



THE INDEPENDENT ANTIVIRUS TESTS

# Products of the year

Advanced In The Wild Malware Test



Summary of security tests in the year 2020



## Conclusions

These conclusions are meant to reward those developers whose security software in the year 2020 were involved in tests performed by AVLab. We want entrepreneurs, companies, and individual users to be able to choose only good solutions to protect devices and data.

This is why the “Advanced In The Wild Test” is characterized by the fact that it is not one-time comparison that nobody will remember after a few months.

Throughout the year developers update their software few or even several dozen times, improving product, fixing errors, and adding new features. Thanks to such extensive tests, it is possible to verify the protection effectiveness in the long term. This is important now when the remote work has become something normal for non-technical users of state institutions, students, and also private sector employees. For these reason, selecting a solution of the year 2020 is a good opportunity to try out the best antivirus applications. As always, we encourage you to analyze test results of various companies (not only ours). A comprehensive look at a product can help you make the right decision.

In January 2020 nobody predicted in what direction the economy will be heading. Political decisions implied by a global pandemic have turned the world upside down. To a large extent employees have been forced to move to r-remote work. Companies have noticed that they can save, but it is just one side of the coin. In one of the study, the long-term impact of isolation on a company and employees has been checked [1]. People who have been sent home for the first time, do not have developed good practices of maintaining the around-the-clock balance between employee duties and their personal life. Due to a compulsory isolation, this was some kind of a social experiment. It is difficult to freely exchange thoughts over the wire. It is even harder to consult spontaneously. And while the transition to video conferencing has fulfilled its role (to some extent), for many people participating in online meetings has become exhausting in the long run. Let's just hope that in these difficult times when cybercriminals take their toll, no one forgets about protection because statistics remain intact.

There was a noticeable increase in attacks via email during the pandemic period from March to December 2020. Cybercriminals were sending many more messages with malicious content than last year during the same period. A developer of the oldest Polish antivirus, MKS-VIR.pl, recorded an increase in zero-day threats[2]. Fortinet's statistics reveal a reflection of media hype around cyber attacks [3]: 60% of companies have experienced an increase in IT security breach attempts when moving to remote work, and 34% have reported real attacks on their networks. It has got to the point that they have started to detect even 600 new phishing threats every single day, while a number of viruses increased in March 2020 by 131% compared to March 2019. Anyway, phishing is only the tip of the iceberg. Subsequently, there are ransomware, trojans, remote access trojans, MaaS (Malware-as-a-Service) intended for novice cybercriminals. Interestingly, we can see decrease in the number of botnets [4]: in January – 66%, in February – 65%, in March – 44% (year on year). Attacks on mobile devices also decreased: in February – 10%, and in December – 5%. Number of potentially unwanted applications has decreased by 2%, and Adware by 18%. Avira has recorded increase in number of malicious attachments prepared in Word, Excel, and PowerPoint by 4%. There are 38% more exploits with each successive operating system versions [5]. This means that cybercriminals react to the crisis, adjusting strategy attack strategies to it.

Despite a global decrease in attacks not associated with the topic of COVID, hackers still harass corporate and administrative networks. The Trickbot and Emotet Trojans responsible for sudden increase in ransomware attacks on hospitals and health care are the most commonly used software by cybercriminals[6]. Emotet is the most active threat in recent weeks, and it remains the most popular malicious software with global impact on 12% of organizations. It is followed by Trickbot and Hiddad that have influenced 4% of organizations worldwide. In Poland, Emotet mentioned earlier is the most frequently detected malware (8,1% of infections). According to the Trend Micro company, creators of Emotet are not out of the competition yet because this trojan is still the worst nightmare for individual users, and small and medium-sized companies.

[1] <https://www.biznesinfo.pl/pr iklania-badanie>

[2] Data have been provided by the developer.

[3] <https://avlab.pl/fortinet-prezentuje-globalny-raport-o-cyberbezpieczenstwie-pracy-zdalnej-2020/>

[4,6] Statistics has been provided by Check Point.

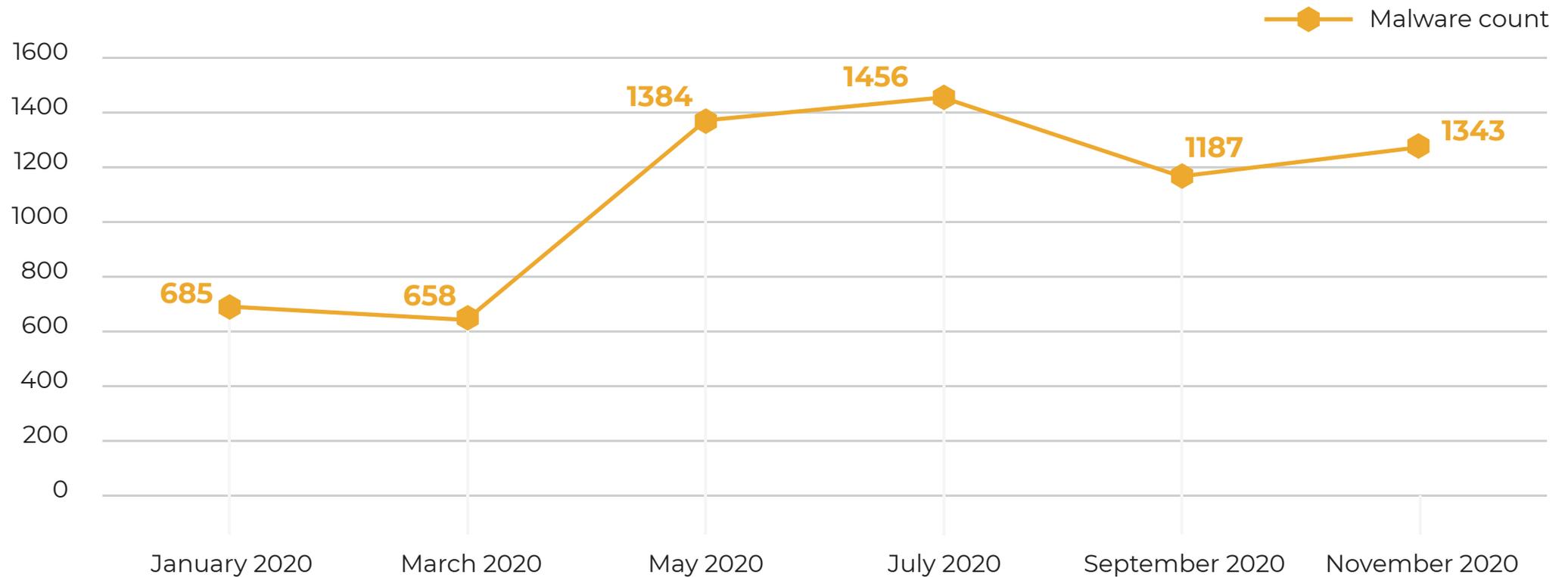
[5] <https://www.avira.com/en/blog/malware-threat-report-q3-2020-statistics-and-trends>

[7] <https://www.facebook.com/TrendMicro/photos/a.443467627960/10158165780147961/?type=3>

# The Advanced In The Malware Tests. What exactly is it?

These are studies that examine protection in real time whose task is to verify the effectiveness of blocking threats over a long period of time. We recreate user behavior when he uses the Internet and a browser. Also due to the malicious software behavior, the test is the most beneficial for developers because it indicates the type of technology that has contributed to block a threat (Level 1, Level 2, Level 3; more information in the methodology). Therefore, the test is kind of confirmation that technologies to protect against malicious software actually work.

Now, let's get to the summary of six editions of the Advanced In The Wild Malware Test in which a total of 6713 samples of malware have been used. Some samples were unknown on the day of the test for certain antivirus programs tested, corresponding to a zero-day threat.



## The summary of the Advanced In The Wild Malware Test

A product had to meet certain conditions in order to win the award of the year 2020 which is a special certificate:

**1.** It had to participate in all tests in the year 2020 under edition of the Advanced In The Wild Malware Test.

**2.** I had to block all samples in every edition of the test.

A solution could not get a unique certificate if:

1. A product has failed to block at least one sample in any edition of the test. In addition, a product that has participated in all tests and blocked 100% of threats, gets better final assessment than a product that has participated only once in the tests.
2. A product has not participated in all editions of the test. Certain developers declare willingness to participate to check protection just once in order to obtain a certificate. Having in mind the long-term nature of the tests, we must take into account both groups by granting appropriate priority of the evaluation.

We carried out 6 editions of the test in the year 2020. Every study was carried out with one month interval after the previous. For example, starting from January: we sent a feedback to developers in February, and then we published results. We started the next edition in March. Likewise, in the further months. During the whole year 2020, we used 6713 samples of unique malware in the tests. This means that throughout the year there have not been cases of testing the same malware sample.

# Test results

Test results Advanced In The Wild Malware Test in 2020 for the individual editions

PRODUCT	SAMPLES BLOCKED IN THE YEAR 2020	AWARDS GRANTED	PARTICIPATION IN TESTS	WHOLE YEAR RESULT
AVAST Free Antivirus 	6713/6713	6x BEST+++	6	100%
AVIRA Antivirus Pro	6710/6713	6x BEST+++	6	99,96%
BTDEFENDER Total Security	3328/3328	3x BEST+++	3*	100%
CHECK POINT Endpoint Security	658/658	1x BEST+++	1*	100%
COMODO Advanced Endpoint Protection 	6713/6713	6x BEST+++	6	100%
COMODO Internet Security 	6713/6713	6x BEST+++	6	100%
EMSIOSFT Business Security	4805/4805	4x BEST+++	4*	100%
ESET Smart Security	1187/1187	1x BEST+++	1*	100%
G DATA Total Security	4665/4671	3x BEST+++	3*	99,87%

\*some developers have not participated in all tests

# Test results

Test results Advanced In The Wild Malware Test in 2020 for the individual editions

PRODUCT	SAMPLES BLOCKED IN THE YEAR 2020	AWARDS GRANTED	PARTICIPATION IN TESTS	WHOLE YEAR RESULT
KASPERSKY Total Security	3328/3328	3x BEST+++	3*	100%
MKS_VIR Internet Security	2571/2571	2x BEST+++	2*	99.95%
SECUREPLUS Pro	 6713/6713	6x BEST+++	6	100%
TREND MICRO Maximum Security	1882/2042	1x BEST+++ 1x Not Approved	2*	92.17%
WEBROOT Antivirus	6712/6713	6x BEST+++	6	99.99%
WEBROOT Business Endpoint Protection	685/685	1x BEST+++	1*	100%
WINDOWS Defender AntivirusSecurity	1825/1845	1x BEST+++ 1x BEST++	2*	98.92%
ZONEALARM Extreme Security	1999/2001	2x BEST+++	2*	99.91%

\*some developers have not participated in all tests

# The summary of the Advanced In The Wild Malware Test by month



P1

LEVEL 1

The browser level, i.e. a virus has been stopped before or right after it has been downloaded.

P2

LEVEL 2

The system level, i.e. a virus has been downloaded, but it hasn't been allowed to run.

P3

LEVEL 3

The analysis level, i.e. a virus has been run and blocked by a tested product.

N

FAIL

The failure, i.e. a virus hasn't been blocked and it has infected a system.

## January-February 2020: quantity of unique 685 samples used in this test

NAME	LEVEL 1	LEVEL 2	LEVEL 3	FAILURE	TOTAL	OBTAINED CERTIFICATE
AVAST Free Antivirus	96%	-	4%	-	100%	<b>BEST+++</b>
AVIRA Antivirus Pro	96%	-	4%	-	100%	<b>BEST+++</b>
BITDEFENDER Total Security	98%	-	2%	-	100%	<b>BEST+++</b>
COMODO Advanced Endpoint Protection	48%	-	52%	-	100%	<b>BEST+++</b>
COMODO Internet Security	50%	-	50%	-	100%	<b>BEST+++</b>
G DATA Total Security	91%	-	~9%	0,43%	99,57%	<b>BEST+++</b>
KASPERSKY Total Security	65%	-	35%	-	100%	<b>BEST+++</b>
SECUREA Plus Pro	8%	-	92%	-	100%	<b>BEST+++</b>
WEBROOT Antivirus	70%	-	30%	-	100%	<b>BEST+++</b>
WEBROOT Business Endpoint Protection	68%	-	32%	-	100%	<b>BEST+++</b>

## March-April 2020: : quantity of unique 658 samples used in this test

NAME	LEVEL 1	LEVEL 2	LEVEL 3	FAILURE	TOTAL	OBTAINED CERTIFICATE
AVAST Free Antivirus	95%	-	5%	-	100%	<b>BEST+++</b>
AVIRA Antivirus Pro	91%	-	9%	-	100%	<b>BEST+++</b>
CHECK POINT Endpoint Security	63%	18%	19%	-	100%	<b>BEST+++</b>
COMODO Advanced Endpoint Protection	11%	8%	81%	-	100%	<b>BEST+++</b>
COMODO Internet Security	14%	10%	76%	-	100%	<b>BEST+++</b>
EMSIOSOFT Business Security	10%	-	90%	-	100%	<b>BEST+++</b>
SECUREAPLUS Pro	10%	-	90%	-	100%	<b>BEST+++</b>
TREND MICRO Maximum Security	91%	-	~9%	0,30%	99,7%	<b>BEST+++</b>
WEBROOT Antivirus	35%	-	65%	-	100%	<b>BEST+++</b>
WINDOWS Defender	88%	-	9%	3%	97%	<b>BEST++</b>
ZONEALARM Extreme Security	62%	19%	19%	-	100%	<b>BEST+++</b>

## May-June 2020: quantity of unique 1384 samples used in this test

NAME	LEVEL 1	LEVEL 2	LEVEL 3	FAILURE	TOTAL	OBTAINED CERTIFICATE
AVAST Free Antivirus	91%	1%	8%	-	100%	<b>BEST+++</b>
AVIRA Antivirus Pro	84%	-	~16%	0.07%	99.93%	<b>BEST+++</b>
COMODO Advanced Endpoint Protection	17%	-	83%	-	100%	<b>BEST+++</b>
COMODO Internet Security	24%	-	76%	-	100%	<b>BEST+++</b>
EMSIOSOFT Business Security	21%	-	79%	-	100%	<b>BEST+++</b>
MKS_VIR Internet Security	100%	-	-	-	100%	<b>BEST+++</b>
SECUREAPLUS Pro	20%	-	80%	-	100%	<b>BEST+++</b>
TREND MICRO Maximum Security	87,6%	-	1%	11,4%	88,6%	<b>ONLY TESTED</b>
WEBROOT Antivirus	66%	-	34%	-	100%	<b>BEST+++</b>

## July-August 2020: quantity of unique 1456 samples used in this test

NAME	LEVEL 1	LEVEL 2	LEVEL 3	FAILURE	TOTAL	OBTAINED CERTIFICATE
AVAST Free Antivirus	90%	1%	9%	-	100%	<b>BEST+++</b>
AVIRA Antivirus Pro	88%	-	~12%	0,06%	99,94%	<b>BEST+++</b>
BITDEFENDER Total Security	100%	-	-	-	100%	<b>BEST+++</b>
COMODO Advanced Endpoint Protection	16%	-	84%	-	100%	<b>BEST+++</b>
COMODO Internet Security	23%	-	77%	-	100%	<b>BEST+++</b>
EMSIOSOFT Business Security	18%	-	82%	-	100%	<b>BEST+++</b>
G DATA Total Security	100%	-	-	-	100%	<b>BEST+++</b>
KASPERSKY Total Security	94%	-	6%	-	99,7%	<b>BEST+++</b>
SECUREAPLUS Pro	19%	-	81%	-	100%	<b>BEST+++</b>
WEBROOT Antivirus	78%	-	~22%	0,06%	99,94%	<b>BEST+++</b>

## September-October 2020: quantity of unique 1187 samples used in this test

NAME	LEVEL 1	LEVEL 2	LEVEL 3	FAILURE	TOTAL	OBTAINED CERTIFICATE
AVAST Free Antivirus	90%	-	10%	-	100%	<b>BEST+++</b>
AVIRA Antivirus Pro	95%	-	~5%	0,08%	99,92%	<b>BEST+++</b>
BITDEFENDER Total Security	100%	-	-	-	100%	<b>BEST+++</b>
COMODO Advanced Endpoint Protection	9%	1%	90%	-	100%	<b>BEST+++</b>
COMODO Internet Security	12%	6%	82%	-	100%	<b>BEST+++</b>
ESET Smart Security Premium	100%	-	-	-	100%	<b>BEST+++</b>
G DATA Total Security	100%	-	-	-	100%	<b>BEST+++</b>
KASPERSKY Total Security	97%	-	3%	-	100%	<b>BEST+++</b>
MKS_VIR Internet Security	100%	-	-	-	100%	<b>BEST+++</b>
SECUREPLUS Pro	8%	-	92%	-	100%	<b>BEST+++</b>

**September-October 2020:** quantity of unique 1187 samples used in this test

NAME	LEVEL 1	LEVEL 2	LEVEL 3	FAILURE	TOTAL	OBTAINED CERTIFICATE
WEBROOT Antivirus	57%	-	43%	-	100%	<b>BEST+++</b>
WINDOWS Defender	8%	-	92%	-	100%	<b>BEST+++</b>

## November-December 2020: quantity of unique 1343 samples used in this test

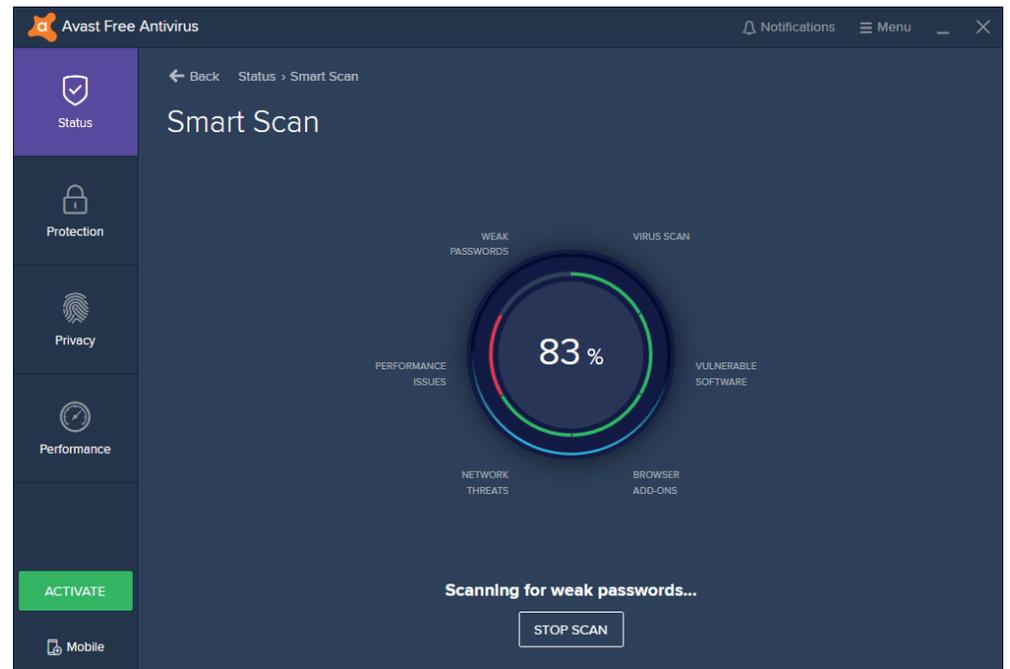
NAME	LEVEL 1	LEVEL 2	LEVEL 3	FAILURE	TOTAL	OBTAINED CERTIFICATE
AVAST Free Antivirus	79%	-	21%	-	100%	<b>BEST+++</b>
AVIRA Antivirus Pro	87%	-	13%	-	100%	<b>BEST+++</b>
COMODO Advanced Endpoint Protection	16%	-	84%	-	100%	<b>BEST+++</b>
COMODO Internet Security	19%	-	81%	-	100%	<b>BEST+++</b>
EMSISOFT Business Security	96%	3%	1%	-	100%	<b>BEST+++</b>
G DATA Total Security	~100%	-	-	0,22%	99,88%	<b>BEST+++</b>
SECUREAPLUS Pro	17%	-	83%	-	100%	<b>BEST+++</b>
WEBROOT Antivirus	67%	-	33%	-	100%	<b>BEST+++</b>
ZONEALARM Extreme Security	89%	1%	~10%	0.14%	99,86%	<b>BEST+++</b>



## AVAST Free Antivirus

The software to protect workstation has participated in all editions of the test. It has blocked 6713/6713 malware samples which result in a maximum score of 100% protection against threats in the wild.

- ◆ Over 90% of threats have been blocked in a browser or after saving to a disk.
- ◆ 0,33% of threats have been blocked when moving samples to other location on a disk.
- ◆ Over 9% of threats have been blocked after launching malicious software.



Special award  
„Product of the Year 2020”



# COMODO

Creating Trust Online®

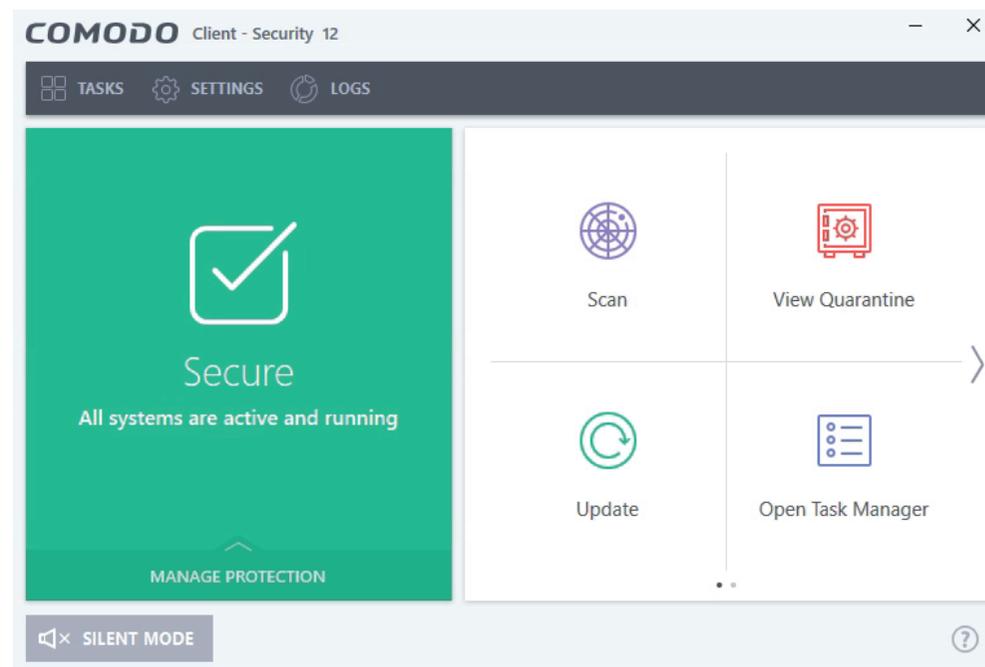
## COMODO Advanced Endpoint Protection

The software to protect workstation has participated in all editions of the test. It has blocked 6713/6713 malware samples which result in a maximum score of 100% protection against threats in the wild.

- ◆ Nearly 20% of threats have been blocked in a browser or after saving to a disk.
- ◆ Over 1% of threats have been blocked when moving samples to other location on a disk.
- ◆ Exactly 9% of threats have been blocked after launching malicious software.

# 6 x

PARTICIPATION IN TESTS 6/6



Special award  
„Product of the Year 2020”



# COMODO

Creating Trust Online®

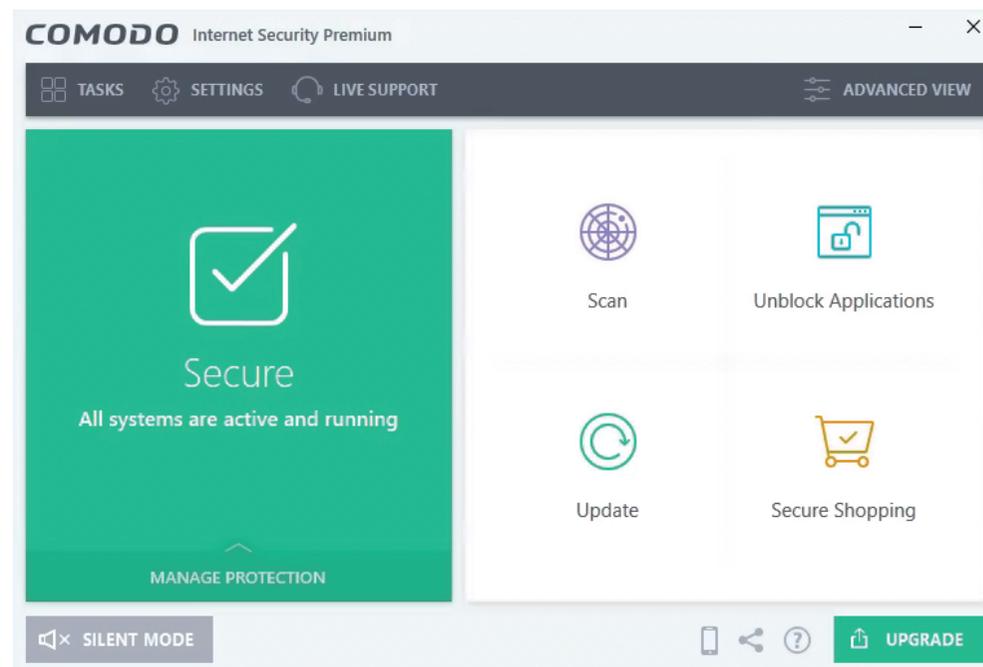
## COMODO Internet Security

The software to protect workstation has participated in all editions of the test. It has blocked 6713/6713 malware samples which result in a maximum score of 100% protection against threats in the wild.

- ◆ Nearly 23% of threats have been blocked in a browser or after saving to a disk.
- ◆ Nearly 3% of threats have been blocked when moving samples to other location on a disk.
- ◆ Over 74% of threats have been blocked after launching malicious software.

# 6 x

PARTICIPATION IN TESTS 6/6



Special award  
„Product of the Year 2020”



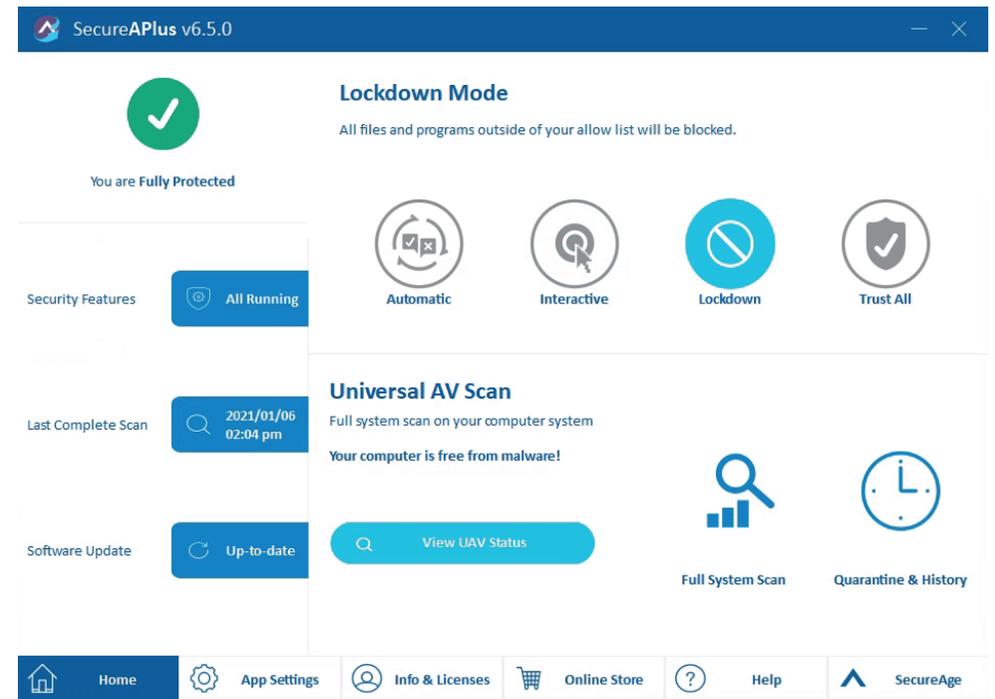
# SecureAPIus

## SecureAPIus

The software to protect workstation has participated in all editions of the test. It has blocked 6713/6713 malware samples which result in a maximum score of 100% protection against threats in the wild.

- ◆ Nearly 14% of threats have been blocked in a browser or after saving to a disk.
- ◆ Over 86% of threats have been blocked after launching malicious software.

**6 x**  
PARTICIPATION IN TESTS 6/6



Special award  
„Product of the Year 2020”

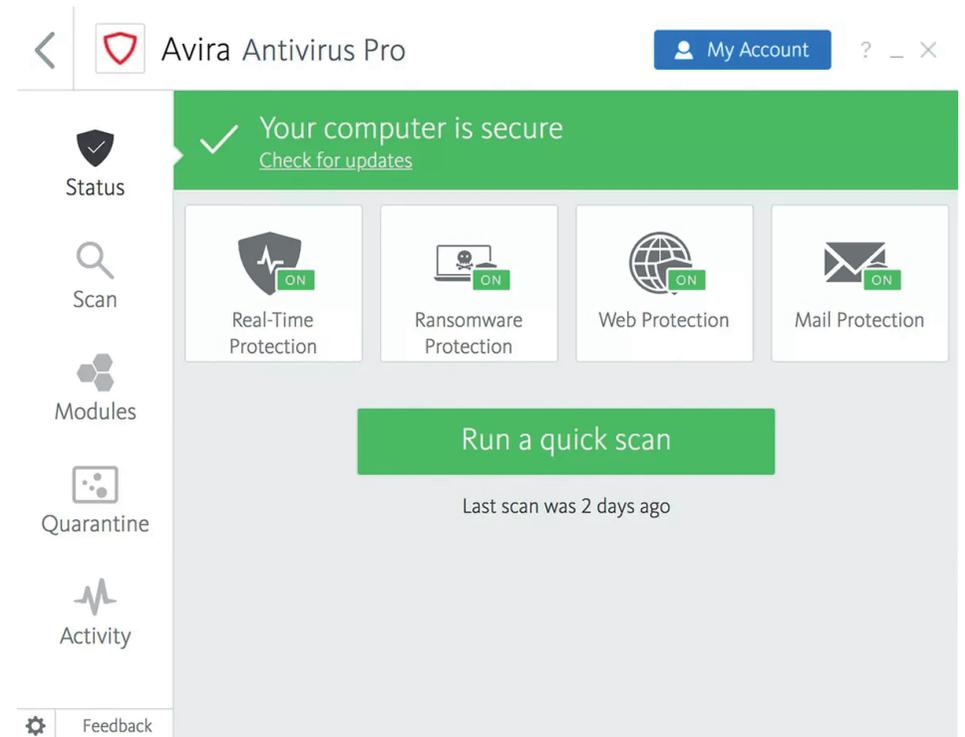




## Avira Antivirus Pro

The software to protect workstation has participated in all editions of the test. It has blocked 6713/6713 malware samples which result in a very high score of 99,96% protection against threats in the wild.

- ◆ Over 90% of threats have been blocked in a browser or after saving to a disk.
- ◆ About 10% of threats have been blocked after launching malicious software.



6 x

PARTICIPATION IN TESTS 6/6

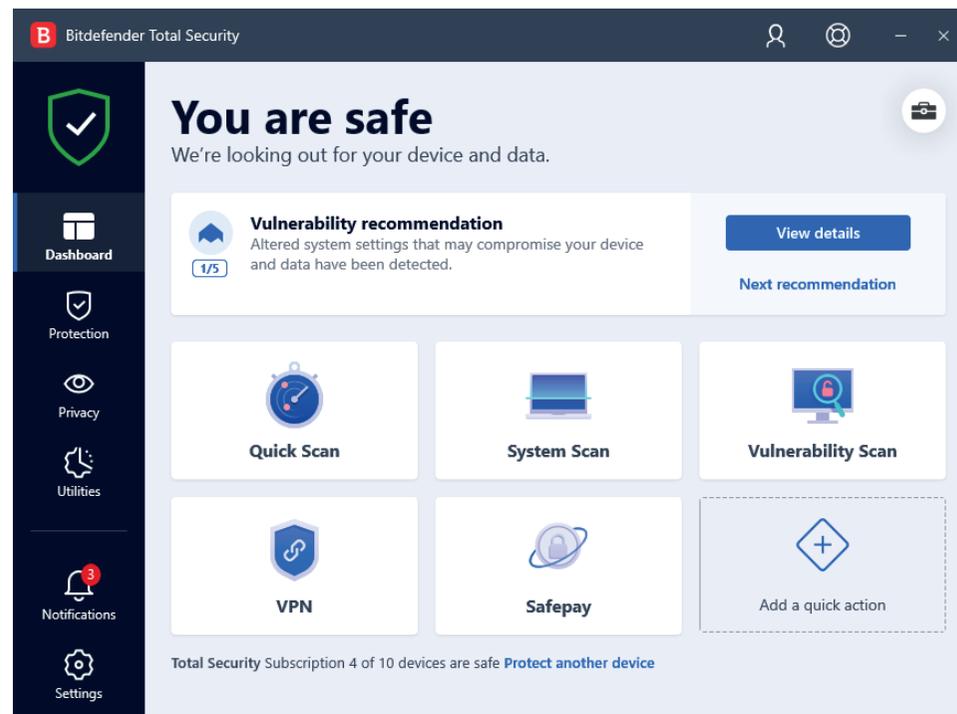




## Bitdefender Total Security

The software to protect workstation has participated in three editions of the test. It has blocked 3328/3328 malware samples which result in a maximum score of 100% protection against threats in the wild.

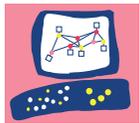
- ◆ Over 99% of threats have been blocked in a browser or after saving to a disk.
- ◆ About 1% of threats have been blocked after launching malicious software.



3 x

PARTICIPATION IN TESTS 3/6



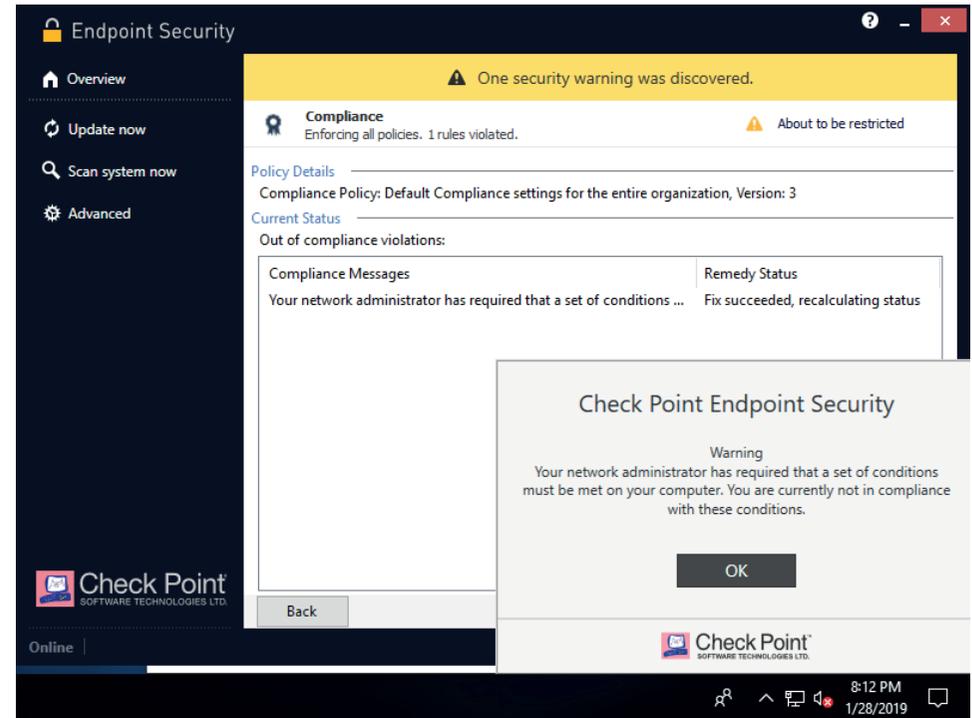


**Check Point**<sup>®</sup>  
SOFTWARE TECHNOLOGIES LTD.

## Check Point Endpoint Protection

The software to protect workstation has participated in one edition of the test. It has blocked 658/658 malware samples which result in a maximum score of 100% protection against threats in the wild.

- ◆ 63% of threats have been blocked in a browser or after saving to a disk.
- ◆ 18% of threats have been blocked when moving samples to other location on a disk.
- ◆ 19% of threats have been blocked after launching malicious software.



**1** ×  
PARTICIPATION IN TESTS 1/6



# EMSI SOFT

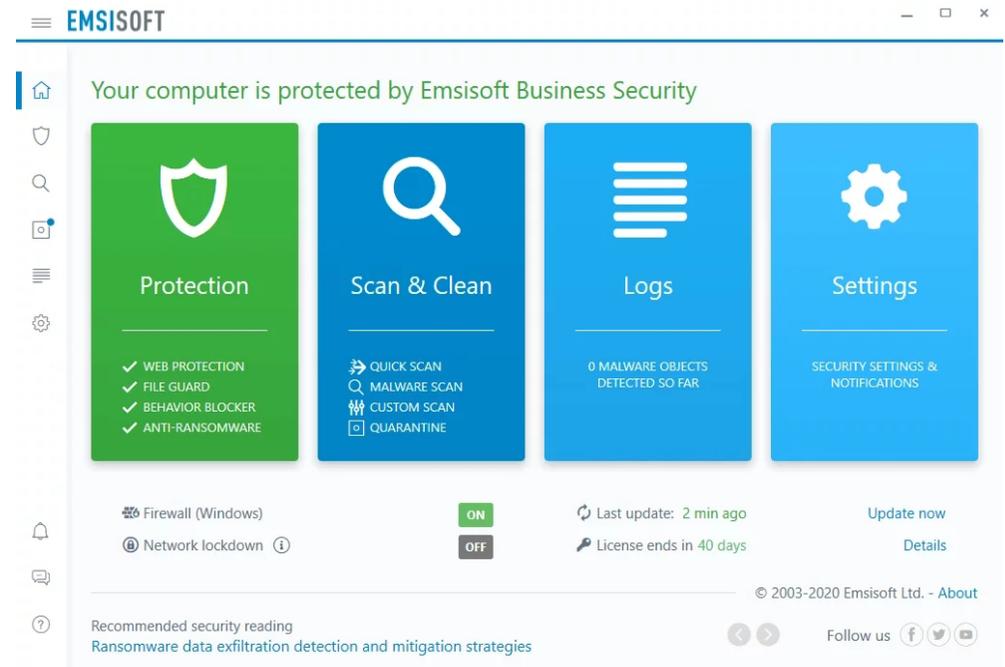
## Emsisoft Business Security

The software to protect workstation has participated in four editions of the test. It has blocked 4805/4805 malware samples which result in a maximum score of 100% protection against threats in the wild.

- ◆ Over 36% of threats have been blocked in a browser or after saving to a disk.
- ◆ Less than 1% of threats have been blocked when moving samples to other location on a disk.
- ◆ 63% of threats have been blocked after launching malicious software.

# 4x

PARTICIPATION IN TESTS 4/6

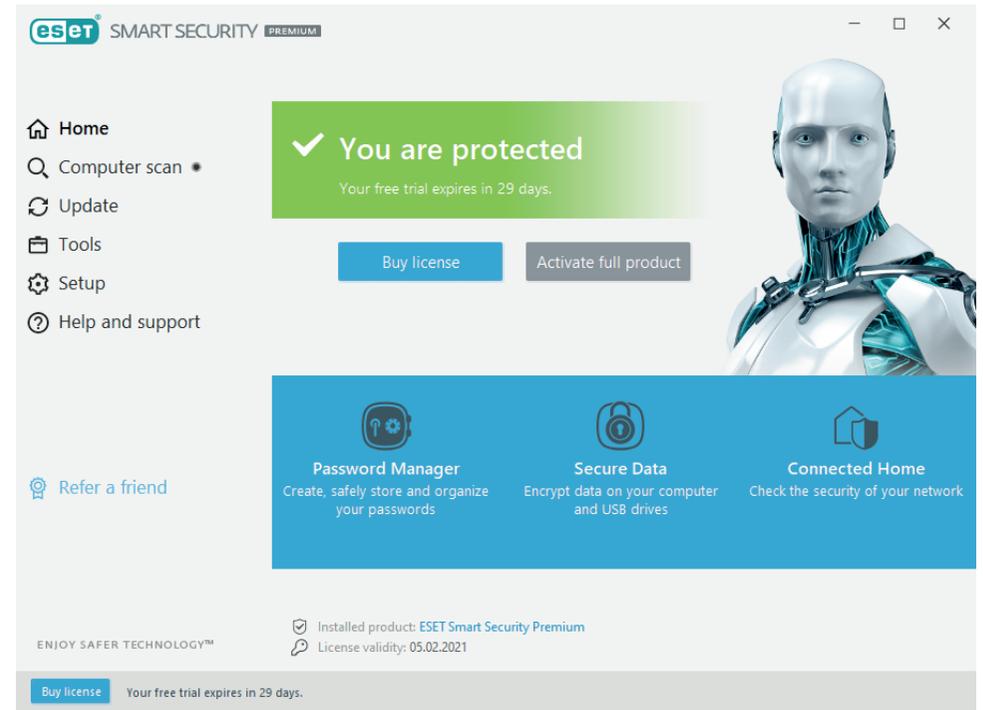




## ESET Smart Security

The software to protect workstation has participated in one edition of the test. It has blocked 1187/1187 malware samples which result in a maximum score of 100% protection against threats in the wild.

- ◆ In this one test, 100% of threats have been blocked in a browser or after saving to a disk.

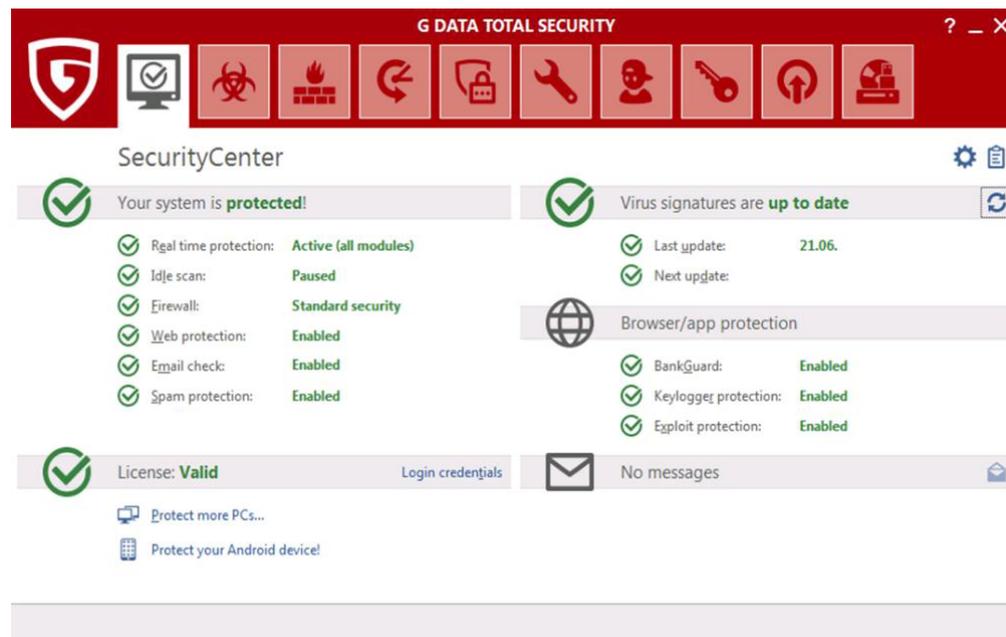




## G DATA Total Security

The software to protect workstation has participated in three editions of the test. It has blocked 4665/4671 malware samples which result in a very high score of 99,87% protection against threats in the wild.

- ◆ Over 97% of threats have been blocked in a browser or after saving to a disk.
- ◆ Over 2% of threats have been blocked after launching malicious software.



# 3 ×

PARTICIPATION IN TESTS 3/6

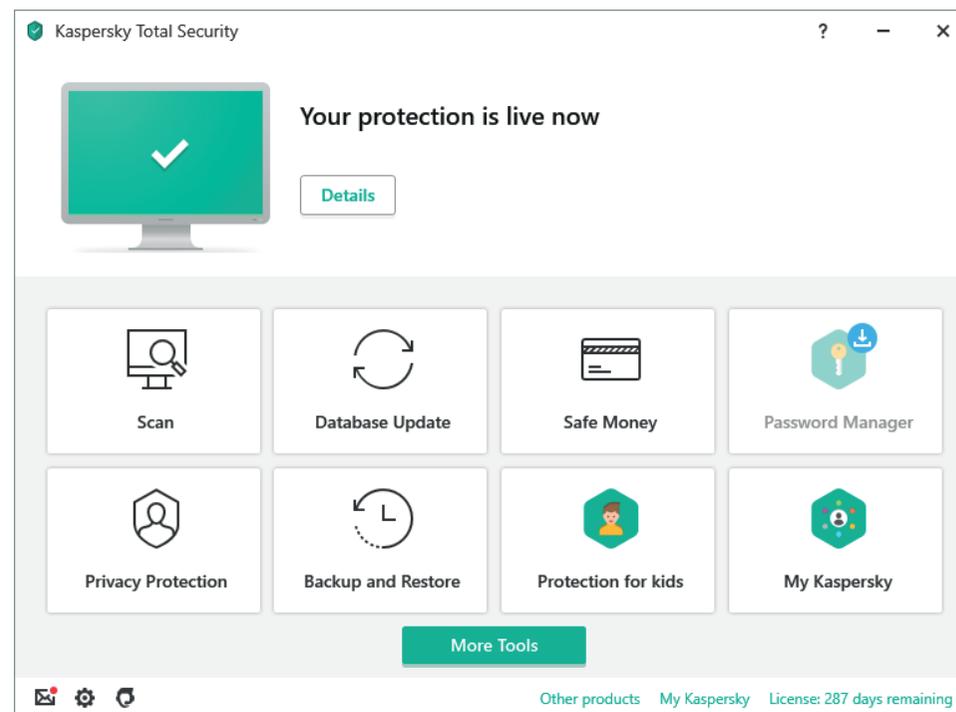




## KASPERSKY Total Security

The software to protect workstation has participated in three editions of the test. It has blocked 3328/3328 malware samples which result in a maximum score of 100% protection against threats in the wild.

- ◆ Over 85% of threats have been blocked in a browser or after saving to a disk.
- ◆ Over 14% of threats have been blocked after launching malicious software.



# 3 ×

PARTICIPATION IN TESTS 3/6

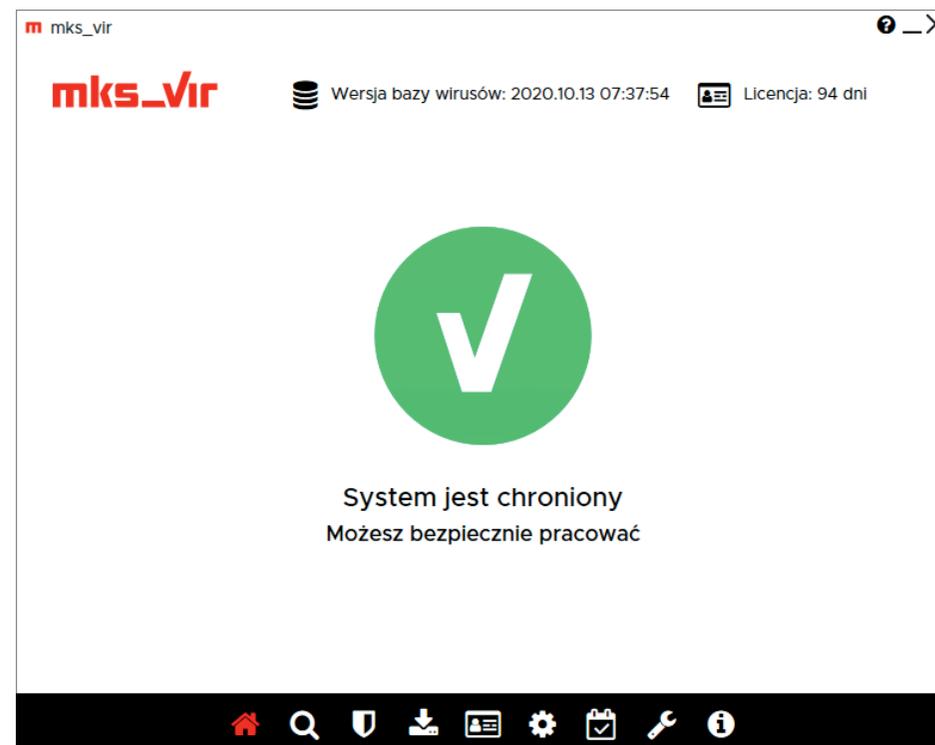




## MKS\_VIR Internet Security

The software to protect workstation has participated in two editions of the test. It has blocked 2571/2571 malware samples which result in a maximum score of 100% protection against threats in the wild.

- ◆ Exactly 100% of threats have been blocked in a browser or after saving to a disk.



2 ×

PARTICIPATION IN TESTS 2/6

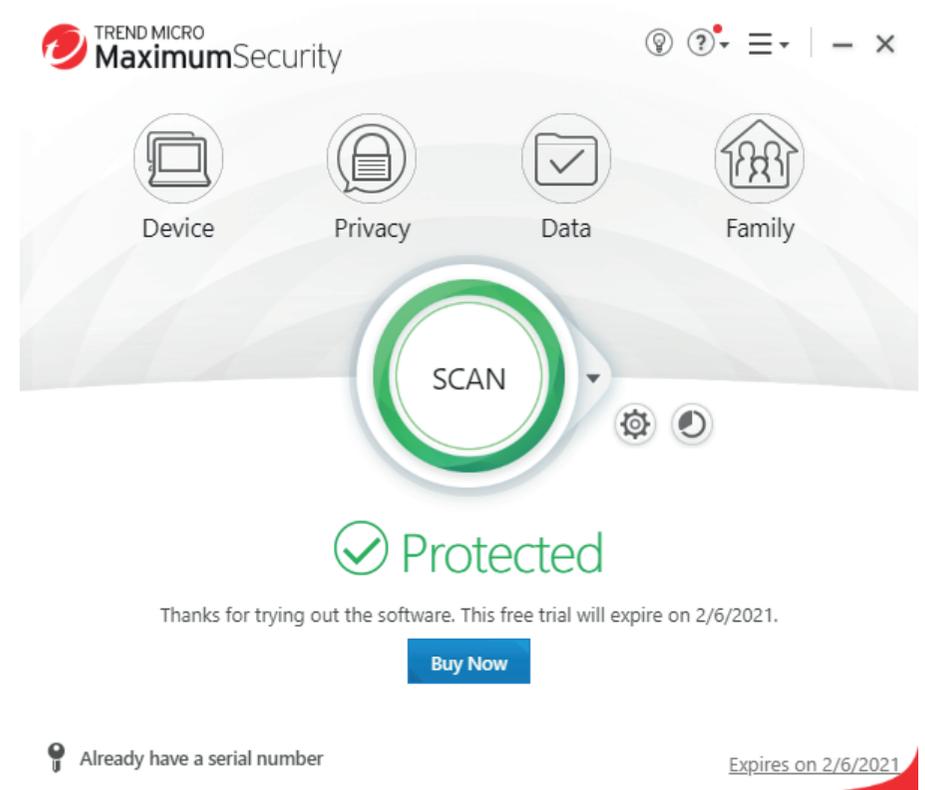




## TREND MICRO Maximum Security

The software to protect workstation has participated in two editions of the test. It has blocked 1882/2042 malware samples which result in a maximum score of 92,16% protection against threats in the wild.

- ◆ Over 89% of threats have been blocked in a browser or after saving to a disk.
- ◆ Nearly 5% of threats have been blocked after launching malicious software.



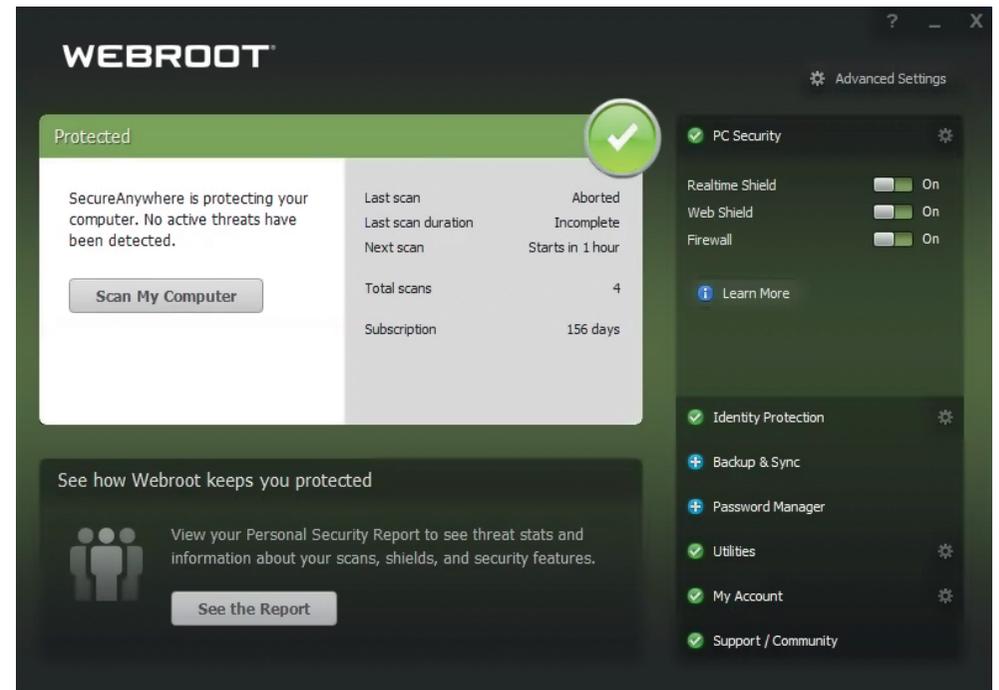
# WEBROOT®

an **opentext™** company

## Webroot Antivirus

The software to protect workstation has participated in all editions of the test. It has blocked 6712/6713 malware samples which result in a maximum score of 99,99% protection against threats in the wild.

- ◆ Over 62% of threats have been blocked in a browser or after saving to a disk.
- ◆ Nearly 38% of threats have been blocked after launching malicious software.



# 6x

PARTICIPATION IN TESTS 6/6



# WEBROOT®

an **opentext™** company

## Webroot Business EndpointProtection

The software to protect workstation has participated in one edition of the test. It has blocked 685/685 malware samples which result in a maximum score of 100% protection against threats in the wild.

- ◆ 68% of threats have been blocked in a browser or after saving to a disk.
- ◆ 32% of threats have been blocked after launching malicious software.



1 x

PARTICIPATION IN TESTS 1/6

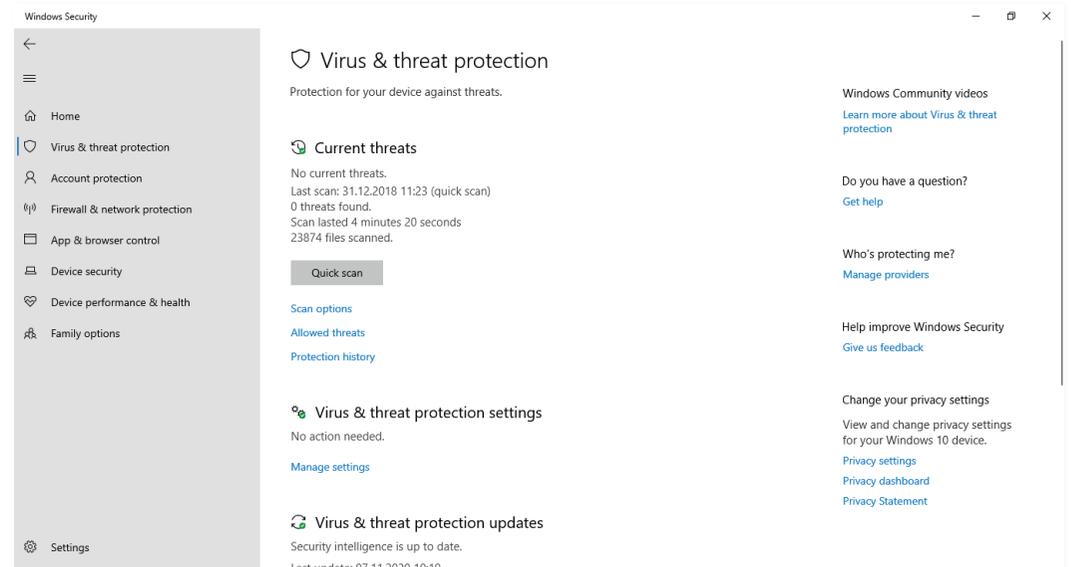




# WINDOWS Defender

The software to protect workstation has participated in two editions of the test. It has blocked 1825/1845 malware samples which result in a maximum score of 98,92% protection against threats in the wild.

- ◆ 48% of threats have been blocked in a browser or after saving to a disk.
- ◆ Over 50% of threats have been blocked after launching malicious software.



1 x  
PARTICIPATION IN TESTS 2/6



1 x

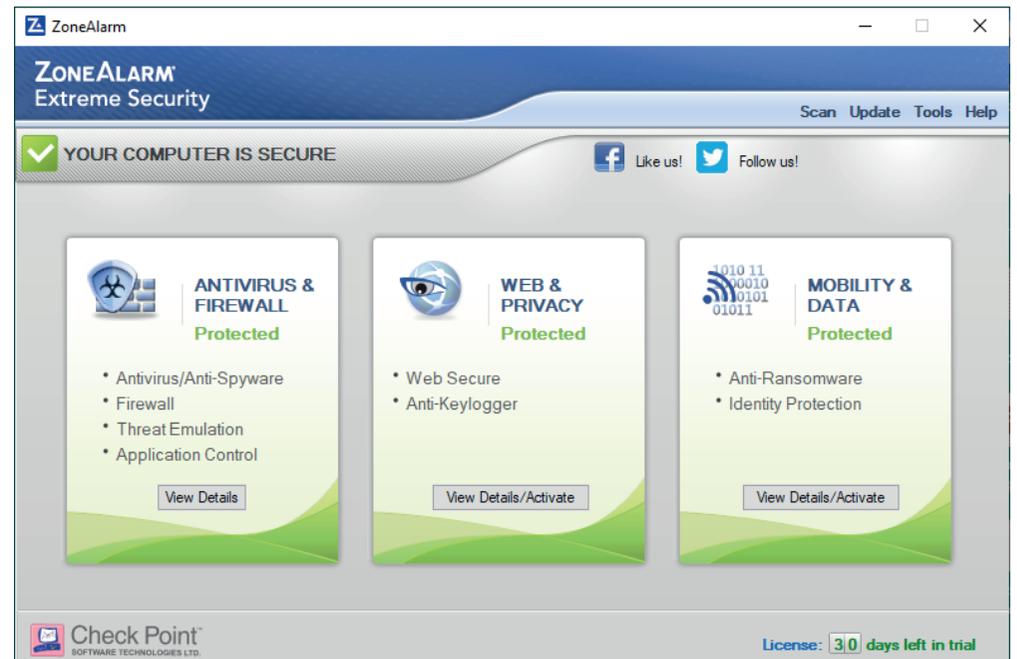




## ZONEALARM Extreme Security

The software to protect workstation has participated in two editions of the test. It has blocked 1999/2001 malware samples which result in a maximum score of 99,9% protection against threats in the wild.

- ◆ Over 75% of threats have been blocked in a browser or after saving to a disk.
- ◆ 10% of threats have been blocked when moving samples to other location on a disk.
- ◆ Nearly 15% of threats have been blocked after launching malicious software.



2 ×

PARTICIPATION IN TESTS 2/6





AVLab as an independent Polish organization that acts as the guardian of security on the Internet provides information through articles, trainings, and conferences. Professional reviews and security tests are our distinctive feature.

In tests, we use malicious software, tools, and techniques of bypassing security that are used in real attacks. For more information on our offer, please contact us.

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