

PRINCIPAL SYSTEMS ENGINEER PRINCIPAL SYSTEMS ENGINEER PRINCIPAL SYSTEMS ENGINEER - Recursion Pharmaceuticals Salt Lake City, UT Work Experience PRINCIPAL SYSTEMS ENGINEER Recursion Pharmaceuticals - Salt Lake City, UT April 2018 to Present Designed and implemented the infrastructure for AI/Machine Learning. Ran a 1PB Lustre file system and managed ~2PB of data in the cloud. Administered Kubernetes clusters and docker infrastructure. Implemented scheduling for the cluster and managed multiple POCs with different vendors. Enabled Data Scientists to process more data faster with cutting edge cluster design. SYSTEMS ANALYST CSRA/GDIT - Salt Lake City, UT January 2017 to April 2018 Administered and optimized ~2800 compute nodes over 5 clusters. Managed Lustre file systems, Infiniband interconnect, Cluster management, and Monitoring with Zabbix and Nagios. Converted entire infrastructure to xCAT & puppet with GIT. MOBILE LEAD Ubisoft Entertainment - Paris, FR August 2015 to January 2017 Built a team to create and maintain infrastructure to support our Mobile Games division. Trained and led new admins. Architect solutions in AWS and Openstack cloud with Chef and CloudFormation. Lead teams in implementing those solutions. Trained in Agile Project Management, SCRUM. SYSTEMS ENGINEER IV Cray Inc - Oakland, CA December 2012 to August 2015 Administer 2 systems ~11000 nodes at NERSC. Troubleshoot hardware and software failures. Triage and determine root cause of failures. Track and fix bugs relating to system performance and reliability. Installation of Edison, a 30 cabinet XC30. Work with Sonexion storage, lustre, Torque/MOAB, Bright Cluster Manager, Puppet, and cray specific tools to maintain the highest levels of service. Installed 4 custom clusters for other clients. SYSTEMS ENGINEER IOS Health Systems - Miami, FL March 2012 to December 2012 Stabilizing and performance tuning a virtualized web infrastructure for high throughput and highly available operation. Working with developers to make sure that their needs are fulfilled. Optimizing MySQL for low latency, fault tolerant operation. Ubuntu, Centos, Proxmox, VMWare, Compellent SAN, Cisco infrastructure SYSTEMS ENGINEER CSCS - Manno, CH September 2010 to March 2012 Managing Cray XT5 and XE6 machines. Rosa is a 20 cabinet XT5 47'872 core machine. Luster, GPFS, SLURM, PBS, MPI, CUDA and supporting researchers to use the resources that are available to them. Worked as

part of a global team on the Worldwide LHC Grid. Performed HPC optimization, debugging, and benchmarking. RHEL5/6 and SLES10/11, kickstart, CfEngine, xCat, Fibre Channel and SAN networking, FlexLM SYSTEMS ADMINISTRATOR U.S. Navy - Monterey, CA May 2007 to July 2010 Work with the Naval Meteorological Computing center to administer ~800 Red Hat Enterprise Linux v3,4,5 IBM cluster nodes. Including Tivoli backup, TotalStorage SAN. GPFS, CSM, McData switches, CfEngine, Apache, JBOSS, TOMCAT, Postgresql, PERL, ROCKS Clustering, PBS, Ganglia, IB, VMWARE, XEN, Fibre Channel, FlexLM Implemented a provisioning and configuration management system. And implemented 8 HPC linux clusters. NSA hardening of systems and compliance to DISA standards. SENIOR NETWORK ADMINISTRATOR Syptec - Salt Lake City, UT June 2002 to June 2003 Jan. 2006 - May 2007 Managed all technical operations for an ISP. Dial in, point-to-point, bandwidth allocation, firewalls, email, websites, wireless towers (802.11b) and technical support. Also built and implemented custom servers and networks for customers. Apache, PHP, Asterisk, Big Brother, FreeBSD, Red Hat Linux SYSTEMS ADMINISTRATOR Emergecore - Salt Lake City, UT June 2001 to May 2002 Maintained corporate environment. Servers, Workstations, etc. Worked with emerging technologies to test and implement in the network. Linux based mostly. Red Hat Enterprise linux, CentOS, Nagios, Keynote, Kickstart SYSTEMS ADMINISTRATOR Ipinet - Salt Lake City, UT August 2000 to March 2001 Ran the systems, web, database, radius, etc. for a start-up ISP. Designed the entire system from the ground up and took it through implementation. Apache, PHP, Rodopi, Created and trained the technical support department to support our customers. SENIOR SYSTEMS ENGINEER Inetz Media Group - Salt Lake City, UT January 1999 to October 2000 Maintained the servers and network for a web development company. Administered BSD Unix boxes and set-up customer systems for deployment (i.e. SUN stations, firewalls, permanent internet connections, database servers.) Apache, PHP, sendmail, DNS, FTP, FreeBSD, Red Hat Linux. Implemented BGP dual homed routing on the uplinks. OPERATOR University of Utah - Salt Lake City, UT February 1998 to January 1999 University of Utah, Salt Lake City, UT; Feb. 98 - Jan. 99 Part of a team to administer the Engineering Computing Lab for the University of Utah Engineering Department, maintained

approximately 200 Sun stations, 20 HP-UX workstations, 10 SGI IRIX, 20 PCs and the computational servers for the lab (LSF batching, AFS filesystems, NIS+ authentication, FlexLM).

ASSISTANT SYSTEMS ADMINISTRATOR Interact Communications - Salt Lake City, UT August 1997 to November 1997 Helped to administer three Linux systems, support employees on the network, and create custom JAVA apps for a growing internet presence provider. Red Hat Linux Education diploma University of Utah - Salt Lake City, UT August 2005 to May 2007 Skyline High School Skills Optimization, Infiniband, Linux, Perl, Python, Scripting, Chef, Clustering, Networking, Puppet, Bsd, Irix, Shell scripting, Solaris, Couchbase, Hpc, Mongodb, Iscsi, Database administration, Database, System Administrator, Vmware, DNS Links <https://www.linkedin.com/in/kristopherhoward> Additional Information SKILLS ? Experienced with LINUX, BSD, HP-UX, IRIX, SOLARIS, & Macintosh Systems administration and networking ? Experienced in PERL, Python, & Shell Scripting ? HPC Clustering and optimization ? Scheduling, Infiniband, FC, iSCSI, SAN ? Database administration in MySQL, Informix, Postgresql, MongoDB, and Couchbase ? System Automation with Ansible, Puppet, Chef, CfEngine, AWS CloudFormation

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