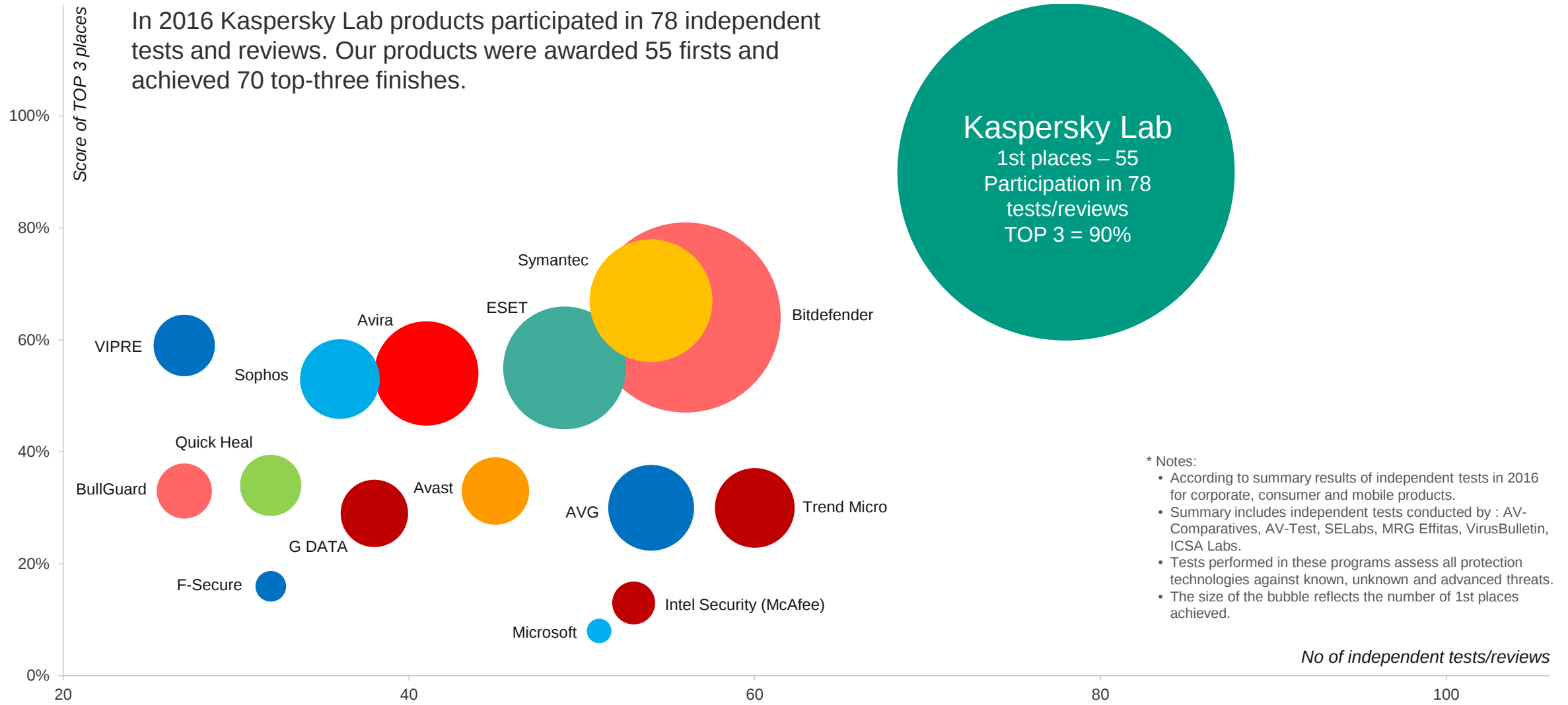


MOST TESTED. MOST AWARDED. KASPERSKY LAB PROTECTION.*



2016 TOP3 METRIC DESCRIPTION

The TOP3 metric reflects the percentage of times a vendor gained a top-three place in independent tests within a reported period (a calendar year).

Among the security vendors participating in the TOP3 measurements are: Avast, AVG, Avira, BitDefender, BullGuard, ESET, F-Secure, G DATA, Intel Security (McAfee), Kaspersky Lab, Microsoft, Panda, Sophos, Symantec, Trend Micro, and Quick Heal. A complete list of participating vendors appears at the end of this document.

Only those who participated in 35% or more of the tests have their results represented in the chart.

Participation in any test affects two counters for each vendor: TOP3 and Participation.

1. Every time a vendor ranks in the first three places or wins an award in a test, a TOP3 counter is awarded incrementally. Counters are not increased for places outside the top three. In cases where several vendors share the same place in a test, the next vendor's place is calculated as "number of higher ranked vendors + 1". For instance, 1,2,2,4 is possible, but 1,2,2,3 is not. It means that in the sequence "1,2,2,4" only the three first vendors get their TOP3 counters incremented. There is an exception for tests with 'levels' as a final result. In this case, several vendors can receive 'Level1', 'Level2', etc., with the three first levels incrementing the vendor's Participation counter in TOP3. Individual products can independently and separately increment a vendor's TOP3 counter.
2. A vendor's participation counter is incremented each time one of its products participates in a test/review/overview (regardless of the final result).

The final result (TOP3 score) is calculated by dividing the number of TOP3 counters by the number of vendor's participation counters to give an overall percentage placement.

The deadline for submitting scores attained in 2016 was February, 1st 2017, with no option to add any test/review after this date.

	No of tests entered	No of TOP3 places	Score of TOP3 places (%)	No of 1 st places
Kaspersky Lab	78	70	90%	55
Symantec	54	36	67%	20
Bitdefender	56	36	64%	31
ESET	49	27	55%	20
Avira	41	22	54%	17
Sophos	36	19	53%	13
Trend Micro	60	18	30%	13
AVG	54	16	30%	14
VIPRE	27	16	59%	10
Avast	45	15	33%	11
G Data	38	11	29%	11
Quick Heal	32	11	34%	10
BullGuard	27	9	33%	9
Intel Security (McAfee)	53	7	13%	7
F-Secure	32	5	16%	5
Microsoft	51	4	8%	4

2016 TOP3 METRIC DESCRIPTION

These tests were performed against various types of malware, including advanced threats as well as false positives

SPECIALIZED THREATS

RANSOMWARE

- MRG-Effitas. 360 Degree Assessment & Certification
- MRG-Effitas. In-the-wild Ransomware Protection Comparative Analysis
- SELabs. Enterprise Anti-Virus Protection Test
- SELabs. Home Anti-Virus Protection Test
- SELabs. Small Business Anti-Virus Protection Test
- AV-Test. Bi-Monthly Certification Consumer and Business
- AV-Comparatives. Whole Product Dynamic "Real-World"
- AV-Comparatives. Online File Detection Test

EXPLOITS

- SELabs. Enterprise Anti-Virus Protection Test
- SELabs. Home Anti-Virus Protection Test
- SELabs. Small Business Anti-Virus Protection Test
- Av-Comparatives. Business Security Test

FINANCIAL MALWARE

- MRG-Effitas. Online Banking/Browser Security certification
- MRG-Effitas. 360 Degree Assessment & Certification

APT

- ICSA. Advanced Threat Detection Certification

PHISHING

- AV-Comparatives. Anti-Phishing Test

DEDICATED TESTS

ANDROID TESTS

- AV-Comparatives. Mobile Security Test & Review
- AV-Test. Android Mobile Security Products Test

MAC TESTS

- AV-Comparatives. Mac Security Test & Review
- AV-Test. Mac Detection & Performance test

REMEDATION TESTS

- AV-Comparatives. Malware Removal Test

- AV-Test. Mac Detection & Performance test

STORAGE PROTECTION

- AV-Comparatives. Comparison of Anti-Malware Software for Storage

REAL-WORLD TESTS

- AV-Comparatives. Whole Product Dynamic "Real-World" Protection Test
- AV-Test. Bi-Monthly Certification Consumer and Business
- SELabs. Enterprise Anti-Virus Protection Test
- SELabs. Home Anti-Virus Protection Test
- SELabs. Small Business Anti-Virus Protection Test

TESTS ON A STATIC COLLECTION

- AV-Comparatives. Online File Detection Test
- Virus Bulletin. VB100 Comparative Review and Certification

FALSE POSITIVES (FP)

- All the tests mentioned above include FP measurements.

2016 TOP3 METRIC DESCRIPTION

The following tests were performed in 2016 and used to calculate the metric

AV-COMPARATIVES

• Product of the Year

This award is given to the vendor who gained the highest awards in an entire year's testing cycle, involving the following tests: Online File Detection Test (FDT) + Whole Product Dynamic Test (WPDT) + Malware Removal Test + Performance Test. According to AV-Comparatives' rules, in cases where two or more vendors receive the same maximum score, the award goes to the vendor who has never received it before, or who received it the longest time ago. The seal is counted as a first place in the TOP3 metric.

The vendors who are nominated, but do not receive the 'Product of the Year' award, are given the 'Outstanding Product' rank, which counts as a second place in TOP3 metrics.

The vendors who achieved at least 90 points across the entire test cycle are awarded the 'Top Rated' rank, which counts as a third place in the TOP3 metric. Vendors that fail to score any points in at least one of the tests are excluded.

At the end of the year, medals ('Gold', 'Silver', 'Bronze') are given for the best results in specific tests: FDT, WPDT, Performance, Malware Removal. As these results have already contributed to overall TOP3 metrics, the medals themselves do not count towards it.

Since 2015, only awards can contribute towards TOP3 counters in AV-Comparatives tests.

• Online File Detection Test

The test consists of two parts: Detection Rate and False Positives. Products receive the following awards: "Advanced+", "Advanced", "Standard" or "Tested".

Only products with "Advanced+" gain an increment of TOP3 counters for a vendor.

• WPDT (Whole Product Dynamic "Real-World" Protection Test)

The test lasts for five months using mainly current, visible, and relevant malicious websites/malware. Because all product components contribute a significant role in overall protection, results achieved in this category are a good indicator of anti-malware product efficiency in real-world scenarios.

Products receive the following awards: "Advanced+", "Advanced", "Standard" or "Tested". Only products with "Advanced+" gain an increment of TOP3 counters for a vendor.

• Anti-Phishing Test

This test simulates a common situation: users relying on the anti-phishing protection provided by their security products while browsing the web.

Only products which were certified gain an increment of TOP3 counters for corresponding vendors.

• Mobile Security Test & Review

This review includes a malware protection test along with an overview of additional features (theft protection, battery consumption, etc.).

Products achieving the highest three places, based on Protection Rate and False Positives, gain an increment of TOP3 counters for their vendors.

• Mac Security Test & Review

This review evaluates various Mac protection products against a product feature list and measures protection levels in categories such as Detection Rate on separate Mac- & Windows-related malware sets and a False Positive level.

Products placed in the highest three positions based on Protection Rate gain an increment of TOP3 counters for their corresponding vendors.

• Malware Removal Test

This eight-month-long test focuses on the malware removal/cleaning capabilities of security products, assessing their ability to disinfect a system successfully i.e. to remove malware and its leftovers from an already infected/compromised system.

Products receive the following awards: "Advanced+", "Advanced", "Standard" or "Tested". Only products with "Advanced+" gain an increment of TOP3 counters for their corresponding vendor.

• Business Security Test

This test evaluates the protection efficiency of various business security products, as well as the ones which call themselves 'next gen' solutions, in categories such as Detection Rate on different malware sets, websites, exploits and a False Positive level.

Only products which were certified, gain an increment of TOP3 counters for corresponding vendors.

2016 TOP3 METRIC DESCRIPTION

- **Comparison of Anti-Malware Software for Storage**

This test aims to measure the anti-malware protection level and performance capabilities of solutions dedicated to securing network array storage appliances and their data. The Detection rate is compared with the same results for an Online File Detection Test executed in parallel, and is evaluated in the same way.

Only products with a Detection Rate resulting in an “Advanced+” award gain an increment of TOP3 counters for the corresponding vendor.

- **RTTL Certification Test**

This test evaluates various protection products against a Real-Time Threat List (RTTL) of malware samples, and validates their ability to protect a system in real time.

Only products which were certified gain an increment of TOP3 counters for corresponding vendors.

AV-Test

- **Best Protection Award Consumer and Business**

This award is given for perfect results in the Protection category over the course of an entire year, during which bi-monthly certification takes place. Consumer and Business related products are assessed separately.

Only products that receive this award gain a TOP3 counter increment for their vendor.

- **Best Performance Award Consumer and Business**

This award is given for perfect results in the Performance category over the course of an entire year, during which bi-monthly certification takes place. Consumer and Business related products are assessed separately.

Only products, that receive this award gain a TOP3 counter increment for their vendor.

- **Best Usability Award Consumer and Business**

This award is given for perfect results in the Usability category over the course of an entire year, during which bi-monthly certification takes place. Consumer and Business related products are assessed separately.

Only products that receive this award gain a TOP3 counter increment for their vendor.

- **Best Repair Award**

This award is given for perfect results in the Repair category over the course of an entire year, for integrated and dedicated Consumer products separately.

Only products that receive this award gain a TOP3 counter increment for their vendor.

- **Best Android Security**

This award is given for perfect results in Android security testing over the course of a whole year.

Only products that receive this award gain a TOP3 counter increment for the corresponding vendor.

- **Bi-Monthly Certification Consumer and Business**

This year-long certification series consists of Consumer and Business segments, each divided into six separate, two-month-long tests. All participating products are evaluated and receive points in Protection, Performance and Usability categories. The sum of the points gained in each category makes up the overall score; products placed in the top three have their TOP3 counters incremented.

- **Android Mobile Security Products Test**

This year-long certification series is divided into six separate, month-long tests. All participating products are evaluated and receive points in categories of Protection, Usability (combined results in Performance and FalsePositives) and Features.

The sum of the points gained in each category makes up the overall score; products placed in the top three have their TOP3 counters incremented.

- **Parental Control Test for Android & Windows**

This test evaluates the efficiency of security products in preventing children from visiting unwanted websites. Only products that were certified gain an increment of TOP3 counters for their corresponding vendors.

- **Innovation award**

This award is presented for innovative initiatives and contributions to developments in information security.

Only products that receive this award gain a TOP3 counter increment for their vendor.

2016 TOP3 METRIC DESCRIPTION

- **Business Security Test**

This test evaluates the protection efficiency of various business security products, as well as those which call themselves 'next gen' solutions, in categories such as Detection Rate on different malware sets, websites, exploits and a False Positive level.

Only products, which were certified, gain an increment of TOP3 counters for corresponding vendors.

- **Mac Detection & Performance test**

This test evaluates various security protection products for Mac OS X. Based on Detection Rate, products that achieve the highest three places gain an increment of TOP3 counters for their vendors.

SELabs (formerly known as Dennis Technology Labs)

- **Enterprise Anti-Virus Protection Test**

- **Home Anti-Virus Protection Test**

- **Small Business Anti-Virus Protection Test**

These quarter-long tests aim to compare the effectiveness of anti-malware products provided by well-known security companies. The products were exposed to Internet threats that were live during the test period. This exposure was carried out in a realistic way, closely reflecting customer experience. The results reflect how products perform under real-life, customer-use-case scenarios, i.e. what happens when a user visits an infected website. The tests include detection and false positive.

Three products with the highest Accuracy scores (calculated as a combination of points of the two subsets) gain an increment of TOP3 counters for corresponding vendors.

MRG Effitas

- **Online Banking/Browser Security Certification¹**

This test assesses the efficiency of products against financial malware by implementing different test methodologies and scenarios: 'In The Wild', real financial malware sets, botnet environments and simulations of different sensitive data interception techniques. Only products that successfully passed each of these steps receive the certification and gain a TOP3 counter increment for their vendors.

- **360 Assessment & Certification**

This test evaluates both the ability to block initial infection and time taken to detect and remediate malware on a compromised system. This test replaces the older "Time to Detect & Remediate Assessment" Test. Only products that receive certification gain an increment of TOP3 counters for their vendors.

- **In-the-wild Ransomware Protection Comparative Analysis**

This vendor-commissioned test evaluates the ability of products to detect and remediate ransomware on the infected system.

Products with the highest Ransomware protection scores (which were calculated according to the ability of products to remediate the system and decrypt the files) gain an increment of TOP3 counters for corresponding vendors.

Virus Bulletin

- **VB100 Comparative Review and Certification**

These tests are held every two months², based each time on a different operating system and evaluating different types of products.

Each product that passes the certification gains a TOP3 counter increment the corresponding vendor.

ICSA Labs

- **Advanced Threat Detection Certification**

This test aims to evaluate the efficiency of security solutions in detecting new and little-known threats while minimizing false positives.

Each product that passes certification gains a TOP3 counter increment for the corresponding vendor.

¹ Results for the fourth quarter were not taken into account in the TOP3 metrics as they had not been published by the time of the database freeze.

² December Review was not taken into account in the TOP3 metrics as it had not been published by the time of the database freeze.

2016 TOP3 METRIC DESCRIPTION

• AegisLab	• Comodo	• HitmanPro	• NSHC	• Symantec
• AhnLab	• CompuClever	• Ikarus	• ONE App Limited	• TeamViewer
• Alibaba	• CrowdStrike	• Intego	• Palo Alto	• Tencent
• Antiy Labs	• Cryptoprevent	• Invincea	• Panda Security	• TGSoft
• ArcaBit	• CYREN	• iSheriff	• PC Pitstop	• Total Defense
• Avast	• Dr.Web	• K7	• PCKeeper	• Trend Micro
• AVG	• DU Group	• Kaspersky Lab	• ProtectWorks AntiVirus	• TrustPort
• Avira	• Elastic Cloud Security System	• Lavasoft	• Psafe	• UtilTool
• AVL Team	• Emsisoft	• Lookout Mobile Security	• Qihoo 360	• VIPRE
• Baidu	• eScan	• Malwarebytes	• Quarri	• Watchdog
• Barracuda	• ESET	• Maya	• Quick Heal	• Webroot
• Bitdefender	• ESTsoft	• Intel Security (McAfee)	• REVE	• WhiteArmor
• Bornaria	• FireEye	• Microsoft	• Secucloud	• Wontok
• BullGuard	• Fortinet	• Microworld	• SentinelOne	• Zemana
• Check Point	• F-Secure	• MSecure Data Labs	• Seqrite	• Zillya!
• Cheetah Mobile	• G Data	• NANO	• Sophos	• Zoner
• ClamAV	• Hammock	• nProtect	• SuperSpamKiller	