put to good use. Configuration options are fairly comprehensive, and simple to operate.

Stability was good for the most part, with just a few fairly minor issues noted, including a problem launching the interface after one install and a non-functioning update button on another – in both cases a reboot resolved things easily. Performance measures show very reasonable resource consumption for a dual-engine product, and only a slight increase in the time taken to complete our set of activities.

Detection, as usual, was superb with near-perfect scores in the reactive sets and very high levels in the offline proactive part of the RAP test. Once again, the WildList was covered perfectly and with no problems in the clean sets either, a VB100 award is easily earned by *TrustPort*.

UNTESTED PRODUCTS

Several additional products were submitted for testing this month but were not included in this report for one reason or another; these included *Norman Security Portal*, *Panda Internet Security* and *100Years Antivirus*.

CONCLUSIONS

Our first visit to *Windows 10* proved something of a trial for the test team with a rather higher than usual level of stability problems to wrestle with, extending the time taken to complete this report considerably. A number of products proved perfectly well settled into the new environment though, and a pleasing number of 'Solid' ratings were awarded, but the time saved gently nudging these products through the testing process was more than outweighed by the time lost heaving and shoving the less well-behaved products past each part of the process.

We saw an excellent pass rate, with very few products failing to meet the basic requirements of VB100 certification, and those that didn't make the grade missed it only by a narrow margin. This ratio may have been somewhat helped by several products not producing enough data to make it to this final report, nevertheless we hope to see this high level of quality maintained in future comparatives.

Next up will be our annual visit to *Linux*, which we hope to get published in the very near future. As ever, we welcome your feedback and comments.

Technical details

All tests were run on identical systems with AMD A6-3670K Quad Core 2.7GHz processors, 4GB DUAL DDR3 1600MHz RAM, dual 500GB and 1TB SATA hard drives and gigabit networking, running *Microsoft Windows 10*, x64 Pro Edition.

Any developers interested in submitting products for VB's comparative reviews, or anyone with any comments or suggestions on the test methodology, should contact vbtest@virusbulletin.com. The current schedule for the publication of VB comparative reviews can be found at <https://www.virusbulletin.com/testing/vb100/vb100-test-schedule/>.

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Certification tests - consumer products	On demand	On access	Clean sets		VB100
	Standard WildList	Standard WildList	FP	Warnings	
Agnitum Outpost Security Suite Pro	100.00%	100.00%			
AhnLab V3 Internet Security	100.00%	100.00%			
AhnLab V3 Lite	100.00%	100.00%			
Avast Free Antivirus 2015	100.00%	100.00%		9	
AVG AntiVirus	100.00%	100.00%			
Bitdefender Antivirus Plus 2016	100.00%	100.00%			
BullGuard Antivirus	100.00%	100.00%			
CYREN Command Anti-Malware	100.00%	100.00%			
Emsisoft Anti-Malware	100.00%	100.00%			
ESET NOD32 Antivirus	100.00%	100.00%			
Essentware PCKeeper Antivirus PRO	100.00%	100.00%			
G Data Antivirus	100.00%	100.00%			
Inca nProtect Anti-Virus Spyware	100.00%	100.00%			
Iolo System Shield AntiVirus & Anti-Spyware	100.00%	100.00%			
K7 Internet Security	100.00%	100.00%			
Kaspersky Internet Security	100.00%	100.00%		2	
Lavasoft Ad-Aware Free Antivirus +	100.00%	100.00%			
NANO Antivirus	100.00%	97.68%	8	1	X
PC Pitstop PC Matic Home Security	99.29%	100.00%	89		X
Qihoo 360	100.00%	100.00%			
Quick Heal Total Security	100.00%	100.00%			
Tencent PC Manager	100.00%	100.00%			
Total Defense Internet Security	100.00%	100.00%			
TrustPort 2015 Antivirus	100.00%	100.00%			






















Product information - consumer products	Install time (m)*	Reboot required	Fully 64-bit	Third-party engine technology †	Stability score	Stability rating
Agnitum Outpost Security Suite Pro	8:00	√	√		15	<i>Buggy</i>
AhnLab V3 Internet Security	5:15	X	√		0	<i>Solid</i>
AhnLab V3 Lite	4:00	X	√		1	<i>Stable</i>
Avast Free Antivirus 2015	6:00	√	√		1	<i>Stable</i>
AVG AntiVirus	8:30	√	X		0	<i>Solid</i>
Bitdefender Antivirus Plus 2016	8:30	X	√		1	<i>Stable</i>
BullGuard Antivirus	8:30	X	√	Bitdefender	0	<i>Solid</i>
CYREN Command Anti-Malware	2:30	X	√		7	<i>Fair</i>
Emsisoft Anti-Malware	15:00	√	X	Bitdefender	10	<i>Fair</i>
ESET NOD32 Antivirus	2:45	X	√		0	<i>Solid</i>
Essentware PCKeeper Antivirus PRO	3:15	X	√	Avira	3	<i>Stable</i>
G Data Antivirus	11:15	√	X	Bitdefender	7	<i>Fair</i>
Inca nProtect Anti-Virus Spyware	8:00	X	X	Bitdefender	17	<i>Buggy</i>
Iolo System Shield AntiVirus & Anti-Spyware	6:30	√	X	CYREN	1	<i>Stable</i>
K7 Internet Security	2:30	X	X		0	<i>Solid</i>
Kaspersky Internet Security	12:00	X	X		0	<i>Solid</i>
Lavasoft Ad-Aware Free Antivirus +	15:00	√	√	Bitdefender	0	<i>Solid</i>
NANO Antivirus	9:30	X	X		1	<i>Stable</i>
PC Pitstop PC Matic Home Security	6:30	X	X	ThreatTrack	6	<i>Fair</i>
Qihoo 360	4:45	X	√	[Avira, Bitdefender]	0	<i>Solid</i>
Quick Heal Total Security	21:45	X	√		0	<i>Solid</i>
Tencent PC Manager	1:00	X	X	Bitdefender	0	<i>Solid</i>
Total Defense Internet Security	6:30	√	√	Bitdefender	0	<i>Solid</i>
TrustPort 2015 Antivirus	6:30	X	X	AVG, Bitdefender	3	<i>Stable</i>

0 = Solid 0.1 – 4.9 = Stable 5 – 14.9 = Fair 15 – 29.9 = Buggy 30+ = Flaky

* Install time includes initial updates and time to enable on-access protection (assuming reasonable typing speed and familiarity with product operation).

† Only records presence of third-party scanning engines, most products will include additional in-house technologies.

Performance measures - consumer products	Idle RAM usage increase	Busy RAM usage increase	Busy CPU usage increase	Standard activities - time increase
Agnitum Outpost Security Suite Pro	13.05%	12.57%	38.49%	46.55%
AhnLab V3 Internet Security	2.24%	1.67%	19.70%	11.00%
AhnLab V3 Lite	4.06%	4.68%	17.38%	12.99%
Avast Free Antivirus 2015	2.79%	4.10%	30.43%	27.18%
AVG AntiVirus	7.49%	7.87%	48.82%	7.97%
Bitdefender Antivirus Plus 2016	13.72%	15.48%	18.23%	-12.95%
BullGuard Antivirus	4.02%	7.87%	20.61%	1.36%
CYREN Command Anti-Malware	-5.41%	-4.83%	55.00%	100.58%
Emsisoft Anti-Malware	7.25%	10.14%	23.63%	-8.57%
ESET NOD32 Antivirus	2.77%	1.48%	29.52%	-11.95%
Essentware PCKeeper Antivirus PRO	18.98%	20.96%	19.86%	9.46%
G Data Antivirus	8.43%	7.24%	42.87%	9.68%
Inca nProtect Anti-Virus Spyware	N/A	N/A	N/A	N/A
Iolo System Shield AntiVirus & Anti-Spyware	1.67%	4.18%	74.27%	143.44%
K7 Internet Security	3.69%	9.41%	15.20%	-6.21%
Kaspersky Internet Security	10.52%	9.53%	15.03%	41.23%
Lavasoft Ad-Aware Free Antivirus +	13.52%	15.56%	21.69%	-2.53%
NANO Antivirus	9.00%	10.08%	38.23%	6.49%
PC Pitstop PC Matic Home Security	0.86%	1.12%	-24.19%	-2.55%
Qihoo 360	4.11%	6.45%	20.64%	-44.76%
Quick Heal Total Security	20.18%	15.42%	35.38%	18.94%
Tencent PC Manager	11.27%	13.10%	20.41%	-13.53%
Total Defense Internet Security	11.57%	12.28%	16.31%	-11.28%
TrustPort 2015 Antivirus	11.18%	13.91%	24.34%	5.88%

Reactive and Proactive (RAP) tests - consumer products	VB100	Reactive		Proactive		Reactive average	Proactive average	Weighted average [‡]
		Set -2*	Set -1*	Set +1 [†]	Set +2 [†]			
Agnitum Outpost Security Suite Pro		75.2%	74.6%	53.8%	52.8%	74.9%	53.3%	67.7%
AhnLab V3 Internet Security		91.7%	89.8%	81.9%	75.0%	90.8%	78.5%	86.7%
AhnLab V3 Lite		91.8%	93.0%	N/A	N/A	92.4%	N/A	N/A
Avast Free Antivirus 2015		89.4%	92.6%	70.3%	62.7%	91.0%	66.5%	82.8%
AVG AntiVirus		94.4%	97.5%	69.1%	61.8%	95.9%	65.5%	85.8%
Bitdefender Antivirus Plus 2016		97.7%	95.9%	76.3%	71.1%	96.8%	73.7%	89.1%
BullGuard Antivirus		96.8%	97.6%	71.5%	64.7%	97.2%	68.1%	87.5%
CYREN Command Anti-Malware		96.1%	96.4%	67.2%	61.2%	96.2%	64.2%	85.6%
Emsisoft Anti-Malware		98.1%	95.9%	69.4%	65.3%	97.0%	67.4%	87.1%
ESET NOD32 Antivirus		95.1%	97.7%	62.8%	55.7%	96.4%	59.3%	84.0%
Essentware PCKeeper Antivirus PRO		92.2%	94.4%	79.2%	69.8%	93.3%	74.5%	87.0%
G Data Antivirus		99.5%	98.8%	76.8%	71.3%	99.1%	74.0%	90.7%
Inca nProtect Anti-Virus Spyware		98.5%	98.0%	N/A	N/A	98.3%	N/A	N/A
Iolo System Shield AntiVirus & Anti-Spyware		66.8%	70.8%	69.1%	61.8%	68.8%	65.5%	67.7%
K7 Internet Security		97.5%	95.5%	71.5%	64.7%	96.5%	68.1%	87.0%
Lavasoft Ad-Aware Free Antivirus +		93.1%	94.7%	76.9%	71.6%	93.9%	74.2%	87.3%
NANO Antivirus	X	82.7%	84.5%	62.8%	55.7%	83.6%	59.3%	75.5%
PC Pitstop PC Matic Home Security	X	94.8%	95.7%	89.3%	90.3%	95.2%	89.8%	93.4%
Qihoo 360		98.9%	97.9%	84.0%	75.0%	98.4%	79.5%	92.1%
Quick Heal Total Security		94.7%	91.0%	71.1%	68.1%	92.9%	69.6%	85.1%
Tencent PC Manager		87.8%	84.1%	76.9%	71.9%	85.9%	74.4%	82.1%
Total Defense Internet Security		93.3%	93.0%	76.7%	72.8%	93.1%	74.7%	87.0%
TrustPort 2015 Antivirus		99.4%	99.4%	82.1%	81.5%	99.4%	81.8%	93.5%

*Set -1 = Samples discovered 1 to 5 days before testing; Set -2 = Samples discovered 6 to 10 days before testing.

[†]Set +1 = Samples discovered 1 to 5 days after updates frozen; Set +2 = Samples discovered 6 to 10 days after updates frozen.

[‡]Weighted average gives equal emphasis to the two reactive weeks and the whole proactive part.

Archive scanning - consumer products		ACE	CAB	EXE-RAR	EXE-ZIP	JAR	LZH	RAR	TGZ	ZIP	7z	TBZ2	ZIPX	EXT*
Agnitum Outpost	OD	√	√	√	√	√	X	√	5	√	X	5	X	√
	OA	X	X	X	X	X	X	X	X	X	X	X	X	√
AhnLab V3 I.S.	OD	1	5	1	1	5	X	1	2	1	1	1	1	√
	OA	X	X	X	X	X	X	X	X	X	X	X	X	X
AhnLab V3 Lite	OD	X	X	1	X	X	X	X	X	X	1	X	X	√
	OA	X	X	X	X	X	X	X	X	X	X	X	X	X
Avast Free Antivirus 2015	OD	X	X	√	√	X	X	X	√	X	√	√	√	√
	OA	X	X	1/√	X/√	X	X	X	X/√	X	X/√	X/√	X/√	X/√
AVG AntiVirus	OD	√	√	√	√	√	√	√	√	√	√	√	√	√
	OA	X	X	7	8	X	X	X	X	X	X	X	X	√
Bitdefender Antivirus Plus	OD	√	√	6	7	√	√	√	7	√	√	7	√	√
	OA	X/2	X/2	X/1	X/1	1/2	X/3	X/2	X/1	1/2	X/2	X/1	1/2	√
BullGuard Antivirus	OD	√	√	√	√	√	√	√	√	√	√	√	√	√
	OA	X	X	X	X	1	X	X	X	1	X	X	1	√
CYREN Command	OD	5	5	5	5	5	√	5	2	5	2	X	5	√
	OA	2/4	2/4	2/4	2/4	1/4	√	2/4	1/2	2/4	1	1/2	2/4	√
Emsisoft Anti-Malware	OD	√	√	8	8	√	√	√	8	√	√	8	√	√
	OA	X	X	X	X	1	X	X	X	1	X	X	X/1	X/√
ESET NOD32 Antivirus	OD	√	√	√	√	√	√	√	5	√	√	5	√	√
	OA	X	X	X	X	X	X	X	X	X	X	X	X	√
Essentware PCKeeper	OD	√	√	5	5	7	9	√	7	8	8	6	9	√
	OA	1	1	1	1	1	1	1	X	1	1	X	1	√
G Data Antivirus	OD	√	√	√	√	√	√	√	8	√	√	8	9	√
	OA	3	2	√	√	2	3	3	1	2	2	1	2	√

Key:

√ - Detection of EICAR test file up to ten levels of nesting

X - No detection of EICAR test file

X/√ - default settings/all files

(Please refer to text for full product names.)

1-9 - Detection of EICAR test file up to specified nesting level

If just z-exe detection in ext, then X

*Detection of EICAR test file with randomly chosen file extension

Archive scanning - consumer products contd.		ACE	CAB	EXE- RAR	EXE- ZIP	JAR	LZH	RAR	TGZ	ZIP	7z	TBZ2	ZIPX	EXT*
Inca nProtect	OD	√	√	√	√	√	√	√	√	√	√	√	√	√
	OA	X	X	√	√	√	X	X	√	X	X	X	√	√
Iolo System Shield	OD	1/√	1/√	1/√	1/√	1/√	√	1/√	X/√	1/√	1/√	X/√	1/√	√
	OA	5	5	5	5	5	√	5	2	5	1	2	5	√
K7 Internet Security	OD	1	1	1	1	1	X	1	X	1	1	X	1	√
	OA	X	X	X	X	X	X	X	X	X	X	X	X	√
Kaspersky I.S.	OD	√	√	√	√	√	√	√	√	√	√	√	√	√
	OA	X	X	1	1	X	X	X	X	X	X	X	X	√
Lavasoft Ad-Aware	OD	√	√	8	8	√	√	√	8	√	√	8	√	√
	OA	X/√	X/√	X/8	X/8	1/√	X/√	X/√	X/8	1/√	X/√	X/8	1/√	√
NANO Antivirus	OD	8	8	4	4	8	X	8	4	8	8	3	8	√
	OA	X	X	X	X	X	X	X	X	X	X	X	X	√
PC Pitstop PC Matic	OD	√	√	√	√	√	X	√	X	√	√	X	1	√
	OA	X	X	8	5	X	X	X	X	X	X	X	X	√
Qihoo 360	OD	√	√	√	√	√	√	√	√	√	√	√	√	√
	OA	X	X	X	X	X	X	X	X	1	X	X	X	X
Quick Heal Total Security	OD	2/5	X	2	2	3/5	X	2/5	X	3/5	2/5	X	X	√
	OA	X	X	X	X	2	X	X	X	2	X	X	X	√
Tencent PC Manager	OD	√	√	7	7	√	√	√	7	√	√	7	√	√
	OA	X	X	X	X	X	X	X	X	X	X	X	X	√
Total Defense I.S.	OD	3	X	X	4	5	3	√	X	9	X	X	6	√
	OA	X/√	X/√	X/5	X/5	1/√	X/√	X/√	X/5	1/√	X/√	X/6	1/√	√
TrustPort Antivirus	OD	√	√	√	√	√	√	√	√	√	√	√	√	√
	OA	X/√	X/√	7/√	8/√	1/√	X/√	X/√	X/√	1/√	X/√	X/√	1/√	X/√

Key:

√ - Detection of EICAR test file up to ten levels of nesting

X - No detection of EICAR test file

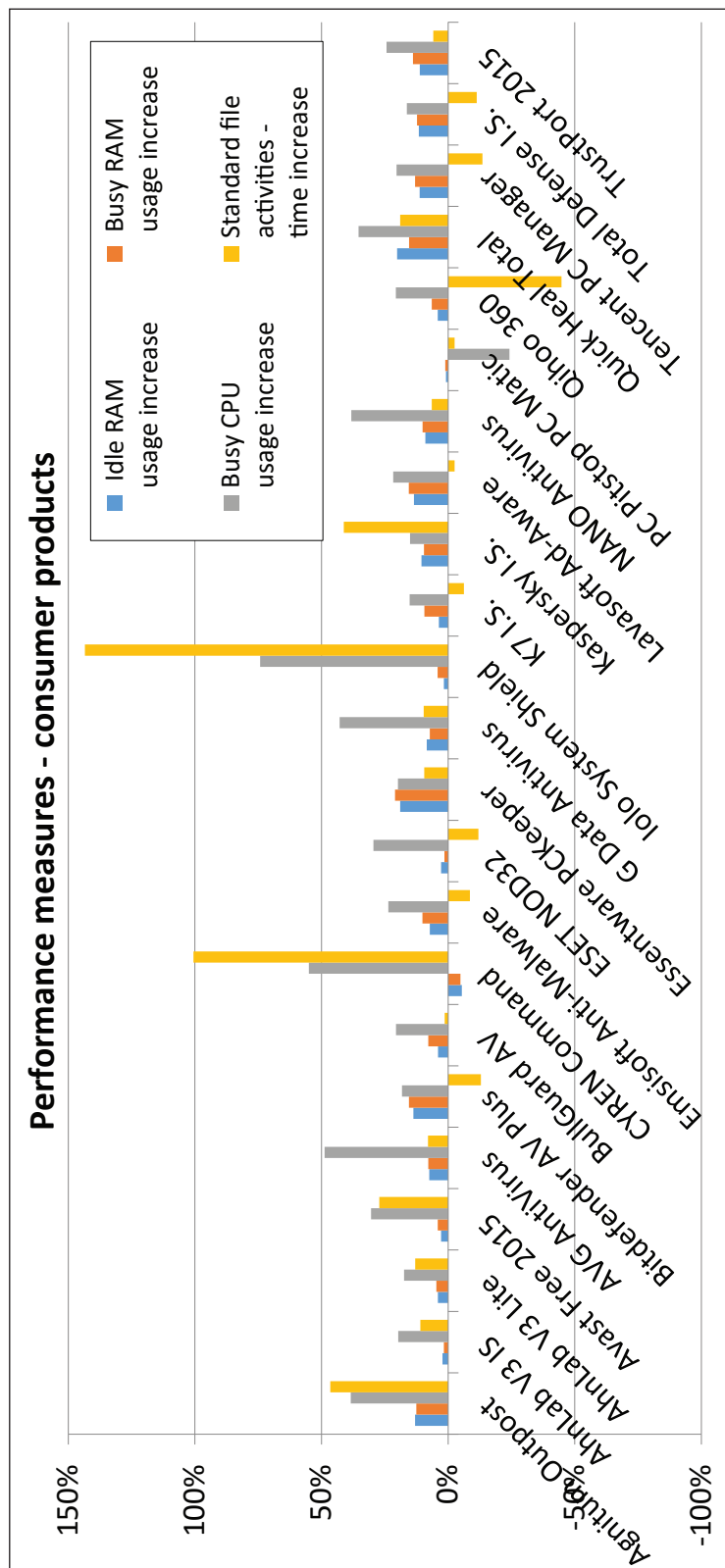
X/√ - default settings/all files

(Please refer to text for full product names.)

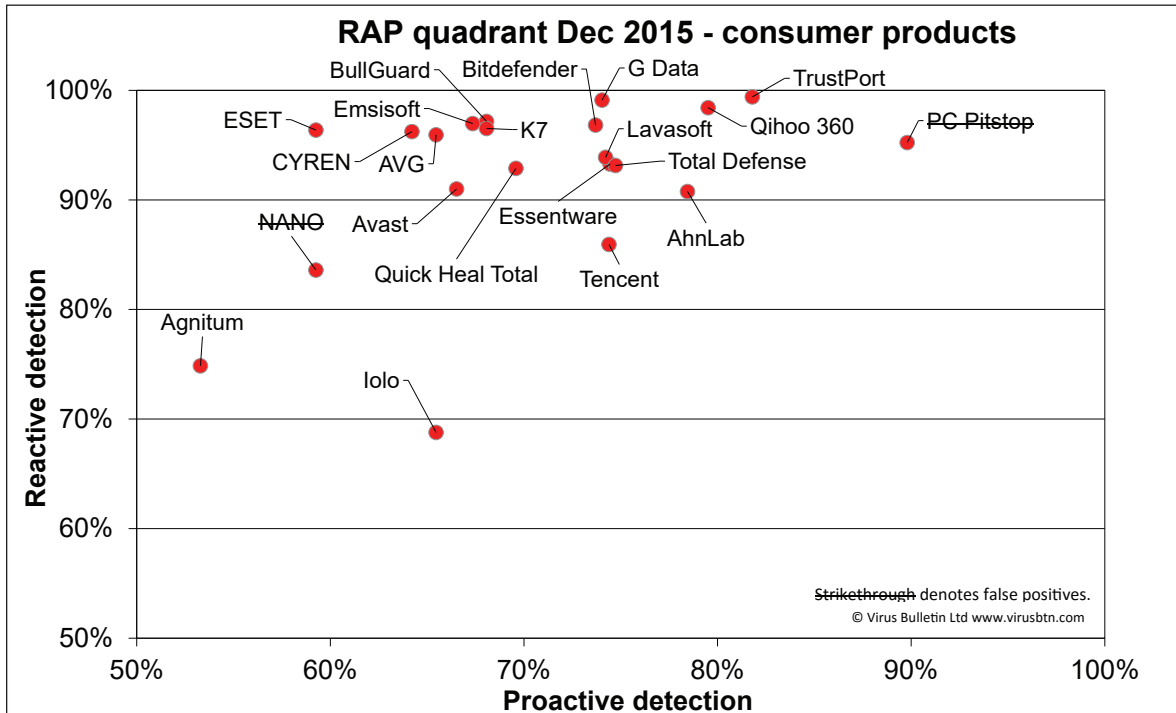
1-9 - Detection of EICAR test file up to specified nesting level

If just z-exe detection in ext, then X

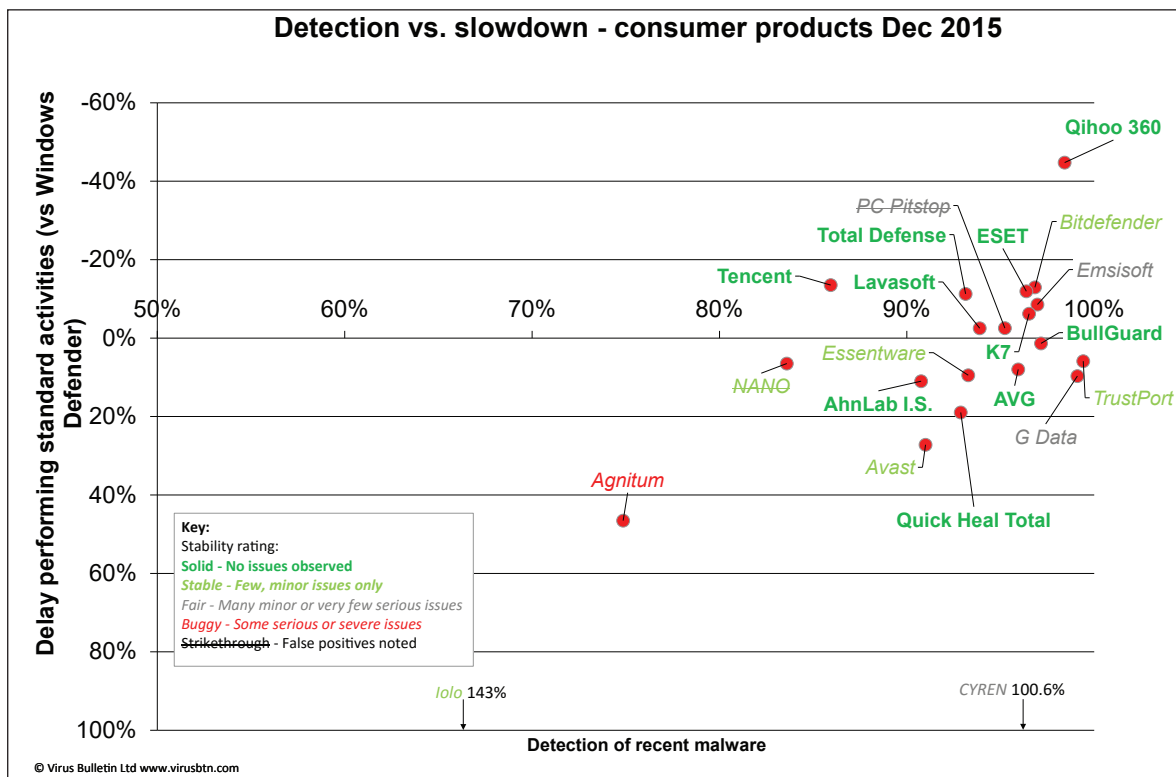
* Detection of EICAR test file with randomly chosen file extension



(Please refer to text for full product names.)



(Please refer to text for full product names.)



(Please refer to text for full product names.)