

## Job Description

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<b>Job Title:</b>	Systems Administrator
<b>Department:</b>	Centre for Extended Learning
<b>Reports To:</b>	Associate Director, Systems
<b>Jobs Reporting:</b>	N/A
<b>Salary Grade:</b>	USG 10
<b>Effective Date:</b>	June 2019

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### **Primary Purpose**

The Centre for Extended Learning's (CEL) systems team manages and interacts with a variety of locally hosted and cloud-based systems, which support the delivery of University eLearning and professional development courses and programs. The Systems Administrator will work alongside the systems team to ensure the ongoing security, reliability and integrity of data, systems and services of a number of complex web applications. In addition, this role requires close interaction, coordination and collaboration with the University's central Information Systems and Technology (IST) department with respect to interoperability of technology, server/database setup, access privileges, monitoring and enforcing university policies. The incumbent will be required to assess, plan and implement new systems configurations while managing changes to existing in a proactive manner to reduce reactive troubleshooting. The incumbent must also clearly communicate requirements and system behavior to both technical and non-technical parties.

*Note: This role does not include desktop or workstation administration.*

### **Key Accountabilities**

#### **Application Administration**

- Setup infrastructure for application development and production work.
- Manage failover, high availability, disaster recovery and business continuance.
- Contribute to the evaluation and selection of programming languages, tools, methodologies, etc.
- Coordinate technical components within various projects.
- Monitor technical directions and strategies of existing applications and tools.
- Conduct server hardening, penetration testing.
- Coordinate minor/major releases and version control.
- Compile technical documentation.

#### **Database Administration**

- Ensure appropriate infrastructure exists for development and production databases.
- Participate in the evaluation and selection of database systems, tools, methodologies, etc.
- Implement industry standards for naming, roles and responsibilities, administration, security and applications.
- Monitor technical directions and strategies of existing database systems and tools.
- Provide technical guidance and support for development activities.
- Execute strategic technical architecture planning for database system components.
- Conduct database system administration including installation, tuning, performance monitoring, backups and upgrading.

### **Server Administration**

- Setup, manage, support, troubleshoot local and cloud based Windows, Unix/Linux web servers requiring 99.9% uptime to serve thousands of online learners.
- Keep the network, applications, databases and user information secure.
- Maintain server functionality using knowledge of TCP/IP, DNS, LAN and WAN.
- Troubleshoot and rectify server issues using analytical and reasoning skills.
- Communicate critical issues, maintenance schedules and projected future requirements effectively with colleagues across teams and management.

### **Systems Development**

- Design, implement and manage mission critical systems serving thousands of learners and internal/external stakeholders.
- Assess new software for implementation.
- Maintain software, data and applications, including testing and quality control, update and revision management, and documentation and communication of changes.
- Support existing office technologies such as the office information system, Extended Learning website, and professional development registration systems (PDREG).

*\*All employees of the University are expected to follow University and departmental health and safety policy, procedures and work practices at all times. Employees are also responsible for the completion of all health and safety training, as assigned. Employees with staff supervision and/or management responsibilities will ensure that assigned staff abide by the above, and actively identify, assess and correct health and safety hazards, as required.*

### **Required Qualifications**

#### **Education**

- An undergraduate degree in networking, database administration, computer science, software engineering, computer engineering or related discipline.
- Industry certification(s) in server administration, database administration, security, and virtualization such as MCSE, RHCSA, MCDBA, OCP, VCP will be highly sought after.

#### **Experience**

- 5-10 years of experience with a proven track record of achievement and success managing application infrastructure, enterprise servers and large databases.
- 2-3 years of application development experience in PHP, JAVA, Python, etc.

#### **Knowledge/Skills/Abilities**

Required:

- Linux Administration - RHEL/CentOS experience preferred, basic system monitoring tools (top, ps, iostat, iotop, lsof, df, du, sar, etc.), bash scripting, LAMP stack, permissions and security concepts (file permissions, SELinux, iptables)
- Configuration Management tools (Ansible preferred)
- Intermediate experience with Git version control
- Understand virtualization concepts (VMware, containers)
- Configuration and administration - Apache, NGINX, MySQL, PHP 5.4+, PKI (SSL/TLS certificate management)

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- Web application architecture (multi-tier)
- Web application deployment and staging concepts
- Vagrant and Docker for portable dev and test environments
- Knowledge and skills in Linux/Windows Server, IIS, Apache, MySQL, MS SQL and PHP architectures for development and deployment of web-based systems
- Knowledge of SDLC, especially in context of web applications
- Understanding of industry standard authentication and security protocols (2FA, OAuth, SAML)
- Practical experience in networking and Internet technologies including web applications, database servers, caching strategies, consumption of third party API's, DNS, email and application security best practices.
- Excellent communication skills including the ability to explain technical concepts to less experienced computer users within and outside CEL.

### Preferred:

- Proven skills in payment gateway integration and ecommerce
- ADFS and SAML experience
- Strong networking fundamentals
- Jira and Confluence experience
- Wordpress, MediaWiki and other CMS experience

### Nature and Scope

- **Contacts:** CEL's systems team, Professional Development team, ITMS, and IST.
- **Level of Responsibility:** Setup infrastructure for application development and production work. Execute strategic technical architecture planning for database system components. Conduct database system administration including installation, tuning, performance monitoring, backups and upgrading. Setup, manage, support, troubleshoot local and cloud based Windows, Unix/Linux web servers requiring 99.9% uptime to serve thousands of online learners. Design, implement and manage mission critical systems serving thousands of learners and internal/external stakeholders. Maintain a high level of confidentiality and integrity when working with systems subject to privacy and security concerns. Work effectively with others in a team environment. Be agile and responsive to issues of mission critical nature.
- **Decision-Making Authority:** Evaluate, setup and implement application, database and server infrastructure, architecture and tools to support large numbers of users in mission critical systems.
- **Physical and Sensory Demands:** Must be able to focus on data and screens for extended period, while maintaining near perfect accuracy and attention to detail. Much of the time is spent sitting in a comfortable position with frequent opportunity to move about. Located in a comfortable indoor area. There is a frequent need to give close attention to various stimuli such as written material and information given verbally to co-workers.
- **Working Environment:** The work is varied. There are deadline pressures, while at the same time there is a demand for thoroughness and accuracy. As we work in a production environment that thousands of users depend on hourly, occasional "crisis" events might require being on call, working outside normal working hours and/or weekends.