



Job Description

Comp ID:	(...)
Job Title:	Linux Administrator
School/Department:	School of Computer Science and Statistics
Job Category and Level:	Professional, Administrative & Support; Administrative 1

The Purpose of the Role

Design, develop and deploy state-of-the-art Linux-based IT infrastructure systems and technologies within the School of Computer Science and Statistics (SCSS). The Linux Infrastructure Specialist will provide critical operational expertise and high-level contributions to both teaching and research groups within the School.

As a specialist in Linux systems, virtualization, containerisation, and storage solutions, the role is essential in maintaining, optimizing, and supporting the School's core infrastructure. The post-holder will focus on ensuring the reliability, performance, and scalability of systems while collaborating with researchers and technical teams to meet diverse academic and research demands. Additionally, the role will involve staying current with emerging technologies, driving innovation, and contributing to the continuous improvement of the School's IT capabilities. You will also oversee the full software development lifecycle and implement CI/CD pipelines to streamline and enhance our deployment processes.

Context

The School of Computer Science and Statistics is one of the largest in the University, with over 1,500 taught students, 400 research account holders, and more than 150 staff members.

Our diverse academic offering includes a wide range of undergraduate courses across multiple disciplines, including computer science, statistics, management science, business, European languages, computer engineering, electronic engineering, and mathematics. Notably, our five-year Master's degree in Computer Science is accredited by Engineers Ireland, reflecting our commitment to delivering education of the highest standard.

This role is based within the **Systems Support Group**, a dedicated team of nine professionals working closely with the **Technical Support Team**. Together, they provide comprehensive IT support across

research, teaching, and administrative activities, as well as specialised IT services to meet the School's unique requirements.

This role holds a pivotal position, reporting directly to the Systems Manager. As a part of this dynamic team, the role presents an exciting opportunity for the individual to actively contribute to the ongoing development of cutting-edge systems. The role encompasses system administration, infrastructure management, and operational support for teaching and research activities within the School of Computer Science and Statistics (SCSS). The Linux Infrastructure Specialist will play a vital role in maintaining and optimizing the School's technical environment, ensuring that its IT resources effectively support academic and research goals.

This position requires a unique blend of technical expertise, problem-solving skills, and collaboration with cross-functional teams. The role focuses on bridging advanced Linux and infrastructure technologies with practical implementation, enhancing both pedagogy and research outcomes.

The Linux Infrastructure Specialist will contribute to fostering innovation and ensuring that the department's infrastructure aligns with its academic vision. By ensuring reliability, scalability, and performance, the post-holder will directly support the School's commitment to excellence in teaching and cutting-edge research. This role offers the opportunity to engage with a dynamic academic environment at the forefront of computer science education and research.

Main Responsibilities

The principal duties may include (but are not limited to):

- **Linux Systems and Infrastructure Administration:** Oversee the design, implementation, and comprehensive management of Unix/Linux servers, clusters, and related systems, ensuring system reliability, uptime optimization, and alignment with the School's operational needs.
 - **Software Development:** Design, develop, and deploy high-quality software supporting business operations in the School. The ideal candidate is experienced in modern programming practices and agile methodologies, with a proven track record in using continuous integration and continuous delivery (CI/CD) pipelines to streamline development and ensure rapid, reliable deployment of code. Your ability to write clean, efficient code and your eagerness to embrace new technologies is essential.
 - **Infrastructure Support for Research:** Provide tailored support for high-performance computing (HPC) infrastructure, including GPU clusters and systems for AI, deep learning, scientific simulations, and large-scale data processing. Ensure the effective use of computing resources across disciplines like AI, NLP, big data analytics, and 3D modelling.
 - **Project Implementation and Collaboration:** Manage and deliver complex technical projects, ensuring successful outcomes by collaborating closely with researchers, administrative teams, and other technical staff to meet timelines, budgets, and technical requirements.
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- **Containerisation and Virtualisation Management:** Oversee container orchestration platforms and virtualisation solutions, optimising these systems to support academic and research needs.
 - **Stakeholder Engagement:** Engage effectively with key stakeholders within the School, including researchers, technical teams, and external vendors, to support the design and delivery of services that meet the School's teaching and research goals.
 - **Support for Emerging Technologies:** Stay updated on emerging technologies, assess their relevance, and provide recommendations to enhance the School's technological capabilities in alignment with its strategic vision.
 - **Network and Storage Optimization:** Collaborate with networking teams to design and maintain reliable network infrastructure. Manage and optimize storage solutions, particularly Dell Compellent systems, to support diverse academic workloads.
 - **Monitoring and Maintenance:** Implement monitoring solutions for performance, availability, and security of Linux systems, ensuring proactive identification and resolution of potential issues.
 - **Teaching and Research Support:** Support the setup and maintenance of development environments for students and researchers, accommodating a range of programming languages, frameworks, and academic needs.
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Person Requirements

The role-holder will require the following knowledge, skills and attributes for successful performance in the role.

Qualifications

- Bachelor's degree in Computer Science or a related technical field involving systems engineering.
- MSc degree in Computer Science or a related technical field or equivalent professional work experience

Knowledge

- **Advanced Linux Expertise:** Demonstrates expert-level knowledge of the Linux operating system, including system analysis, performance tuning, troubleshooting, and configuration management, ensuring optimal functionality across a complex and dynamic environment.
- **Infrastructure Proficiency:** Possesses a strong understanding of cloud-based Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS) offerings, leveraging these tools to support research and operational needs effectively.
- **Virtualisation Expertise:** Proficient in managing and optimizing virtualisation platforms to accommodate diverse academic and research workloads, including development, testing, and production environments.
- **Containerisation and Orchestration:** Advanced knowledge of containerisation platforms such as Docker and Kubernetes, with the ability to deploy, monitor, and manage cutting-edge platforms on Kubernetes clusters.

- **Network Administration:** Comprehensive understanding of critical network protocols, including DNS, DHCP, SSH, LDAP, SMTP, HTTP, TCP/IP, and IPv6. Able to design, configure, and troubleshoot robust and secure network architectures.
- **Storage Systems:** Expertise in distributed storage solutions, particularly Ceph, including design, implementation, and management to ensure data availability and performance.
- **Development Environment Support:** Familiar with creating and maintaining development environments tailored to support multiple programming languages such as Python, Java, C++, and tools for machine learning and data analysis. Provides guidance on integrating these environments into academic and research workflows.
- **System Integration and Automation:** Skilled in scripting and automation using tools like Bash, Python, and Ansible to streamline operations, enhance reliability, and improve system integration.
- **Monitoring and Maintenance:** Proficient in implementing and maintaining monitoring systems to ensure the stability, security, and performance of critical services and systems.
- **Collaboration and Communication:** Works effectively alongside systems architects, researchers, and other technical teams to translate complex technical requirements into reliable, scalable, and efficient solutions.

Experience

- **Extensive Linux Administration Expertise:** Offers over 5 years of hands-on experience managing complex Linux-based systems, with a proven ability to deliver reliable, high-performance IT solutions in academic and research environments.
- **Project Management and Delivery:** Demonstrates a strong track record of successfully managing and delivering diverse IT projects, ensuring alignment with organizational goals and timelines.
- **Infrastructure Optimization:** Proven experience in managing and optimizing cloud-based IaaS/PaaS deployments, virtualisation platforms, and high-performance computing (HPC) clusters to support advanced research and teaching.
- **Automation and Deployment:** Proficient in automation and configuration management tools, such as Ansible, Puppet, and Chef, as well as CI/CD pipelines, ensuring streamlined and modern deployment practices.
- **Educational Technology Support:** Extensive experience in supporting academic environments, including the integration of diverse programming languages (e.g., Python, Java, C++) and tools for teaching and research, optimizing the overall learning experience.
- **High-Availability Systems:** Skilled in maintaining high-availability IT environments, encompassing hardware, Linux operating systems, storage solutions, network configurations, and database services.
- **Site Reliability Engineering (SRE):** Demonstrates expertise in applying SRE principles to maintain highly reliable systems and services, ensuring optimal uptime and performance.

Skills

- Strong customer service focus and willing to go the extra mile to provide effective support. Exhibits an acute ability to rapidly discern stakeholder requirements and proactively manage stakeholder relationships, ensuring alignment with organizational objectives.
- Displays a keen ability and genuine interest in swiftly acquiring and mastering new technologies, methodologies, and solutions, coupled with adept problem-solving skills.
- Possesses a keen ability to document highly technical processes and provides insightful analysis of risk factors associated with complex technical projects.
- Embodies a proactive approach to solving issues and fosters a collaborative team environment, promoting effective teamwork within the School of Computer Science & Statistics and across the broader college.

Personal attributes

- Demonstrates systematic problem-solving, coupled with outstanding verbal, written, and technical communication skills, underlined by a high level of motivation and self-drive.
- Possesses exceptional interpersonal skills, interfacing effectively with a diverse range of stakeholders, with a commitment to enhancing stakeholder and customer satisfaction.
- Recognizes and upholds the importance of delivering excellent service, displaying an unwavering commitment to achieving the highest standards.
- Exhibits energy, capability, and confidence in taking ownership and responsibility for personal development and goals, while motivating, supporting, and developing colleagues to perform at their best.
- Possesses excellent planning and organizational skills, adept at structuring high volumes of work to meet target deadlines, with a positive and adaptable approach to change.
- Committed to achieving results, willing to put in additional effort as required, displaying a flexible approach to working hours to meet the dynamic demands of the position.
- Demonstrating courtesy and effectiveness in interactions with others, with the ability to influence and encourage changes in behaviour when necessary to achieve the objectives of the School.
- Exhibiting a strong commitment to achieving results, willing to put in additional effort as required to meet objectives effectively.
- Capable of building networks and partnerships across the University, fostering collaboration and synergy among diverse stakeholders.
- Recognizing the importance of quality service and proactively striving to deliver excellence in all endeavours.
- Proficient in identifying and pre-empting potential problems, offering proactive solutions to mitigate risks and challenges.
- Capable of managing multiple tasks with varying complexity levels, demonstrating effective prioritization and time management skills.

Application information

To assist the selection process, applicants should submit a Curriculum Vitae and a Cover Letter (1 x A4 page) that **specifically** addresses the following points in their application.

Applicants should clearly outline their related professional work experience to date and how they acquired this experience in the following areas.

- Cluster management, including managing high-performance computing clusters or container orchestration environments.
- Complete software development lifecycle—from planning and design through development, testing, deployment, and maintenance —and how you've applied these practices in previous roles.
- Effectively supported and collaborated with a diverse range of stakeholders, whether technical teams, researchers, or administrative staff, to meet complex project requirements.

Please Note:

- **Applicants who do not address the application requirements above in will not be considered at the short list stage.**

Further Information:

Informal enquiries about this post may be made to James Murphy, Systems manager at James.Murphy@tcd.ie

Trinity Competencies

In Trinity there are 6 Core Competencies that are applicable to all roles across a range of professional, administrative and support jobs, unlike specialist or technical skills which may be job specific. They provide a common language for describing performance and the abilities/attributes displayed by individuals. They focus on 'how' tasks are achieved, not 'what' is achieved.

Below is a summary definition of the 6 Core Competencies.

	Competency	Summary Definition
1	Agile Leader	Sees the big picture and harnesses opportunities to achieve the University's goals. Creates clear direction for the future and how to get there.
2	Unlocks Potential	Energised, capable and confident to take ownership and responsibility for their development and goals. Motivates, supports and develops people to perform to the best of their ability.
3	Service Ethos	Finds ways to increase stakeholder and customer satisfaction. Builds relationships, is proactive and delivery focused in order to anticipate, meet & exceed expectations.
4	Builds Trusted Relationships	Communicates in a clear and respectful manner building trust and commitment for mutually beneficial outcomes.
5	Decision-making	Confidently makes timely decisions based on knowledge, evidence and sound judgement.
6	Achieves Results	Delivers results by setting direction, planning, executing and evaluating impact.