# Pearce J. Barry

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## Skill sets

- Self-motivated problem-solver: I enjoy diving into challenges (underperforming processes, difficult-to-reproduce bugs, designing complex software, new hardware bring-up, etc.) and continue to work well under pressure. I enjoy finding positive customer/user outcomes.
- Collaboration: I work very well within a group and with other groups (security, IT, software, hardware, QA, support, customer success, manufacturing, sales, the open source community, etc.), striving to communicate clearly and frequently with stakeholders and my team.
- Growth mindset: I'm a lifelong learner and sharer of knowledge (via discussions, conference talks, mentorship, etc.). I also find it very fulfilling to help others grow and further their career/goals.

**Programming Languages**

- Go, Python, C, C++, Ruby, Lua, JavaScript, Java, shell, HTML
- Assembly: x86/x64, ARM, PPC, MIPS

**Operating Systems**

- Unix/*nix: Linux, FreeBSD, Solaris, AIX
- Embedded/RTOS: ThreadX, XOS, TI-RTOS, MQX, MiCOS
- Mobile: iOS, Android
- Apple: macOS
- Microsoft: Windows, DOS

**Toolsets (Security)**

- System/service inventory: nmap, runZero
- Vulnerability scanning: Nessus, Nexpose, InsightVM, Qualys
- Endpoint AV/EDR: Defender, Falcon
- DFIR: Velociraptor
- Appliances: IPS, IDS
- Offensive security / Red Team: Metasploit, Kali, various
- Static code analysis: Coverity, Black Duck
- Dynamic application security testing: InsightAppSec
- Phishing/employee training: various

**Toolsets (SDLC)**

- GNU: gcc/g++, gmake/make, autotools
- Embedded: CodeWarrior, Code Composer, MULTI, Embedded Workbench
- Microsoft: Visual Studio, nmake, masm
- Apple: Xcode
- Version control: git, subversion, CVS, Perforce, Vault
- Debugging: gdb, kdb, ddb, Valgrind, dynamic probes, DTrace, IDE-based
- Profiling: oprofile, cprof, gprof, Vtune, Instruments
- GitHub: code, Issues, Actions, Projects
- CI/CD: Jenkins, CircleCI, Travis, various monitoring

**Virtualization**

- Cloud: AWS, GCP, Azure
- VMWare: Workstation, Fusion ESXi, vSphere, vCloud
- VirtualBox, KVM, Parallels
- Tools: Vagrant, Packer, Terraform
- Containers: Docker, Amazon ECS, LXC
- Serverless: AWS Lambda

## Output and online presence

- Links to tools I've helped create, examples of my code, and other related content/items can be found here: https://pb0.us

## Patents

- "Manipulating Inter-chip Communications For IoT Security" (US 11921912 B1, Published: 2024-03-05)
- "System and method for managing a system of appliances that are attached to a networked file system" (US 20140082129 A1, Published: 2014-03-20)

## Experience

**Amazon** – Senior Security Engineer, Vulnerability Management and Remediation (October 2023 – current)

- Individual contributor within Amazon's Stores Security organization.

**runZero** – Director, Security Research (March 2023 – July 2023); Principal Security Researcher, Manager (June 2021 – March 2023)

- Built+managed the research team. We provided improvements to the runZero product/experience, which included adding new device and service fingerprints, protocols, content creation, enabling sales and customer success teams, and working directly with customers.
- Time was split between people management, content creation (blog posts, podcasts, online challenge), writing application code, research tasks, and adding/maintaining automation, support tickets, and company-needed tasks (like running the overall product release) ad hoc.

**Rapid7** – Manager, Software Development (November 2018 – June 2021)

- Manager of software development within the Offensive Security organization, responsible for up to 12 reports (plus additional resources) working on various projects (some commercial, some community-focused; some in maintenance, some from new-idea through GA).

- Responsibilities also included some social media content creation and management (Twitter, YouTube), plus engagement with customers and the open-source community. Also helped plan+execute community events, such as our annual Metasploit CTF and Open Source Security Meetup, as well as providing and/or participating-in conference talks (DerbyCon, BSides Austin).

**Apple** – Software Developer (March 2018 – November 2018)
- Individual contributor within Apple's Information Security organization.

**Rapid7** – Software Developer (June 2016 – March 2018)
- Reviewer and committer for Metasploit Framework and related open source components, working with open source community members to add new features, fix bugs, and remediate support issues.

**Boundary** – Software Developer (December 2013 – August 2015)
**BMC** (acquired Boundary) – Software Developer (August 2015 – June 2016)
- Part of a small team responsible for a small-footprint, many-platform monitoring agent (development/maintenance/bug-fixing).
- Responsible for building and packaging the agent for a number of diverse operating systems (Linux, Windows, FreeBSD, SmartOS).

**Cache IQ** – Software Developer (July 2010 – November 2012)
**NetApp** (acquired Cache IQ) – Software Developer and team lead (November 2012 – December 2013)
- Provided FreeBSD (kernel drivers/OS) development/porting for a dual-socketed, multi-core Intel Nehalem-based server, including platform/device-drivers, the network stack (like adding VLAN Q-in-Q support before the mainline offered it), libraries, and application work.
- Features and bug fixes via Linux and Python to the Fulcrum Microsystems API for an off-the-shelf 10GbE switch we required be customized

**TippingPoint/ 3COM** – Software Developer (March 2010 – July 2010)
- Maintained 'SYN proxy' code in the IPS engine for mitigating DDoS attacks.

**StorSpeed** – Software Developer (January 2009 – March 2010)
- Provided Linux (kernel drivers/OS) and XOS (RTOS) development/porting/maintenance for a 32-thread XLR Network Processor (NP) based system and a custom 10GbE switch.
- Created custom tools to measure different aspects of performance of an XLR-based system.
- Fulfill Linux requests (i.e. create/modify kernel drivers and OS/Applications) and utilize Fulcrum Microsystems API, adding features and fixing bugs as necessary, for the 10GbE switch product.

**Uplogix** – Software Developer (December 2007 – January 2009)
- Provided all Linux kernel driver and OS development/porting/maintenance for several existing custom hardware platforms and new custom hardware platforms (all x86-based).
- Developed/maintained embedded software for HCS08 processors.

**BreakingPoint** – Software Developer (June 2006 – December 2007)
- Implemented/maintained applications which controlled and monitored high speed Ethernet traffic generation engines (up to 40Gb/s).
- Provided Linux kernel driver development/modification for use on complex, custom hardware.

**Mirage Networks** – Software Developer (July 2005 – June 2006)
- Key provider of system installation and general Linux OS (boot processes, runtime, services, performance, KDB) support.
- Maintained custom and 'stock' kernel drivers, including modifications to the 2.6 kernel.

**Hubbell Building Automation**– Software/Firmware Developer (March 2003 – July 2005)
- Created and supported firmware for custom Coldfire-based touch-screen GUI device and multiple Neuron-based LonWorks devices.
- Supported firmware for an HC12-based device and a MSP430 device, including custom hardware review, bring-up, and troubleshooting.
- Developed and documented test software and procedures for production use.

**Surgient Networks** – Software/Firmware Developer (June 2001 – March 2003)
- Created, modified, and supported ThreadX firmware, Linux applications/OS (port proxying, packet sniffer, boot process, system setup) and drivers (enet, i2c, ecc, serial, ide, custom), as well as customization of Phoenix BIOS. Designed and implemented software for Pentium and PPC processors, including Serverworks x86 and Marvell chipsets.

**Compaq Computer Corporation (Tandem Division)** – Test Engineer IV (Nov 1997 – June 2001)
- Designed and implemented firmware and test software for Motorola 68k and Power PC-based boards, containing PCI, SCSI, VME, Ethernet, ServerNet (network protocol currently proprietary to HP), proprietary ASICs/bridges, flash storage devices, and fiber signal technologies.

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## Education

Bachelor of Science in Computer Science, University of Texas at Austin