℞ Rich A. Marino | Platform Engineer

Phone: +1-857-288-8884
E-Mail: q@rm.vg
Web: https://rm.vg/
Miami Beach, FL | New York, NY

Passionate, personable technologist and engineer. Quick learner, problem solver, and thrives in high-stakes environment.
Very passionate about making things run as fast and reliably as possible.
Specialties in high performance trading infrastructure, networking, virtualization, and operating systems, both with respect to development and implementation.
Expertise in both Windows and Unix environments, heavy professional user of C, C++, C#.

Professional Experience

Millennium Management   (June 2023 - Present)

○ Provided crucial support for a latency-critical options trading strategy, effectively resolving outages and deploying necessary infrastructure in a timely manner.
○ Innovatively developed proprietary tools aimed at optimizing workflow efficiency. (C#, Shell)
○ Played an integral role in the systematic trading on-call rotation, offering comprehensive support across diverse trading systems.

CrowdStrike (temp)   (January 2023 - June 2023)

○ Contributed expertise rebuilding virtualization infrastructure that backs hybrid-analysis.com, as well as fixes to kernel-mode Windows driver code.

Robinhood Markets (Consulting)   (December 2021 - January 2023)

○ Designed and deployed secure and compliant Windows infrastructure from the ground up in formerly Mac-only environment.
  ○ Deployed Microsoft InTune, Azure AD, and Azure VDI from the ground up.
  ○ Implemented deployment and process automation for Windows and other systems.
  ○ Designed and implemented platform security models based on CIS baselines in cooperation with security experts.
  ○ Stabilized, secured, and later replaced a haphazardly deployed Amazon AWS Workspaces infrastructure.
○ Managed and implemented MDM solutions for macOS, ChromeOS, iOS and Android.

Consulting   (February 2017 - Present)

○ Deployed a high-performance global anycast network with points of presence on 6 continents (AS 207419 Richard Marino).
○ Assisted clients with a wide range of IT services, troubleshooting, and implementation.
○ Implemented Enterprise connectivity across multiple physical sites.
○ Deployed line of business infrastructure and applications for point of sale.
○ Deployed A/V, digital media, and digital signage solutions.

Confidential   (November 2020 - March 2023)

○ Developed custom GIS/mapping application from the ground up, including both data and rendering layers.
○ Designed and developed a commercial address geocoding service.
○ Designed and developed a custom tailored application utilizing advanced algorithms to optimize door to door delivery services.

D.E. Shaw & Co.   (August 2018 - November 2020)

○ Assisted in maintenance and diagnostics of UDP multicast market data feed lines.
○ Revamped and rebuilt company-wide monitoring infrastructure by implementing Telegraf, Prometheus, Grafana and Microsoft System Center Operations Manager (SCOM) from the ground up on both Windows and Linux.
○ Contributed to a high-level ops rotation administering Windows and Linux systems, as well as network infrastructure.
○ Assisted in development, implementation, and operation of a new HPC cluster / compute grid scheduling application. (Python)
○ Developed low level tooling to investigate Windows driver memory bugs. (C)
○ Contributed significant expertise to developing a secure and segregated Linux and Windows computing environment to facilitate trustworthy computing in an extremely untrustworthy environment for a new office in China.

Acuity Brands Lighting   (March 2017 - August 2018)

○ Configured and maintained critical product build servers and CI/CD pipelines (VSTS, InstallShield)
○ Rebuilt a critical build server, which resolved significant delays and improved development efficiency. (VSTS)
○ Designed and built an API to allow efficient access to commercial lighting controlled by the nLight protocol. (C++, C)
○ Implemented a cloud-first firmware update service for embedded products from the ground up. (Azure, .net Core, C#, Web front-end)
○ Implemented JSON parsing on extremely resource-constrained devices.
○ Contributed expertise towards integration of a new wireless nLight product into the existing platform. (C#)

Microsoft   (May 2015 - Nov 2016)

Windows Fresh Start   (Dec 2015 - Nov 2016)

○ Designed and built a Windows feature that can quickly clean a PC of all software while keeping drivers and files. (C, C#, C++)
○ Experimentally implemented automatic user-mode application virutalization and containerization. (C, C++)
○ Implemented various graphic user interface (GUI) components. (C#)

Windows Networking   (May 2015 - Dec 2015)

○ Led bug fixes across an enormous codebase (Windows) while in charge of maintaining VPN, Enterprise Wi-Fi, and Ethernet features.
○ Utilized big data analysis expertise to answer business questions. (SQL, internal technology)
○ Designed test software for Hyper-V Software Defined Networking Quality of Service. (Hyper-V, TCP/UDP, C, C++)

Microsoft Intern Program (May 2014 - August 2014) - Windows Networking

○ Developed a Cloud Platform System (Azure Stack) orchestration and management client, utilizing REST/JSON.
○ Contributed to Windows NDIS source code, wrote the first network device driver for Windows 10 (C)

Microsoft Intern Program (May 2013 - August 2013) - Windows Networking

○ Developed a UDP NAT (Network Address Translator) and Router. (C, C#)
○ Created software to orchestrate a dynamic TCP/IP traffic stress test across thousands of VMs and hosts in a multi-tenant environment. (C++)

Microsoft Intern Program (May 2012 - August 2012) - Windows Networking

○ Designed and developed an automated test system for Connected Standby low power mode. (C)
○ Created tooling to track and graph Windows Connected Standby sleep states, and system power consumption. (C, C++)

Professional, Independent and University Projects

Windows Kernel-mode Memory Map (C, C++, 2019)
○ Implemented a tool that maps kernel-mode memory allocations on Windows to assist in diagnosing kernel-mode memory leaks,

Hidden DNS Services (NodeJS, 2017)
○ Wrote an authoritative DNS server that allowed for both normal lookups and steganographic traffic tunneling and data exfiltration.
○ Developed a client that exposed a SOCKS proxy that tunneled arbitrary traffic over DNS.
○ Developed a client / server application that could provide access to specific web pages as TXT records.

Performant PHP Web Server (2013 - 2014)
○ Developed a full, high-performance web server written in PHP.

High Performance University CMS and style sheet (2010-2014)
○ Built a content management system to facilitate user uploaded and designed web pages by untrusted parties.

Near Field File Sharing (PHP, Node, 2014)
○ Developed software to facilitate quick and easy sharing of files between physically near computers via UDP Multicast or Internet.
○ Conducted extensive research into platform-agnostic zero-config communication.

iBeacon payment and location tracking platform (2014)
○ Designed and built out an experimental platform for locating customers within a retail environment, tracking their movements, and facilitating payments and interactions with other objects based on location within the building.
○ Implemented an iBeacon simulation API and front-end to allow for demonstration and testing of this platform.

Bootable Tor Hidden Site Server (2013 - 2014)
○ Created a minimal embedded Linux system that could be booted from read-only media and serve a Tor hidden site.
○ Utilized the Performant PHP Web Server (mentioned above).

Small Windows 95 (2007, 2010)
○ Created a Windows 95 installation that could be booted from floppies without other local storage for running specific embedded applications.
○ Componentization and dependency mapping was used to only include components required by the specialized applications that would be used, similar to standard Windows XP Embedded.

Hackathon Projects

WubLink
○ Developed backend for an app that allows crowd interaction with a live DJ that authenticates via an audio watermark.

Ultimate Party Playlist
○ Developed a web app that analyzed Facebook friends at an event, then created RDIO playlist based on collective interests.

GoToEvent
○ Developed a web app that allowed sending and tracking of event invitations via E-Mail, SMS, and telephone calls via Twilio.

Other Experience and Awards

UHACK 2014 - 2nd Place Winner:
○ Ultimate Party Playlist

UHACK 2012 - Best Use of Twilio:
○ GoToEvent

Engineering Advisory Board (University of Miami)
○ Director of Technology (Jan 2011 - May 2014)

Dickinson Scholarship, University of Miami

EPA 608 and 609 Certified Technician

Autonomous System: AS207419 Richard Marino

Education

University of Miami (Miami, FL)
2010 - 2014, Computer Software Engineering / Computer Science

Expertise

Programming Languages	C C++ C# Java Erlang Elixer
Scripting / Query Languages	PowerShell Python PHP Perl Shell / Bash Windows Batch JavaScript SQL PromQL Verilog VHDL
Databases	Microsoft SQL Server Oracle SQL Server PostgreSQL PostGIS / PGrouting sqlite redis MySQL
System Management	Okta Microsoft InTune VMWare Workspace One / AirWatch Azure Virtual Desktops Amazon AWS Workspaces MicroMDM Santa Active Directory Puppet
Servers	VMWare ESXi nginx Apache IIS Citrix XenApp System Center SCOM SCCM Prometheus Grafana Telegraph (monitoring application) GitHub Enterprise Microsoft SQL Server NetApp Enterprise Vault macOS Server
Operating Systems (Development and Administration)	Windows Server 2012-Present Windows 8, 8.1, 10 Linux (RHEL, CentOS, Ubuntu, Debian) OpenBSD Unix macOS FreeBSD
Legacy Systems (Development and Administration)	Windows XP, Vista, 7 Windows Server 2000 / 2003 / 2008 Windows 9x Windows NT Windows 3.x OS/2 Citrix WinFrame MS-DOS
APIs	WINAPI / Win32s MFC Windows Forms WPF WinSock
Applications	Adobe Audition Adobe Illustrator Adobe InDesign Adobe Photoshop Adobe Premiere AutoCAD COMSOL MultiPhysics Maple MATLAB Transsoft GUIDSign Microsoft Visio Microsoft Project
Development Tools	Git Perforce SVN Vim Xcode Visual Studio Visual Studio Team Services Visual Basic for Applications
Networking	Cisco iOS Ubiquiti UniFi Client / Server programming Low-level stack and driver implementation zScaler
Cloud	Microsoft Azure Amazon AWS Google Cloud DigitalOcean Vultr Twilio Office 365
Networking	TCP/IP UDP VLAN NAT DHCP DNS BGP OSPF PXE