KCI
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KCI Consultant Career Summary

Developed prototype compliance checking PERL scripts producing XML/XSLT files that ensured systems were operating uniformly.

Performed HPC benchmark and applications code ports to IBM, SGI, Linux Networks, Cray, and Compaq high performance computer systems. These systems were either UNIX or Linux based.

Performed evaluations on StorNext, Veritas, Sistina, PVFS, Polyserve, Panasas, LUSTRE, and IBRIX clustered filesystems.

Performed hardware capacity and assessment evaluations for a disaster recovery project that included RAID storage, Tape library systems, Tape drives, Fabric switches, edge routers, and encryption devices. A final recommendation of all device types and system layout was presented.

Developed Excel Spreadsheet Models that determined the inode/extents utilized vs. Metadata and data used. This model allowed the user to better understand the impact of different sized Disk Allocation Units vs. metadata and wasted space consumed.

Developed enterprise performance models utilizing the Hyperformix SES Workbench modeling tool initially on 2 like SGI and Compaq systems. Developed a cross-center queue model that is driven by the job accounting data. This model simulates queuing, scheduling and backfill algorithms. The end result is to study the 75th percentile expansion factors on the scheduling queues as it applies to cross-center queuing jobs from site to site. Able to justify cross-center queuing with a reduction of between 35-40% in queue wait times by modeling this environment. Residual development from this project was Time Fractioning Backfill Scheduling (TFBS), an innovative backfill algorithm proven to reduce queue wait times dramatically in large clustered systems. Made presentations to the customer describing the model execution and effects of cross-center queuing of jobs on expansion factors, scheduling/backfilling, and queue lengths. This modeling effort also included producing a design and validation document.

Developed an enterprise performance model utilizing Summit Design's Visual Elite/System Architect modeling tool to model a disaster recovery environment. This model development encompassed multiple sites transmitting terabytes of data into a disaster recovery site. The model measured loads on OC-xx pipes, server's disk cache, and STK 9940B tape storage. The end result was a clear understanding of the required hardware necessary for making the disaster recovery site production ready. I made a presentation to the customer describing the model and results. This modeling effort also included producing a design and validation document.

Developed enterprise performance model examples using Summit Designs Visual Elite/System Architect. These models consisted of high-level abstractions of computers, peripherals (disk, tapes), HBAs, switches, routers, and high-speed connections. Demonstrated these models to prospective customers.

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Developed both high and low level Virtualization SAN switches models utilizing Summit Design's Visual Elite/System Architect modeling tool. Successful in modeling the high-level abstraction concepts of the design which included scheduling, crossbar, memory, flow control/backpressurel and traffic algorithms. The low level modeling efforts encompassed multiple ASICs with a much finer granularity of abstraction utilizing egress scheduling algorithms and a cut through fabric. The modeling efforts uncovered and corrected many deficiencies in the design before it was ever implemented. Performance statistics within the model such as latency, load, utilization, and queue/FIFO depths achieved were accurately represented under many different traffic loads. Responsibilities include writing requirements and design specifications as well as actual model development and validation. Tools used: Summit Designs' Visual Elite/System Architect, UNIX, C/C++, Sun Sparc/Solaris, Windows 2000 Professional.

Manager for the Architecture Modeling and Validation Group. Group was successful in developing and validating linecard/mesh, shelf, and rack models of the Optical IP Superswitch core router. The modeling efforts encompassed multiple ASICs utilizing ingress scheduling algorithms and a store and forward fabric. The modeling efforts uncovered and corrected many deficiencies in the design before it was implemented. Performance statistics within the model such as latency, load, utilization, and queue depths were accurately represented under many different traffic loads. Responsibilities include building and coordinating the modeling and validation team, managing 7+ engineers to design, develop, implement, and validate the 'executable specification' of the Optical IP Superswitch design specification provided by Larry Roberts. Other responsibilities included scheduling projects and tasks, writing requirements and design specifications as well as actual model development and validation. Responsible for employee hiring and orientation. Tools used: Linux/Solaris, CynApps, C/C++, CVS source control, and PERL.

Responsible for the overall design verification and diagnostic software concepts for the StreamProcessor 2400 series of intelligent Gigabit Ethernet routers. Generated design specifications for the boot and system level diagnostics. Developed diagnostic software for multiple ASICs utilizing C language. Performed ASIC design verification by developing design verification tests in C language and utilizing VCS/VCPU. These tests eventually became boot and system level diagnostics. Tools/platforms used: Sun Solaris and Windows '95. Languages included PERL, C language, and CVS source control, JTAG.

QA project lead working in an enterprising client/server environment with backup and migration software. Responsibilities include: organizing the QA department, developing test plans and test matrixes for new feature releases, developing automated testing procedures, coordinating testing on the products released. Interview new hires, and orientated new employees. Tools used: Solaris, Sunos, HP, SGI, Sequent, Pyramid Unix environments, WindowsNT and MacOS, xrunner/winrunner, perl language, many type of robotic tape and optical devices.

Developed test procedures in a FAA DO-178B embedded real-time environment on an Intel 80960 platform for Honeywell Commercial Avionics Division. Tested the Global Positioning System (GPS) using structured test methodologies. Tools used: UNIX platform, C language, Pearl procedure language, SCCS version control, interleaf word processing.

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Developed test software in an ISO 9001 embedded real-time environment on a 68HC11 platform for SIMS Deltec. Modified and integrated software changes to SRS, SDD, SVT, trace matrix, and source code to adhere to SCC requests. Developed on-the-fly dependency file generation mechanism. Developed and integrated deskcheck philosophy for the Prizm 4in1 product line. Developed software to test function algorithms for the Prizm 4in1 infusion pump. Analyzed delivery accuracy data pertaining to SVT testing. Tools used: Windows 3.11, PVCS, Configuration Builder, TLIB, Borland C++, Whitesmith C, Excel, Codecheck, Pclint, and Promet.

Consultant to Cray Research, Inc. for coordination effort required to package and install system workstation software on the Gigaring platform. Produced design specifications for the packaging and installation tools. Integrated the package and install applications into a production environment. Implemented Atria Clearcase configuration management system. Tools used: UNIX platform, Scripting, C language, Framemaker.

Leader of a six person group involved with the migration of existing transport level protocols to TCP/IP and to MCI Network connection standards. Personally responsible for the technical leadership of the projects. Tools used: Windows 95, Microsoft Project, Excel, UNIX, C language.

Leader of a 12 person group directed by Seymour Cray. Personally responsible for the department's engineering software consisting of logic and IC simulation, diagnostic test, utilities, and interfaces. I was also responsible for manufacturing software and part tracking databases. Conducted reviews and salary actions.

Implemented a software test strategy for the Cray-3, Cray-3/PIM, and Cray-4 computer systems from logic simulation through production. I developed I/O device drivers, design verification test and analysis tools, assemblers, diagnostic GUI and embedded real-time diagnostic test software for prototype and production hardware. Tools used: Macintosh/ Macintosh software, Think C, UNIX based Sun workstation, C language on UNIX, mainframe/micro assemblers and CLIPS Expert system.

Developed and supported I/O device drivers for diagnostic concurrent maintenance in a COS and UNIX environment. Device drivers included CPU down, disk offloading, tape, and front-end interface support. Design, developed, integrated, and maintained Cray-1, Cray-XMP, and Cray-2 embedded real-time diagnostic software. Team member that designed, developed, and integrated prototype diagnostic test software for the Cray-XMP and Cray-2 computer systems. Tools used: Sun Workstation, UNIX, C language, VI, mainframe assemblers, FORTRAN.