





Bernd Fix

Software & Security Architect
Golang Developer

Born 1962
Marital status married
Nationality German
Location Berlin
Languages German (first),
English (fluent)

Contact  brf@hoi-polloi.org
 +49 160 374 3474
 +49 30 7672 9400
 +49 30 7672 9401

Website <https://hoi-polloi.org/~brf/>

Github <https://github.com/bfix>

Wikipedia https://en.wikipedia.org/wiki/Bernd_Fix



Bernd Fix is engaged in various areas of software architecture and development (especially in the field of computer security) since 1978.

While still a student of physics and philosophy at the University of Heidelberg, he founded BrainON!, a company that developed encryption programs for the European market. As a security expert, he also worked in the field of computer viruses in the '80s; he is credited for being the first to combat a virus in the wild and writing the first documented anti-virus software in 1987. (<http://de.wikipedia.org/wiki/Antivirus>).

In 1998 BrainON! moved to Switzerland and became a stock company with headquarters in Dornach/SO. Until 2003 Bernd Fix served as CTO for the software architecture of all company products.

In 2003 Bernd Fix founded aspector GmbH, based in Zug (later in Zürich). The focus of the company was the architecture and implementation of complex software applications, project management and computer security (encryption, digital signatures, smart cards, penetration testing).

Since 2013 Bernd Fix lives and works in Berlin and mainly serves as a member of the board of the Wau Holland Foundation. He manages various projects of the foundation.

A wide range of knowledge, quick wit and interest in difficult tasks are special abilities that distinguish Bernd Fix.

Skill Overview

(Years denote the date since when a topic was focus of work)

<i>Platforms (Hard- and Software)</i>	<ul style="list-style-type: none"> • Unix: Linux (1998), Sun Solaris, IBM AIX, HP-UX, ... • Virtualization (Docker, Xen, VirtualBox) • Cloud Infrastructure (AWS, Google Cloud) • Plan9 / Inferno • IBM Mainframe (z/OS, MVS, VM) • Chipcards / PIC, Microcontroller
<i>Programming languages</i>	<ul style="list-style-type: none"> • CSP programming: Golang (2010), Limbo • Aspect-oriented programming: AspectJ (2001) • Object-oriented programming: Java (1996), C++ (1990) • C (1986), Perl, Python, Javascript (1996) • Assembler (1978, various processors)
<i>Development environments & Tools</i>	<ul style="list-style-type: none"> • IDE: Eclipse (2003), emacs (UNIX), acme (Plan9/Inferno) • Version Control System: git, subversion, cvs • CI/CD (Jenkins/Hudson, Travis) • (auto-)make, ant, maven
<i>Project Management</i>	<ul style="list-style-type: none"> • Responsibility for the design and implementation of major applications (100k+ lines of code) as technical project manager for internal and external projects.
<i>Methodology / Modeling</i>	<ul style="list-style-type: none"> • XP / Scrum (2008) • UML, ER • CSP, AOP, OOP
<i>Databases</i>	<ul style="list-style-type: none"> • MySQL (2001), SQLite, PostgreSQL, Oracle, IBM DB2 • MongoDB
<i>Network</i>	<ul style="list-style-type: none"> • Protocols and hardware of OSI layers 2 - 4
<i>Middleware & Integration</i>	<ul style="list-style-type: none"> • RESTful API • WebServices, Servlets • CORBA, RMI, RPC • MQ Series, JMF
<i>Web-based Front-Ends</i>	<ul style="list-style-type: none"> • Bootstrap • JQuery
<i>Computer Security</i>	<ul style="list-style-type: none"> • Expert knowledge and experience in various domains (see detailed description)

Specific “computer security” skills

<i>Cryptography</i>	Encryption (RSA, ECC, homomorphic encryption), digital signatures / PKI, hashing, key exchange, crypto hardware (HSM, ICSF, chipcards) and software
<i>Network Security</i>	Attack vectors for all ISO layers (and their protocols) and related devices (routers, switches, etc.); firewalls, IDS, VPN, VLAN
<i>Identity Management and Access Control</i>	Federated Identity Management, SSO (Kerberos), SAML, 2-Factor-Authentication, Rule- and Role-based Access Control, Provisioning
<i>Generic security (OS, applications)</i>	Security Architecture, Reviews and dedicated penetration testing
<i>Enterprise Security Architecture</i>	Compliance requirements and security architectures in large companies, especially in the banking sector. Understanding of IT risk and compliance in complex IT infrastructures

Key activities

<i>(Security) Architecture</i>	Design and specification of solution architectures in demanding and complex environments with an emphasis on “Information Security”, “Compliance” and “Cryptography / PKI”.
<i>Requirement Engineering</i>	Moderate, capture, model and document the requirements for new software systems in cooperation with the customer and company stakeholders.
<i>System Specification</i>	Detail design and specification of solutions based on the requirement specifications of the project. Verification of feasibility (Proof Of Concept) before any actual implementation.
<i>Implementation / Coaching</i>	Advising and coaching the implementation phase and any migration processes including the development on different platforms and programming languages (preferably Golang under Linux).
<i>(Security) Review</i>	Review of designed or implemented software projects in the security environment (including active safety tests and audits) or external evaluations of solution offerings in the RFP process on the requirements catalog.
<i>Documentation</i>	Software and process documentation in the security environment; Process documentation for external audits and ordered evaluators (court case).

Education	Date
Primary School Knesebeck (Lower Saxony / Germany)	1968 - 1972
Secondary School Hankensbüttel (Lower Saxony / Germany) Obtaining a general qualification for university entrance with specialized courses "Mathematics" and "Physics"; overall grade "Good" (1.8)	1972 - 1981
University Göttingen, Basic studies of Physics and Philosophy Pre-degree after four semesters; grade "Very Good"	1982 - 1985
University Heidelberg, Final studies of Physics and Philosophy Attainment of an academic degree (diploma) as "Physicist" with a thesis in "Theoretical Astrophysics" and a minor subject exam on "Philosophical interpretations of quantum mechanics"; overall grade "Good"	1985 - 1989

Professional career	Date
Founding of the company "BrainON!" in Heidelberg <ul style="list-style-type: none"> Self-employed as a software developer (product development in the security environment) Technical consultant in the field of computer security 	1987 - 1998
Lead developer for the architectural CAD system "SPIRIT" at SOFT-TECH, Neustadt a.d.W. <ul style="list-style-type: none"> Focus: 3D design and visualization Company representatives in standardization bodies (STEP) Temporary residency in the United States at a partner company (know-how transfer) 	1989 - 1991
Managing Director for the BrainON AG in Dornach/SO <ul style="list-style-type: none"> CTO und Lead Architect for all software projects of the company 	1998 - 2003
Managing Director for aspektor GmbH, Zug <ul style="list-style-type: none"> Self-employed as a consultant and Security Architect in critical infrastructures and complex environments Internal development of security and compliance applications (product development) 	2003 - 2013

Volunteer mandates	Datum
Founding board member of the Wau Holland Stiftung	2003 – today
Honorary member of the "Chaos Computer Club Zürich"	2012 – today
Spokesperson and board member of „Chaos Computer Club Schweiz“	2013