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Objective:

To utilize my broad range of skills and experiences to serve productive and principled companies, employees, clients and customers with a broad view to benefit social, economic and technological progress.

Experience:

Summary:

For more than 25 years I have been coupling a diverse set of knowledge and skills with rapid learning ability to allow the businesses and people I serve to comfortably navigate between the forest and the trees. This requires both a high level command of many subject areas across the high-tech landscape as well as a disciplined approach to incorporating many varied technologies into business processes with a keen eye for detail. This means translating various technologies for the specific context that will best serve a project's needs, but usually also means wearing many hats and providing new and unique insights based on a synthesis of ideas from multiple disciplines.

At the core of my work, I have repeatedly performed UNIX and Linux platform design and deployment, and automation of numerous systems and business processes. These also frequently incorporate security design and implementation, networking, debugging and maintenance, and include the support of both physical hardware and virtualized environments. I also have experience with the development of middleware, server applications, and developer and IT tools in all major phases of the software development life cycle. This is all augmented by a strong aptitude for mathematics and logic, understanding of computer hardware, knowledge of operating systems design and internals, and a commitment to high quality standards. It is reinforced through the application of a variety of testing methodologies and through the development and maintenance of robust and context optimized processes.

I excel at learning new things and at identifying and solving difficult and unusual problems. I take the initiative to make improvements and am willing to take on work that others do not want to do, do not know how to do, or cannot complete. I am also passionate about education and the communication of ideas to empower others to productively participate and to find their own path to success.

Skills:

Programming Languages: Primarily C, C++, [Sparc, x86 and 68000 Series] Assembly Languages, Bash, korn, sed, awk, PERL, expect, SQL. Also varied levels of familiarity and experience with many other compiled and scripting languages including python, PHP, java, javascript, HTML, pascal, and BASIC.

Operating Systems: Linux (Early free to current Red Hat Enterprise Linux [RHCE Jan. 2003], Fedora, SUSE, Ubuntu, Mint), AIX 4.x and up, SunOS 4.0-Solaris 10, HP-UX 11.x, Early DOS and Microsoft Windows to Windows 10.

Hardware Platforms: Many varied Intel x86 and x64 platforms, PPC Macintosh, IBM POWER PC, Sun Sparc / Sparc64.

Virtualization / Containerization: VMWare ESXi, Workstation, and Server, Linux KVM/QEMU/libvirt, VirtualBox, Docker, IBM POWER LPAR virtualization, and primitive pre-containerization UNIX process isolation methodologies.

Systems methodologies: Operating system and database, and file systems backups, conversions and recovery including data recovery, basic data forensics and operating systems reconstruction. P2P, P2V and V2V system conversions. VM migration and reshaping. Dynamic virtual resource allocation and management. Basic and commodity clustering and high availability (fail-over and load-sharing). Distributed computing.

Physical Networking: Ethernet, FibreChannel, Token Ring, Fiber Optic, serial and parallel communications.

Networking Technologies/Methodologies: LAN and WAN routing, SAN, bridging, firewalls, VLAN, VPN, multi-homed and clustered network configurations, extensive experience with complex physical and logical topologies with multiple simultaneous physical formats and network protocols.

Storage Technologies: IDE, SCSI, SAS, SATA, and FibreChannel storage systems, including multi-pathed, multi-initiator, SAN and direct attached configurations. Extensive use of LVM, redundant LVM, hardware RAID, software RAID configurations. NAS storage and backup solutions. Multiple tape and enterprise tape library backup systems.

Process Methodologies: Application and optimization of ISO processes. Continuous improvement (Kaizen). Continuous integration, continuous delivery and continuous deployment. Internal security process design, maintenance, and implementation. Integration of external security process requirements. Various approaches to software testing and quality assurance.

DevOps Tooling: BitBucket, GitHub, Jenkins, Artifactory. Integrations: Slack, JIRA, Confluence, Sonar Qube, Snyk.

Employment:

Feb. 2024: (Contract position with Triple Crown Consulting)
DevOps, Docker, and Kubernetes Instructor at Zetron in Seattle, Washington

Taught an all-day, one-full-week course in Docker, Kubernetes and DevOps concepts for Zetron's staff from several of its global offices.

- Taught half-day sessions of lecture, demonstration, and Q&A sessions for staff from several global offices.
- Led half-day mostly in-person sessions with hands-on lab exercises with a goal of containerized builds and execution of company products.
- Collaborated with company subject matter experts to launch a pilot of container and container orchestration technology use in their product development life-cycle.

Sep. 2018 – May 2022: (Contract position with Triple Crown Consulting)
DevOps Liaison and Build Engineer for Cray (HPE – Cray products) in Austin, Texas

Brought new outside DevOps perspectives to Cray EX software development. Supported continuous integration (CI) conversions on a company-wide Git and Jenkins based environment. Liaised with the central DevOps team to support and translate the unique work-flows and requirements of switch controller firmware, node firmware and BIOS development. Served product architects, product owners and management through the Cray HPE acquisition and initial audit and implementation of HPE corporate security policy for the teams' production development and build environments.

- Designed, deployed and maintained high-end SUSE / KVM hypervisors and templated developer and production build engine virtual machines.
- Led the development and standardization of Jenkins CI build definitions to support developer builds, and production release and patch builds.
- Helped define work-flows and manage Git based source control policies for BitBucket and GitHub.
- Managed access and security for source control, developer systems, and production build engines.
- Managed production build artifacts and product flow to the upstream HPC integrated software releases.
- Developed and supported SUSE, RHEL, Debian, and Ubuntu based Docker build environment container images.
- Supported container based build work-flow framework to support building Debian based packages and embedded Linux firmware images Slingshot switches.
- Supported BIOS development environments targeting multiple AMD and Intel processor based nodes.
- Developed SUSE native and Docker based containers to support Buildroot cross-compile target toolchain builds with RPM packaging and Buildroot ARM host target boot images for node firmware.
- Helped product owners manage product releases and patches for their components and Cray integrated releases.

May 2012 – Dec. 2017: (Contract position with CDI Corp.)
Production Build Engineer for IBM Security Software in Austin, Texas

Ran almost all aspects of a production build environment and lab facility in a two person team. Provided custom tailored support for a significant portfolio of IBM access, identity and directory products on a wide variety of hardware and operating system platforms. Served IBM software teams and management for new and released-maintenance products.

Lead Roles:

- Performed most aspects of production lab/data-center management including physical (lab bench and rack layout), environmental (cooling and electrical load balancing), multiple hardware platforms, multiple physical and logical networks, hyper-visor configuration and management, operating systems installation and maintenance, establishment and maintenance of vital network services, infrastructure automation.
- Data management roles include data storage strategies, data security, data flow design and optimization.
    - Provided for the performance, availability, integrity and validation of third party source artifacts, source code obtained from source control, tools, system and VM images, and build environment produced artifacts.
    - Provided for protection and verify-ability of both IBM IP assets (source and artifacts) and assets comprising the production environment itself.
    - Performed backup automation, space management, and backup validation.
- Planned for lab resource and performance needs.
- Performed hardware (systems and network) acquisition, upgrades, assembly and repair.
- Implemented secure remote environment administration methods.
- Established isolated and protected networks for sensitive and non-secured assets including legacy platforms, hardware management interfaces, and core lab infrastructure.
- Responsible for maintenance, security implementation and administration of a repository server hosting sensitive and export controlled software artifacts.

Shared roles:

- Ensuring the integrity, availability and stability of production build services.
- Design, testing, implementation and maintenance of automation and tooling for all areas of the environment.
- Evaluation of third party and open-source products for our environment including product security and suitability.
- Design, implementation, monitoring and documentation of environment security.
- Integration with or documented exceptions to IBM corporate security policy.
- Process compliance documentation and implementation.
- Technical and internal customer documentation and education.
- Learning and development of processes and infrastructure to support additional or new software development methodologies including CI-CD and cloud based products.

Roles as backup or secondary:

- Build process automation and architecture.
- Integration of new customer product builds into the environment.
- Customer communication, build monitoring, support and debugging.
- Build tool-chain installation and configuration.
- Artifact publication automation, debugging and maintenance.
- Administration and maintenance of multiple build automation frameworks.

Accomplishments:

- Led efforts to maximize platform virtualization, improve storage performance and reliability, minimize production downtime, enhance network and platform security, and generally automate as much as possible.
- Virtualized almost all platforms possible including network infrastructure servers.
- Reduced disk failure based storage outages to almost zero, and facilitated the rapid growth of storage capacity.
- Deployed a complex set of private networks and network infrastructure to enhance our security profile, provide for improved secure remote administration, and enable needed physical and virtualized growth.
- Maintained and enhanced the ability to provide a full array of high quality tailored services for our customers at a fraction of the cost per-product compared with centralized build services or allocation of per-product headcount.
- Initiated a process to apply CI-CD style practices and “configuration as code” to the deployment and management of build environment platforms, infrastructure, and build engine resources.

Oct. 2007 – Apr 2012: (Contract position with CDI Corp.)
Level 3 Support for IBM/Tivoli Access Manager for Operating Systems in Austin, Texas

Supported debugging and development of fix-packs requiring both application, systems, and kernel level development skills and an in depth knowledge of UNIX operating system design and security for AIX, HP-UX, Solaris, and Linux. This product enhanced operating system security using centralized and cross platform security policy management.

- Learned Sparc assembly language to debug a problematic third party product interaction in Solaris kernel space, to produce defect recreation software, and to correct errant assembly language product code.
- Authored a system call invocation test application with command line and script support. Employed this tool with a complex state matrix to formally prove a no-solution case within the design of the product's security architecture.
- Performed ssh interoperability testing with platform and third party ssh products to determine and document proper product configuration and to verify proper implementation of security policy.
- Updated the product's build process to extend platform support to newer versions of Linux.
- Utilized virtualization to reduce hardware needs and enhance our abilities to produce test builds and deploy platforms for fix-pack testing and defect reproduction.
- Performed defect and regression testing to validate product fixes and proper function.
- Obtained one of my most valued professional compliments from my IBM manager in this position, "We give you so many of the hardest problems because everybody else would eventually give up where you keep going until the problem is solved."

Dec. 2005 – Jan 2008: (contract position with CDI Corp and IBM Global Services)
AIX/Linux Administrator and Help Desk at Sony-Toshiba-IBM design center in Austin, Texas

Provided a wide array of UNIX administration skills, including supporting automation, network support, hardware maintenance, and user support for AIX, Linux, DCE, and AFS for The STI (Sony, Toshiba, IBM) design center as well as other IBM semiconductor design teams.

- Installed and maintained AIX and Linux based user workstations, CAD servers and simulation farm servers.
- Responsible to understand and implement IBM and STI security policies as well as technical and administrative security procedures protecting each entity and their Intellectual property interests.
- Assisted in proper packaging of Linux SSH software with IBM AFS authentication support and token passing.
- Educated IBM engineers in advanced SSH techniques to enable robust and safe security boundary traversal.
- Automated large scale operating system upgrade cycles reducing to 25% of earlier upgrades.
- Developed and documented an automated build and installation process enabling deployment of Apache web

server and PHP from latest source and IBM internal patches for AFS support targeting production AIX servers.
- Provided much needed expertise to track down, identify and characterize an AFS bug that was regularly causing severe production slowdowns and system hangs.

Mar. 2003 – Dec. 2005: (contract position with PEC Solutions)
Red Hat Certified Engineer for U.S. Courts Administrative Office Support Branch in San Antonio, Texas

Provided technical leadership and expertise for the U.S. Courts Solaris to Linux migration project.
- Developed tools to automate system configuration and to automate file systems and database data migration between Solaris 7/Intel and Red Hat Enterprise Linux 3.
- Identified and demonstrated a mass storage performance falloff and then led a project to perform automated restructuring of data storage resulting in greatly improved file-system performance.
- Developed baseline system configurations including a framework for standardized iptables rule-sets.
- Developed a custom bootable Linux CD for data migration and operating system and network troubleshooting.
- Provided vital expertise and experience in architecting and maintaining a customized Red Hat Enterprise Linux installation media and distribution.
- Performed configuration and administration of a Red Hat Enterprise Network Satellite Server and provided recommendations to minimize end user impact, reduce administrative costs and minimize administrator error.
- Provided on-site, e-mail and phone support and troubleshooting of software, hardware, operating systems administration, and networks for court personnel.
- Identified many potential problems prior to deployment through testing and design analysis as well as code and documentation reviews of work performed by other members of the Linux migration team.
- Served as a point of contact with the Red Hat Technical Account Manager for the U. S. Courts to escalate operating system issues and identify bugs in the Red Hat operating system.
- Made recommendations on hardware purchasing decisions and configuration.
- Performed diagnostics and troubleshooting of software and hardware failures and malfunctions.
- Conducted an extensive (six month) Red Hat Linux training curriculum to prepare U.S. Court employees and contractors for Linux certification, software deployment, migration and support of the operating system platform.
- Conducted several short training sessions, in both classroom and teleconference settings, teaching subjects such as RPM development, RHN satellite server concepts, integrating and distributing software within established Red Hat system frameworks, and integrating unsupported device drivers into the Red Hat Linux kernel.
- Produced a wide variety of technical and non-technical documentation.
- Reviewed resumes, interviewed candidates and made hiring recommendations for the Linux migration team.

Aug. 2001 – Feb. 2003:
Independent Computer Consultant in Austin, Texas

Served clients in the greater Austin area with a wide variety of computer hardware, software and network services.
- Installed configured and maintained networking and network security in the forms of LAN, internet access, VPNs, firewall configurations.
- Developed administrative tools and client configuration tools for Linux firewalls, VPNs, and secured servers.
- Utilized simple tools and system logging to monitor systems in order to perform threat analysis and detect attempted and actual break-ins.
- Performed intrusion analysis identifing the nature of a break-in, source of the attacker, and extent of damage.
- Provided clients with valuable recommendations to enhance network security.
- Provided on-site, e-mail and phone support of software, hardware, operating systems, and networks.
- Performed hardware assembly, upgrades and replacements of client computers.
- Performed diagnostics and troubleshooting and repairs of computer hardware failures and malfunctions.

May 2000 – Jul. 2001:
Systems Engineer at EriQa Labs in Austin, Texas

Led as the first employee and lead systems engineer for this start-up software testing and QA company.
- Functioned as the company's CSO, chief software architect and systems infrastructure architect.
- Developed long term technical strategies for EriQa Labs
- Researched security practices, networking services, and data-center automation.
- Developed road-maps for future research, development, and implementation.
- Sized costs and duration of development and implementation projects.
- Wrote and reviewed procedures and policies to establish a secure and process controlled testing environment.
- Developed an automated network install framework based on Red Hat's anaconda/kickstart install software.
- Designed physical and logical network topologies as well as data flow and firewall architecture to minimize network vulnerabilities.
- Utilized simple tools and system logging to monitor company systems for threat analysis and intrusion detection.

- Determined company procedures and policies to address potential security threats in the areas of data handling, human error, social engineering, and malicious employee or customer activities.
- Devised network topologies to create a secured, dynamically configurable, multi-domain, network environment.
- Developed, installed, configured, administered and maintained Red Hat Linux based network appliance systems comprising the corporate network infrastructure including DNS, e-mail, web services, and firewalls.
- Responsible for hardware purchasing decisions optimizing the company's technical requirements and prices.
- Acted as EriQa Labs' technical liaison for software issues with our customers.
- Trained test developers and testers on product design and features to be tested as part of customer projects.
- Development of automated software test cases.

Feb. 1997 – Apr. 2000:
Software Engineer at IBM in Austin, Texas

Maintained and implemented a enterprise scale software testing facility. Developed software test applications and performed systems testing for IBM DCE, IBM LDAP, and IBM Single Sign-On products on several UNIX, Windows and OS/2 platforms.

- Developed test software ranging from small scripted tests to major components of large test applications.
- Designed and implemented a distributed scripting language framework for cross-platform testing of distributed software enabling dramatically reduced time requirements for test case install, configuration, and execution times (from days to hours with larger DCE cell configurations). This framework also proved valuable for test lab inventory and auditing.
- Implemented an automated test case build server for IBM DCE test applications which also served to provide effective testing of DCE API's, IDL files, header files, and libraries.
- Performed verification testing of the IBM DCE implementation of Kerberos and verified proper and secure functionality of both the security functions and interoperability with other Kerberos network clients.
- Performed physical and logical network layout, wiring, maintenance and troubleshooting, including routers, protocol bridges, and firewalls including many Linux based ipchains and iptables firewalls.
- Managed test lab resources for a 30 person department consisting of about 100 user accounts, hundreds of systems, thousands of IP addresses including operating System and application software storage, maintenance and distribution. Also including hardware and network equipment installation, configuration, diagnosis, and repair.
- Configured and maintained AIX NIM (Network Install Management) and Linux network install servers.
- Designed and implemented a complex Internet simulator using over 30 Linux PC routers.
- Used network sniffers and packet capture software to monitor, analyze and debug networks.

Jun. 1996 – Jan. 1997: (Co-op position)
Sort Engineer at Intel in Rio Rancho, New Mexico

Performed many of the major duties of a regular sort engineer and contributed to production automation efforts as well as development of sort engineering process and automation tooling.

- Trained on Intel's continuous improvement process and made several important contributions to improving the Intel production line.
- Performed troubleshooting, bug analysis, failure analysis, and debugging of vendor and internal software products used to run automated die level wafer testers running in a manufacturing production environment.
- Built automation tools for data analysis and decision-making, resulting in the streamlining of the sort phase of processor production and enabling the transfer of routine engineering decisions to production floor technicians.
- Developed a tool to compile Intel processor sort data for defect visualization.
- Presented daily reports on product quality to engineers throughout the production line at Intel.
- Determined the disposition of products in the sort-testing phase of Intel's primary processor production line.

Education:

B.A.- Computer Science and Psychology / Minor – Mathematics, Jan. 1997
Case Western Reserve University, Cleveland, Ohio
GPA = 3.36/4.00 / Presidential Scholarship / Dean's High Honor List
Additional extensive studies in biology and chemistry