



# *Anti-virus in Russian means Dr.Web*

This booklet is our love confession. We confess our love for the creator of Dr.Web and for his life's work to which all of us at Doctor Web are committed heart and soul.

This booklet is an expression of the pride we take in our work.

On Dr.Web's 20th anniversary, we'd like to share our genuine admiration for the talent and qualities found in the man fully responsible for every step of the way to create a unique phenomenon on a global scale: Russia's state-of-the-art anti-virus—Dr.Web.

Dr.Web was at the height of popularity almost from the moment it was born—in the mid-90s there was no computer in Russia that did not have Dr.Web installed. The supreme-quality high-tech product experienced several years of unjust neglect on the turn of the century and was revived once again thanks to the efforts of people who believed in it. It would have had no chance of surviving on the extremely competitive global anti-virus market were it not for its author—Igor Danilov—who has adhered all these years to the principle that one must create only what people genuinely need.

*“We make the product the way I've always wanted to – with an emphasis on quality. This is the most important thing”.*



## Igor Danilov – a fighter by nature

Igor Danilov is a living Russian programming legend, a unique, extraordinary, self-taught genius who created the renowned virus fighter—Dr.Web Anti-virus.

He was born on April 22, 1964, in Leningrad (present-day St. Petersburg) and graduated from Kachinskoye Higher Military Pilot School in Volgograd, after which he served as a military pilot.

*“It’s simple: they lift you into the sky and you must give your life and/or eliminate the enemy. Looking back now, I realize that I was only ever interested in math and flying. So, while my desire to become a fighter pilot seemed at the very least strange to others, it was obvious to me.”*

Igor Danilov, from an interview with “System Administrator” magazine

After studying at the Leningrad Institute of Avionics, Igor Danilov worked as an engineer in aviation defence projects at the Leninets research and production facility. In the `80s, the company manufactured onboard CPUs for MIG-29 fighter jets. It was the time when viruses were first appearing, and Igor Danilov was tasked with calculating the probability of onboard fighter computers getting infected.

*“I described possible schemes for introducing viruses into computer systems in the early 90s. Then I had to assess the probability of a Soviet fighter’s onboard computer getting infected. I showed how a Trojan horse could be deployed in the system so that, upon receiving a certain signal from the ground, the plane could not simply be rendered non-operational, it could be transformed into a weapon of the enemy.*

*... the Stuxnet outbreak followed a similar pattern. However, in my description I used a scheme based on social engineering and 5-inch floppy disks but not a USB-flash drive, as it was with Stuxnet. If you understand how the software that controls a particular device works, an attack on such a device is feasible, even if it is a stand-alone device. The world, immersed in IT is very fragile.”*

Igor Danilov, from an interview with PC Week/RE /RE

In 1990, Igor Danilov started developing anti-virus software. The first version of SpiderWeb (the prototype for Dr.Web) appeared in 1992.

*It started out in the early `90s as a hobby. Back then, I was working at a secret research facility in St. Petersburg on a project that dealt with signal processing in jet fighter guidance systems. And for some reason I got interested in the virus problem...*

Igor Danilov, from an interview with Webcity

*“Books were scarce and we didn’t have anything to learn from, there was no Internet at that time. We went to the Technicheskaya kniga book store on Pushkin Street in St. Petersburg, looked through subscriptions lists for the upcoming year and subscribed to books we needed. When a desired book appeared, it changed hands many times. We often read all night long, because we needed to learn as quickly as possible.”*

Igor Danilov from an interview with “System Administrator” magazine

# The Company and its People

On December 21, 2003 Igor Danilov founded Doctor Web. Boris Sharov became the company's general director.

Doctor Web's strategic goal became to create the best anti-virus software that meets all present requirements and to develop new technologies to arm users against all types of computer threats.

At the time of Doctor Web's founding, only around 10 percent of Russian users were running Dr.Web. The launch of Doctor Web, Ltd. resulted in skyrocketing sales of Dr.Web products in Russia and abroad. Today, Doctor Web has more than 300 employees.

*"Finding a professional to employ is a big problem. There are a lot of companies and all of them are seeking professionals. They do not want to nurture them, it's expensive. Outbidding is cheaper. Typically, we don't hesitate to let go people who can be outbidded easily. We value a different attitude. Our main requirements for a candidate are the ability to think logically and to know the basics. We will gladly hire anyone who is willing to work and able to think logically. We will teach them the rest."*

*There are a lot of very smart people at our company and I take credit for this. I can say that I found some of our experts myself in different cities and even in different countries, and now they set the standard for the newcomers".*

Igor Danilov from an interview with "System Administrator" magazine

*"The good news is that we have helped many young people, who came to Doctor Web at different times, to become professionals. I'm also delighted to see that the company is growing, and it pleases me that the entire time I've worked in the anti-virus industry, which is since its emergence, it is one of the few industries in our country that produces rather than".*

Igor Danilov, from an interview with PC Week/RE

# Doctor Web geography

## St. Petersburg, Russia

Traditionally our anti-virus products have been developed in St. Petersburg, and, therefore, the development department headed by Igor Danilov is stationed there. Also here is the virus monitoring service that collects virus samples from around the world.

## Moscow, Russia

The headquarters is located in Moscow. The distribution, marketing, business development and web design departments and technical support service also reside in Moscow. The support staff consists of highly skilled engineers who provide a variety of support services in Russian, English, German, French and Japanese.

### Address:

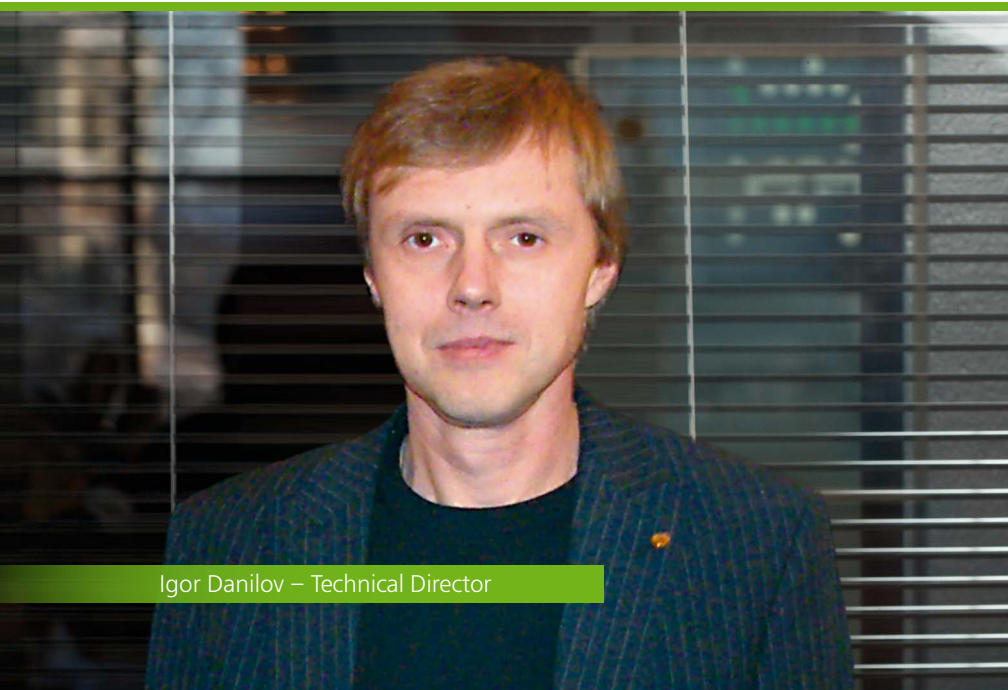


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Igor Danilov – Technical Director



Boris Sharov – General Director



# Regional offices

*“There was a time when I was alone, and my workplace was in a basement. Now, we are a team in a comfortable office and there are branch offices in various countries around the world”.*

Igor Danilov



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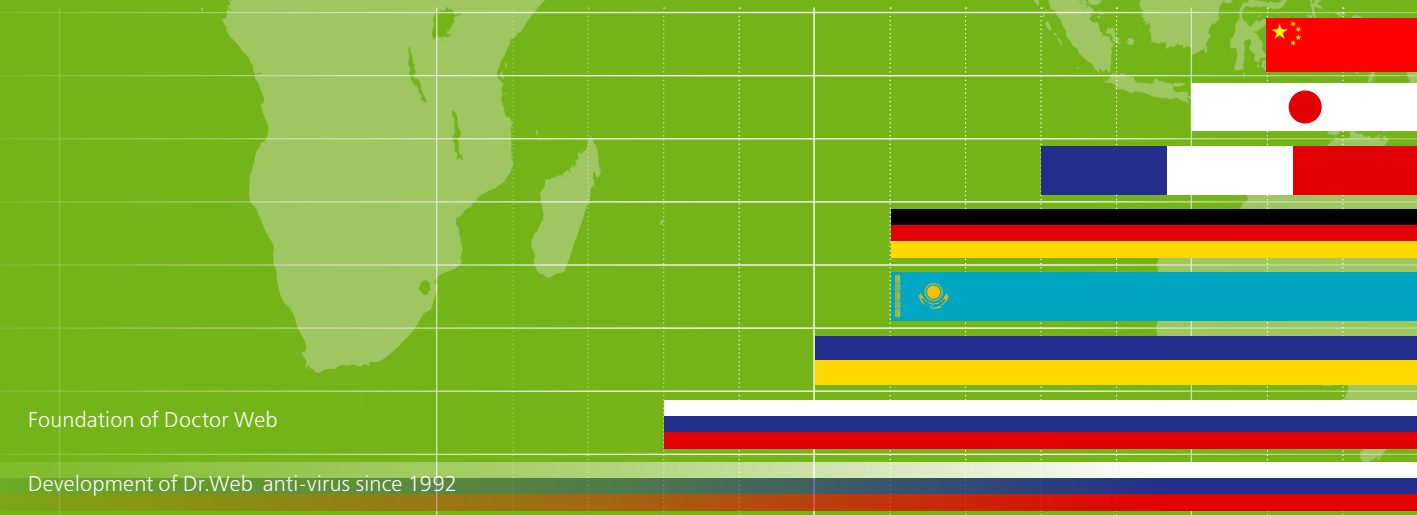
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# Dr.Web users

Doctor Web's annual sales growth rate is above the average for the industry. The company is steadily strengthening its position as a supplier of anti-virus solutions for large governmental organizations. Dr.Web software is deployed by ministries and large banks and enterprises.

Doctor Web's customers include home users from many countries, Russian corporations, small companies and backbone corporations. The company is grateful to all its customers for their loyalty and support through the years. Doctor Web has received state certificates and awards; our satisfied customers spanning the globe are clear evidence of the complete trust placed in the products created by our talented Russian programmers.

# They trust us



# History

## 1990 – 1991

- The first experiments to cure viruses take place (using AIDStest and other anti-viruses and debuggers).
- The first resident anti-virus monitor Tadpole is created.

## 1991

- The book Computer Virology by Nikolai N. Bezrukov is published.

*“... when it comes to my current profession, Bezrukov’s “Computer Virology” influenced me most. It was published in 1991 and that must have been when I bought it. My family and I went to the countryside for a weekend and the book was so interesting that I finished it in one night. The following morning, I understood how an anti-virus should work*

*I met Nikolai Bezrukov in 1997 in San Francisco, he was very upset that we had not met earlier but delighted to hear how much his book had influenced me”.*

**Igor Danilov from an interview with “System Administrator” magazine**

- Tadpole is rewritten and becomes more flexible and versatile.
- The anti-virus doctor (scanner) Tornado is created. Tornado could interact with hard disk file system at a low level (BIOS), cope with the new Ghost-1963 virus and was distinguished by a high scanning speed.

*“... Speed was its key advantage. That’s why the product was called Tornado and back then it was indeed the fastest anti-virus scanner. Then the anti-virus, which was already being called Spider-Web, won a contest, and I ended up at CeBIT93 in Hanover. At this huge exhibition I talked to other anti-virus makers and clients and realized that I needed to do everything completely differently”.*

**Igor Danilov, from an interview with Webcity**

## 1992

- SpiderWeb incorporating the Spider Guard (Tadpole successor) and Doctor Web (the successor to Tornado) is released. That moment became the starting point in the history of Dr.Web’s development.

*“First there was the SpiderWeb suite, which consisted of three programs: Spider, Dr.Web and Scorpion disk checker. It was after I had visited Germany that I realized I wouldn’t be able to cope with the whole hi-tech project on my own and implement all the features I wanted. That’s why I chose one component—Dr.Web—and continued developing it. But, I always remembered that the other components were important, too, and, sooner or later, I would make them properly and incorporate them into the suite”.*

**Igor Danilov, from an interview with Webcity**

- Igor Danilov took part in the “1 & 1” contest, held this year for Eastern European countries, to find interesting software products and technologies. His SpiderWeb won a grant providing its maker with a stand at CeBIT’93.

## 1993

- Dr.Web at CeBIT’93 (Hanover, Germany).
- Scorpion disc inspector is created. Like the Tornado, Scorpion worked with a hard disk file system at the BIOS level, which enabled it to detect stealth viruses.
- The first polymorphic virus is created. Its emergence became a watershed separating real anti-viruses capable of detecting and curing polymorphs from other programs performing some of the anti-virus functions. Dr.Web becomes the first program in the history of the anti-virus industry that could detect and cure complex polymorphic viruses. It is this anti-virus technology that first made Dr.Web famous among professionals.

*“I remember in 1993 and 1994 going around shops on Pushkin Street (we made Dr.Web to neutralize polymorphic viruses) and giving the anti-virus to salespeople. I told them: you can copy it to a floppy disk for free. It became popular instantly.... Back then I was just happy that people were using our anti-virus. Although I was not paid for it, hearing words of thanks felt great! ”.*

**Igor Danilov, from an interview with “System Administrator” magazine**

- Igor Danilov participated in the All-Russian Seminar and became acquainted with Dmitry Lozinsky and other virologists.

## 1994

- The heuristic analyzer, which detects previously unknown viruses, is implemented.
- A processor emulator to uncoil and detect polymorphic viruses is implemented. Dr.Web Anti-virus becomes one of the few in the world to have coped the world-famous polymorphic virus Phantom-1.
- Doctor Web anti-virus scanner 1.00 is released.
- Commercial distribution of the Dr.Web anti-virus begins.

## 1995

- Dr.Web anti-virus is presented at CeBIT’95 (Hanover, Germany).
- Dr.Web is ported from the 16-bit to the 32-bit platform.
- A feature is created that enables updates to be delivered to the Dr.Web virus database without changing the code of the program.
- Dr.Web for WinWord is released.
- Dr.Web becomes one of the first anti-viruses for Novell NetWare.
- For the first time, Igor Danilov presents a report at the EICAR-95 conference in Zurich. Computer virologists from all over the world attend these conferences.

## 1996

- The January issue of Virus Bulletin magazine features the results of comparative testing for programs capable of neutralizing polymorphic viruses.
- Virus Bulletin magazine publishes its first review of the Dr.Web Anti-virus. The Dr.Web heuristic analyzer is awarded the highest mark.
- The online Dr.Web scanner service appears.

## 1998

- Dr.Web 4.0 is released. It incorporated innovations that , fundamentally changed the anti-virus’s architecture and operational routines.

## 1999

- The first comprehensive system to prevent virus penetration is created for Windows 95/98.
- The resident monitor SplDer Guard for Windows 95/98 joined the Dr.Web family.
- Dr.Web becomes the first anti-virus in the world to feature a virtual machine memory scan under Windows NT.

## 2000

- The Dr.Web anti-virus is certified by the Russian Defence Ministry.
- Dr.Web virus database updating frequency increases dramatically. Today the databases are updated every day on an hourly basis.

## 2002

- The Dr.Web engine is licensed to the Chinese anti-virus developer KingSoft.

## 2003

- Igor Danilov establishes Doctor Web and becomes its permanent technical director.

# History

## 2004

- Dr.Web Enterprise Suite for corporate network protection is released.

*“— Corporate solutions are our top priority?*

*— Yes, because we have a product no one else has. In the late '90s, it was believed that Dr.Web was more an anti-virus for home users than for corporate clients. I decided that this perception had to be changed and created a special team that worked on enterprise solutions for five years. Naturally, we set ourselves the challenging goal of being at least as good as major developers like Symantec, MacAfee, and Trend Micro”.*

**Igor Danilov, during an interview with “System Administrator” magazine**

- Dr.Web engine is licensed to the South Korean developer of the Virus Chaser.
- The free utility, Dr.Web CureIt!, is released and immediately becomes the most popular and trusted means for emergency virus curing among users of other anti-viruses.

## 2005

- The Technical Support Center in the Ukraine is opened.

## 2006

- Doctor Web Central Asia is established in the Republic of Kazakhstan
- Doctor Web Deutschland GmbH office opens in Germany.

## 2007

- The first version of Dr.Web AV-Desk is released. From this point on, the Software-as-a-Service (SaaS) era in Russia’s anti-virus industry is underway. Now service providers are delivering the Dr.Web Anti-virus to home users on a monthly subscription basis. Dr.Web AV-Desk public testing is held on the servers of the provider Corbina Telecom (now Beeline). Doctor Web becomes the first company to offer an anti-virus as a service on the Russian market and, to this day, is still the undisputed leader in this segment of the anti-virus market.
- 2007 Dr.Web for Windows Mobile is released.
- Since viruses for mobile devices are scarce at this time, Doctor Web makes the unprecedented decision to provide the product free of charge. The motto: Protection from non-existing threats must be free! Doctor Web adheres to this principle with regard to all its anti-viruses for mobile devices till 2012 when the number of threats to mobile platforms starts growing exponentially.

## 2008

- Doctor Web France opens for business.
- Doctor Web announces that it will no longer participate in comparative tests by the British magazine Virus Bulletin, as they “have little to do with assessing the capabilities that are really in demand in the face of today’s virus threats”.

*“Anti-virus tests have become a marketing tool. Supposedly performed by so-called independent experts, they misguide users who trust them without thinking. The Russian market is flooded with foreign products incorporating state-of-the-art marketing technology but very little anti-virus hi-tech. And while damage to a home system may amount to a few hundred dollars, a large enterprise can meet catastrophe when it adopts a technologically outdated product. This is especially true for government entities”.*

**Igor Danilov during an interview with CNews**

- Dr.Web Office Shield appliance is released. Like many Doctor Web products, it is ahead of its time. In 2012, four years after its release, Dr.Web Office Shield is named top innovation for SMB software by PC Magazine.
- Dr.Web AV-Desk is recognized as one of the best security products in 2007 by PC Magazine.

## 2009

- Doctor Web releases an anti-virus for Mac OS X. The number of viruses for Mac OS X has been negligible only because there have been too few users to make virus writing for Macs profitable; Doctor Web invested in developing this product and is proud of its quality. Only in April 2012, after Doctor Web found a botnet of many thousands of Macs, did Apple release a utility that removes Backdoor.Flashback.39, thus acknowledging de facto the existence of viruses for Macs.

## 2010

- Dr.Web AV-Desk makes it possible to provide business users with the Dr.Web Anti-virus Service.
- The in-house developed firewall has been incorporated into Dr.Web products for home users.
- Doctor Web Pacific opens its office in Japan.

## 2011

- Dr.Web Enterprise Security Suite achieves certification required to deliver software to Gazprom.
- Doctor Web Software Company (Tianjin), Ltd opens in China.

## 2012

- Doctor Web marks the 20th anniversary of Dr.Web anti-virus development.

## 2013

- Doctor Web celebrates its 10th anniversary.



# Technology awarded the quality mark

All rights for Dr.Web technologies are reserved by Doctor Web. Doctor Web is one of the few anti-virus vendors in the world to have its own technologies to detect and cure malware. Dr.Web software incorporates a proprietary anti-virus engine, and the company has its own anti-virus lab and global virus monitoring service.

A variety of technologies to detect and disarm malware is incorporated into Dr.Web software and these technologies are being improved constantly. We'll describe just a few of them.

## The checksum module

The module verifies file checksums against virus database entries, determines their format and initiates curing. This technique is a part of the signature-based search.

## Origins Tracing - non-signature virus detection technology

When scanning, an executable file is considered as a sample that has a certain structure and that structure is compared against database of known malicious patterns. The technology ensures the high probability that viruses not registered in the Dr.Web database will be recognized.

## Heuristic analyzer

The heuristic analyzer is designed to identify new, previously unknown viruses that have no entries in the virus database. The heuristic analyzer relies upon the knowledge (heuristics) about certain properties typical of virus code, and vice versa, that are extremely rare in viruses. Each of these attributes is weighted, that is to say each one is assigned a number whose modulus denotes the importance and severity of the attribute.

## Execution emulation module

Program code execution is emulated to detect polymorphic and highly encrypted viruses, when the search against checksums cannot be applied directly, or is very difficult to be performed (because of the impossibility of building secure signatures). The anti-virus uses an emulator (a CPU simulator and in part a system emulator) to simulate the execution of an analyzed code.

## FLY-CODE

This dynamic unpacking module is designed to extract executable files compressed with an unknown packer. It is an expanded version of the execution emulation module. The module simulates the Windows environment and compares a sequence of viral routines performed by the code against the database of known viral routine sets. This unique universal decompression technology allows viruses disguised with packers unknown to Dr.Web to be detected.

## Static unpacking module

The Static unpacking module is designed to extract executable files, compressed with known packers such as UPX, ASPACK, FSG and ASPROTECT (Dr.Web recognizes about 120 known packers), and to unpack archives such as ARJ, ZIP, RAR, ISO, TAR and other containers. The unpacker extracts the original file and sends it to the top of the scanning procedure.

## Dr.Web Process Heuristic

Protects systems against new, highly prolific malicious programs that are capable of avoiding detection by traditional signature-based analysis and heuristic routines because they haven't yet been analysed in the anti-virus laboratory and, therefore, are unknown to Dr.Web at the moment of intrusion. It analyses behaviour of a suspicious program to determine if it is malignant and takes necessary steps to neutralise the threat, if there is any. It helps minimize losses from actions of an unknown virus.

## Comprehensive analysis of packed threats

The new technology significantly improves the detection of supposedly "new" threats that were known to the Dr.Web virus database before they were concealed by new packers. In addition, with such an analysis there is no need to add redundant definitions of new threats into the virus database. With Dr.Web virus databases kept small, a constant increase in system requirements is not needed. Updates remain traditionally small, while the quality of detection and curing remains at the same traditionally high level.

# The history of Dr.Web versions

Version



1994

2000

2005

2010

2015

# Dr.Web boxed products



2005

2006

2007

2008

2009

2010

2011

2012

2013

## *And what do you think a real anti-virus should be?*

- “– An anti-Virus must be able to detect complex polymorphic viruses without missing a single one.*
- An anti-virus must not only perform its functions flawlessly but also must not annoy the user.*
- It should not lower system performance significantly nor should it notify you in an inhuman voice every second that it has once again saved you from certain death.*
- There is only one criterion – the quality. But, unfortunately, that can only be tested by users themselves”.*

Igor Danilov, from an interview with CNews

