ERIC COZZI

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Senior Unix/Windows Software Architect

Overview

As a **Senior Software Engineer** and **Technical Lead**, I have over 20-years of proven experience in the design, prototype, development and debugging of commercial software products. With *several pending patents*, I am an expert in the development of high-quality, innovative product solutions, with a specialization in TCP & UDP networking. Skilled in all phases of the software development project life cycle, I have taken products from customer requirements through to implementation and enhancement in both pre-IPO and Fortune-100 companies. My key qualifications include:

- C / C++ / Python
- Linux & Windows Development
- Cross Platform Development
- TCP, UDP & Multicast Networking
- VoIP (RTP/RTCP/SIP/RTSP)
- Standards Based Development

- Innovator & Patent Inventor
- Multi-threaded server design
- Code Refactoring using Design Patterns
- Cloud Computing
- Application Debugging

- Agile Development Process
- Test Driven Development
- Specification Development
- Modern Tools and Processes: git, Jira, Jenkins, Json/Yaml, Ansible
- Effective use of open source projects

Experience

Cray, Inc., Saint Paul, MN

Software Engineer III, OSIO Cray Management Systems (CMS)   *2012-Current*

Cray is a global leader in supercomputing; designing and building the worlds most advanced computing systems for government, industry and academia. Initially hired as a contractor, I was hired permanently in November 2014.

Development of OpenStack Managed E-Login Node (Novemnber 2014 – Current)

- Develop an OpenStack Ironic managed "Cray External Login (E-Login) Node" infrastructure. The E-Login node is a more powerful commodity box than Cray's proprietary "Internal-Login Node", allowing additional user access and faster compilation and submission of jobs.
  #### DAILY RESPONSIBILITIES
  - Help to define and "bring up" External Login Node Centos linux image.
  - Develop Ansible plays & roles to perform configuration management of the E-Login Node
  - Work with OpenStack services (Keystone, Nova, Glance, Heat, …) on the Cray Management Server (CiMS)

Automated Cray-Installation Testing (February 2014 – November 2014)

- Develop a Python application to automate and test the installation of Cray's software within a VirtualBox environment with the goal of increased product quality and reduced need for testing on real Cray hardware.
  #### DAILY RESPONSIBILITIES
  - Work in Python to develop and enhance support for additional testing scenarios.
  - Triage installation failures and open bugs for responsible parties.

Enabled Network Connectivity between disparate Cray networks (October 2013 – February 2014)

- Develop a Python application to automatically analyze and configure network firewall, IP forwarding and IP routing rules on various nodes internal and external to the Cray, in order to enable IP connectivity across several interconnected networks for the purposes of enabling the deployment of OpenStack technologies to the Cray.
  #### DAILY RESPONSIBILITIES
  - Work in Python to prototype, develop & test script to enable IP routing within the Cray Super Computer
  - Work with cross functional product teams to validate network security and assess customer concerns.

Cray Message Bus (November 2012 – October 2013)

- Research, propose and develop a custom "Message Bus" solution to enable nodes both inside and outside the Cray supercomputer to effectively and efficiently communicate & perform RPC request/response operations.
  #### DAILY RESPONSIBILITIES
  - Research and perform detailed review of available open-source and commercial Message Bus technologies including RabbitMQ, ZeroMQ, Yami4, ZeroC ICE, OpenSplice DDS.
  - Worked in C/C++ to prototype message bus implementation for Cray scale-out.

Sococo, Mountain View, CA & Twin Cities, MN   **2010 – 2012**
Senior Software/Network Infrastructure Engineer

Sococo Team Space is a real-time, high-availability SAAS application offering a virtual online "office" environment. Using the Team Space client, Team Space members can login to their virtual office from the comfort of their home, or remote location, click into each others offices or a shared conference room, and talk, share screens & video, make phone calls and chat instantaneously all with the ease of the cloud.

- Architected, developed and operationally oversaw Sococo's PSTN VoIP Gateway infrastructure. The PSTN VoIP Gateway is a C/C++, real-time, multi-threaded, high-availability, cloud-based, client/server Linux daemon enabling Sococo Team Space's 25,000+ members to make telephone calls directly from within the Sococo Team Space environment. Direct Incoming Dial (DID) and standard PBX features were spec'ed, but never fully developed.
  - **DAILY RESPONSIBILITIES**
    - Work in C/C++ to develop, maintain and enhance the product, including finding solutions to customer reported issues and issues seen through advanced system monitoring.
    - Work with QA/Dev-Test on bug validation and verification.
    - Work with Product Management to schedule deployment of new releases and deploying new versions to various operational environments (production/pre-production/development).
- Contributed to the development of Sococo's cross-platform (Windows, Linux, Mac and iOS) abstraction layer and core application engine as a member of the 6-person Client Platform Team using the Agile development process.
  - **DAILY RESPONSIBILITIES**
    - Work in C/C++ to develop cross-platform architecture driven product solutions.
    - Develop unit tests and document code design through the use of UML.
    - Maintain and extend proprietary UDP communications protocol.
- Filed patent application with the United States Patent and Trademark Office.

Cisco Systems, Inc., San Jose, CA   **2005 – 2010**
Software Engineer IV

Cisco Systems is a leading supplier of networking solutions including network routers, switches and VoIP & video conferencing solutions. Worked in Cisco's elite Emerging Technologies Group tasked with developing and incubating next-generation, $Billion product ideas.

- Contributed to the development of the Cisco IPICS product which enables comprehensive communication interoperability and incident management/response between disparate IP and RF based radio networks. Served as Senior Engineer since the product's inception and Technical Lead for 3.0/4.0 versions.
  - **DAILY RESPONSIBILITIES**
    - Work in C/C++ to develop and enhance the GUI, MVC business layer and various state machines.
    - Work in C/C++ to develop and enhance the SIP and RTP/RTCP over UDP/Mutlicast media stacks.
    - Work in C/C++ to develop, enhance and maintain a proprietary radio control request/response protocol utilizing custom RTP payload to dynamically tune connected radio base stations.
    - Translate product requirements into Software Design Specification (SDS) documents.
- Filed multiple patent applications with the United States Patent and Trademark Office.
- Earned Cisco Certified Network Associate (CCNA) certification.

Level(3) Communications, Inc., Sunnyvale, CA   **2001 – 2005**
Senior Software Engineer

Level(3) Communications, formerly Telverse Communications, built wholesale and retail VoIP, video and data communication services delivered over broadband communication networks.

- Developed and maintained C/C++ based internal customer provisioning system. This system integrated several seperate systems (Billing, Dial Tone, Voicemail, et. al) utilizing a common MySQL database.
- Developed a multi-threaded, HTTP-enabled report server to automatically analyze customers' call-usage data and generate statistical reports for management consumption.
- Developed and branded Microsoft Outlook plug-in to enable Telverse functionality.

SurfControl, Inc., Sunnyvale, CA   1997 – 2001
Senior SurfWatch Software Engineer

When installed on a PC, enterprise-proxy server or corporate firewall, SurfWatch prevents access to Internet sites deemed inappropriate, including those which are sexually explicit or a variety of other categories.

- Primary developer in charge of the SurfWatch SDK, a C/C++, cross-platform, multi-threaded API that translates a URL into a block or allow response as determined by SurfWatch's criteria and filters. The SDK is the core of all SurfWatch's server-based filtering products.
- Lead redesign of backend customer subscription system. This high-traffic, mission critical system enforced SurfWatch's business policies while allowing users access to updated SurfWatch filters.
- Developed the SurfWatch for Windows 98 product which utilized the Winsock 2.0 Service Provider interface.

Mustang Software, Inc., Sunnyvale, CA   1994 – 1997
Software Engineer

Mustang Software was the leading developer of Bulletin Board Systems (BBS's) providing online messaging, file transfer and interactive gaming before the Internet became popular.

- Project lead and primary developer in charge of the Wildcat! Navigator, an AOL-style graphical interface to Wildcat!'s traditional ASCII/ANSI interface.
- Developed and documented the Wildcat! Navigator Software Development Kit.

Online Computer Resources, Vallejo, CA   1991 – 1994
Software Engineer

Online Computer Resources was a developer of third party add-on applications for Mustang Software's Wildcat! BBS.

- Developer on the WildMail! FidoNet Mail Tosser for FidoNet based Mail Exchange
- Developer on the WildUUCP! Mail Tosser for UUCP based Mail Exchange

Skills	Platforms:	Linux (RHEL, SuSE), UNIX, Microsoft Windows
	Languages:	C/C++, Python, Shell Scripting, HTML, XML, RegEx
	Tools:	Visual C++, vim, grep, FTP, SCP, SSH, svn, Jira, Confluence, T-Wiki, TeamCity, Jenkins, Audacity, tcpdump, WireShark, Microsoft Network Monitor, Charles Proxy, Zoom Profiler, gdb, windbg

Patents
- Communication System with State Dependent Parameters (pending), Cisco Systems, filed 2007
- Managing Status and Access for a Variable Source Content Stream (pending), Cisco Systems, filed 2007
- Virtual Area Based Telephony Communications (pending), Sococo, filed 2011

Awards   Named *1999-2000 Developer of the Year* by SurfControl Software

Training
- "OpenStack Bootcamp" by Mirantis
- "Practical Python Programming" by David Beazley

Education   San Jose State University; San Jose, CA; BS in Computer Science / Math Minor

Certifications
- Unix System Administration Certificate, San Jose State University
- Cisco Certified Network Associate (CCNA), Cisco Systems Inc. (expired 1/2010)

Interests
- Active member of the Twin Cities iPhone Development (TCIDEV) and Python (pyMNtos) user groups
- First Aid & CPR Certified
- Licensed HAM Radio Operator with the call sign, KF6WOQ
- I have studied culinary arts at numerous cooking schools, including l'Ecole Ritz-Escoffier in Paris, France and the Tante Marie Cooking School in San Francisco, California
- Woodworking

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Skills

Skills	Level	Last Used	Experience
C / C++	Expert	Current	18 years
Python	Intermediate	Current	1.5 years
Java (Academic)	Beginner	10 years ago	3 years
C# / .Net	Beginner	10 years ago	1 year
TCP/IP Application Networking	Expert	Current	15 years
UDP/IP Application Networking	Expert	2 years ago	7 years
Multicast Networking	Intermediate	5 years ago	5 years
Multi-Threaded server design	Expert	Current	15 years
Windows Application Development (Win32/Win64)	Advanced	5 years ago	15 years
Linux Application Development	Advanced	Current	7 years
Cross-Platform Development	Advanced	Current	7 years
Win32 API	Advanced	5 years ago	15 years
MFC API	Expert	5 years ago	15 years
Microsoft Windows	Expert	2 years ago	15 years
Unix (Solaris/Linux)	Advanced	Current	7 years
XML	Intermediate	Current	7 years
VoIP (SIP/RTP/RTCP/RTSP)	Intermediate	2 years ago	7 years
Agile Development Process	Intermediate	Current	7 years
Test Driven Development Process	Expert	Current	7 years
SQL (MySQL)	Intermediate	7 years ago	3 years
Unified Modeling Language (UML)	Advanced	Current	7 years