

The University of Texas at San Antonio

Job Description

Job Title: CyManII Infrastructure Engineer

Code: 17540

Salary Grade: 65

FLSA Status: Exempt

Department/Division: Cyber Manufacturing Innovation Institute / VP Research

Reports To: CYMANII Director of Technology

Summary

This is a position for an agile and highly adaptable infrastructure engineer with both systems and network administration skills. The engineer will monitor, maintain, and administer the existing on-prem and cloud enterprise infrastructure. The engineer will also be required to deploy and configure new infrastructure (both physical and virtual) as required by the growing needs of the institute. The engineer should be able to independently research, or work directly with vendors to complete tasks that they are unfamiliar with.

Duties

- Install and configure Microsoft Windows Server and Canonical Ubuntu Linux operating system software from either pre-configured templates or directly from ISO images
- Rack/Stack/Deploy/Configure new physical servers, install the requested operating system to vendor's best practices, and connect it to the network
- Deploy & configure both Windows and Ubuntu virtual machines on the Microsoft Hyper-V virtualization platform (including installing and configuring Linux Guest Integration Services)
- Deploy & configure server and networking components on the Microsoft Azure public cloud platform (deploy new virtual machines, configure virtual networks, configure virtual firewalls, and establish VPN connectivity using virtual network gateways)
- Administer and configure routers, switches, firewalls, wireless devices, and other layer-2/layer-3 networking appliances or devices
- Add additional branch sites to existing enterprise infrastructure by planning, deploying, and configuring the required hardware or software

Virtualization Skillset:

- Microsoft Hyper-V
- Deploy new virtual machines as needed by research team
- Monitor host resource usage and provide growth recommendations
- Configure dynamic memory and Linux Guest Integration Services
- Work with university staff on patching, backups, and required network changes

Azure Public Cloud:

- Deploy new virtual infrastructure and make configuration changes as needed
 - Virtual Machines
 - Virtual Networks
 - Virtual Firewalls
 - Virtual Network Gateways and site-to-site IPsec VPNs
- Assign public IP addresses and configure necessary firewall rules
- Monitor and maintain existing public cloud infrastructure
- Work with research team and staff to provide recommendations for future growth
- Identify opportunities to reduce billing while not compromising service availability

Network Administration Skillset:

- In-depth knowledge of IP networking, layer-2 switching, and layer-3 static routing
- Experience with performing the initial configuration and making changes on common network hardware that utilize a managed network operating system: routers, switches, firewalls, and wireless access points
- Experience using both fiber and copper network cable technologies: copper UTP/STP, single-mode fiber, and multi-mode fiber
- Experience working with network devices that utilize QSFP/QSFP+ transceivers for both copper and fiber connectivity
- Understanding of classless inter-domain routing (CIDR) for both IP subnetting and routing
- Network planning using VLANs and other layer-2/layer-3 network segmentation methods
- The ability to implement network security using layer-2 ACLs on switches, and layer-3 policies on firewalls and other network security devices
- Ability to configure SNATs and DNATs and their related policies on firewalls
- Recommended experience with BGP routing protocol
- Understanding of TCP ports and their purposes (e.g. FTP, SSH/SFTP, HTTP, HTTPS)
- Experience configuring and troubleshooting IPsec and SSL virtual private networks

Systems Administrations Skillset:

- In-depth knowledge of common server physical hardware including: chassis, CPU, bus types, memory, direct attached storage, network & storage host bus adapters
- Understanding of common operating system components including processes, files, memory management, and I/O sub-systems
- Experience working with RAID storage on both physical servers and SANs
- Strong experience working with the virtual hardware supported by both Microsoft Hyper-V and the Azure public cloud
- Experience installing and configuring both Microsoft Windows Server and Canonical Ubuntu Linux to vendor's best practices
- Security hardening experience for both operating systems a plus
- Recommended experience with connecting servers to shared storage (SAN) using iSCSI and other storage connectivity protocols

Scripting Skillset:

- Strong experience with Windows PowerShell a plus

- Fundamental knowledge of how to interact with RESTful APIs to perform tasks and collect data for report generation

Infrastructure Management Skillset:

- Schedules and performs installation or upgrades in accordance with established Information Technology policies and procedures
- Monitors and tunes infrastructure to achieve optimum performance levels while staying within best practice guidelines
- Analyzes new software or hardware requirements and make recommendations on how to implement them in the existing infrastructure successfully
- Develops and maintains a living library of documentation for all existing and new infrastructure
- Designs and promotes security practices and hardening standards for server protection and client access
- Proactively monitor all infrastructure and troubleshoot problems as they arise independently or by working with vendor support
- Act as a subject matter expert for infrastructure related questions that may be asked by the research team or other members of the CyManII staff

Education

Required	Preferred
Bachelor’s degree from an accredited institution within the field of assigned responsibility: <ul style="list-style-type: none"> ○ Computer Sciences ○ Management Information Systems ○ Other applicable CS / IS or technology related degree 	
Existing professional certifications, technical training, or job experience may be substituted for a four-year degree at hiring manager’s discretion	

Experience

Required	Preferred
At least five years of experience in a systems or network administration related position.	

Equipment

Required	Possible

<p>Commonly used institute software & SaaS tools</p> <ul style="list-style-type: none"> • Microsoft Office 365 Suite • Microsoft Teams & Cisco WebEx collaboration tools • Cisco AnyConnect VPN client • Smartsheet Project Management • Atlassian Jira & Confluence • Overleaf Online LaTeX Editor • GitLab Server & Git Client 	
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Working Conditions

Usual	Special
<ul style="list-style-type: none"> • Standard working hours will be Monday-Friday, 8am-5pm <ul style="list-style-type: none"> ○ Subject to change based on institute requirements ○ Some weekend work may be required to complete intrusive tasks outside of staff working hours to minimize the impact of service availability 	<ul style="list-style-type: none"> • Must be physically present at the CyManII Office at the UTSA North Paseo Building as required by the hiring manager • Will be expected to make routine trips to the off-site CyManII Training Facility as needed to complete infrastructure related tasks, support the on-site staff, or aid during planned events • Remote work days and flex schedule are available at hiring manager’s discretion

Supervision

Received	Given
General direction from supervisor, assignments are made in terms of broad precedents, policies and goals.	N/A

Accuracy

Proficiency in all assigned duties.

Security Sensitive

Specific job requirements or physical location of some positions allocated to this classification may render the position security sensitive, and thereby subject to the provisions of section 51.215 Texas Education Code.

Internal Control

Within the scope of position duties, responsible for seeing that operations are effective and efficient, assets are safeguarded, reliable financial data is maintained, and applicable laws, regulations, policies, and procedures are complied with.
