UNIVERSITY OF MARYLAND LIBRARIES
POSITION DESCRIPTION FORM

Check one: Faculty_____ Exempt _X_ Non-Exempt _____ Other___

FOR LIBRARY HR USE ONLY – Position Number

Date Prepared: January 8, 2018    Division: DSS
Prepared by: Uche Enwesi    Department: User and System
                    Support Team
Reports to: Uche Enwesi    Position Title: IT Senior Engineer

NATURE OF WORK:

Under the supervision of the User and System Support Director, this positions’ primary responsibility is improving the frequency of deployment for the developers. This is accomplished by deploying, automating, maintaining, troubleshooting and improving the systems that keep the backend infrastructure running smoothly. Automating the processes that will allow the creation of new servers for deployment, and measuring and monitoring the capacity of both our production and development hardware and software performance. The role will encompass the use of a broad range of technologies including VMware, AWS operating systems (Windows, Linux & Mac) and application environments (Oracle DB, SQL Server, IIS), with an emphasis on the implementation of best practice cloud security principles.

The role requires understanding efficiency is created by open collaboration, open communication and reaching across functional borders.

The position utilizes one-on-one consultancy to end-users and Library staff. The employee in this position will also assist in the maintenance and testing of network servers and associated equipment. The position’s responsibilities require independent and Team-based analyses, communication and problem-solving. Work is performed with little supervision and requires initiative and judgment.

DUTIES AND RESPONSIBILITIES (indicate % of time spent on job duties):

1. **70%** Act as a member of the User and System Support team, this position is responsible for:
   - Use of modern automation Tools for system administration such as Chef, Ansible and AWS CloudFormation to manage and deploy to a vast army of virtual machines.
   - Automate processes were possible and create new technologies when needed
• Conduct research on emerging products, services, protocols, and standards in support of systems software procurement and development efforts. Such as:
  o Agile Development and CI Experience: Foreman, Jenkins, Docker, Maven, Hudson, or Bamboo
• Define and implement strategies for configuration management and infrastructure automation tools like Chef, Puppet or Ansible
• Establishes, maintains and manages Linux and/or Windows Server farms and web stacks including Apache/IIS, DNS, NTP setup and management.
• Design, build and scale hosting solutions for a highly dynamic SaaS based web application
• Install, secure, monitor, manage, and maintain Linux and Windows servers in a global environment
• Ensure Linux standards, processes, procedures, and best practices are efficient, effective, and documented
• Work with development, testing, and documentation teams during the product development cycle to ensure quality control
• Recommend and execute modifications to web Server management and configuration experience
• Responsible for capacity, storage planning, and database performance
• Provide analysis and input with all tiers of support (1st, 2nd and developer) to ensure that assignments are completed in a timely manner.
• Scripting in various languages: Shell Script, JavaScript, Pshell, Perl, Python, Ruby
• Responsible for translating technical concepts to non-technical parties and to quickly understand an environment and pick up new skills.
• Coordinate and manage digital assets for the library.
• Responsible for patch management of all system.
• Responsible for monitoring tools (Nagios, Shinken or similar)
• Daily run and maintenance of systems including monitoring for system health, performance, and security
• Generate statistics for operational review and planning
• Participate in migrating systems to AWS and develop long-term strategic goal for aws use.
• Design, deploy and maintain virtual infrastructure solutions based on VMware across multiple operating systems.
• Administer, maintain and troubleshoot multiple Storage Area Networks (SAN), Network Attached Storage (NAS).
• Provide support in performance monitoring, back-ups, reporting, problem identification, management, and resolution.
• Develop new features for library decision support software and collaborate in the process of security/privacy auditing. Participate in best practices such as integration testing, tracking QA processes and Jira, and coordinating UA testing.
• Provide after-hours support for Infrastructure related emergencies as well occasional weekend maintenance
• Coordinate the establishment of automated processes, run manuals, standard operating procedures and documentation to ensure 24/7 system availability.
2. **20%** Work closely with the Director of **User Services and System Support**
   - Stay current on hardware and software news, and participate in strategic planning and tactical decision-making.
   - Assist with specification and acquisition of hardware and software.
   - Maintain inventory and licensing records, including documentation of hardware and software acquisitions.
   - Assist with the preparation of presentations to the faculty, administration, trustees, and others.
   - Recommends and/or performs upgrades on systems to ensure longevity.
   - Installs customer-installable computer equipment; loads and maintains software.
   - Advises, informs and trains users on a computer system operating procedures and policies. Answers questions and gives information about well-defined areas, some of which may require limited interpretation of the policy.

3. **5%** Library committee work
4. **5%** Performs other duties, as assigned.

**PHYSICAL DEMANDS:**

The employee is also occasionally required to lift and carry materials up to 50 pounds in weight. Specific vision abilities required by this job include close vision and the ability to adjust focus.

While performing the duties of this job, the employee is frequently required to sit and talk and hear. The employee is occasionally required to walk; use hands to finger, handle, or operate computers, objects, tools, or controls; and reach with hands and arms.

Must be able to maneuver a vehicle.

**SUPERVISORY RESPONSIBILITIES:**

None

**QUALIFICATIONS (Knowledge, skills, and abilities):**

1. Think critically – Use logic and analysis to identify the potential enhancements and flaws in security measures.
2. Make decisions and resolve problems – Seek out information and data to evaluate, prioritize and formulate the best solution or practice.
3. Demonstrate leadership and foster collaborative team approach – interacts well with front line and management providing consultation and expert advice on systems security-related topics.
4. Analyze, interpret and present research findings into clear, concise reports.
5. Communicate clearly and concisely, both orally and in writing.
6. Establish and maintain effective working relationships; work independently and demonstrate initiative.
7. Research, test and evaluate vendor hardware and software products

EDUCATION:

Required: Bachelor’s degree, or an equivalent combination of education and experience.

EXPERIENCE (Be specific, indicate the minimum years of experience and skills needed):

Required:
- Minimum of 7 years experience which includes: 4 years as System Engineer and 3 years experience with automation/configuration management using Puppet, Chef or an equivalent
- Demonstrate automation processes where possible and create new technologies when needed
- Demonstrated experience developing, managing, and deploying Docker or vagrant images is essential.
- Experience with Linux systems and a programming language like Python or Ruby.
- Hands-on SA experience in Linux, AWS, network security, system hardening, and system integration.
- Experience using version control systems, such as Git
- Strong service orientation
- Web Application Server configuration experience
- Ability to work independently and as a member of a team
- Excellent interpersonal skills
- Excellent troubleshooting skills.
- Excellent written and verbal communications skills
- A valid driver’s license is required to be able to drive to multiple branches on campus.

Preferred:
- Experience with Git, Ansible, and open-source CI tools is preferred
- Technical knowledge and experience with SAN/NAS infrastructure.
- Working knowledge with RHEL Linux, Windows and core products/components (patching, boot from SAN, multipathing, etc).
- Excellent troubleshooting skills.
- Working knowledge of relational database design, development, and use including Oracle, MySQL, and PostgreSQL
- Strong grasp of automation tools.
- A strong focus on business outcomes

Employee’s Signature ____________________________ Date________________
Print Employee’s Name:____________________

Supervisor’s Signature____________________ Date__________

*Note: Asterisk indicates these are essential job functions.