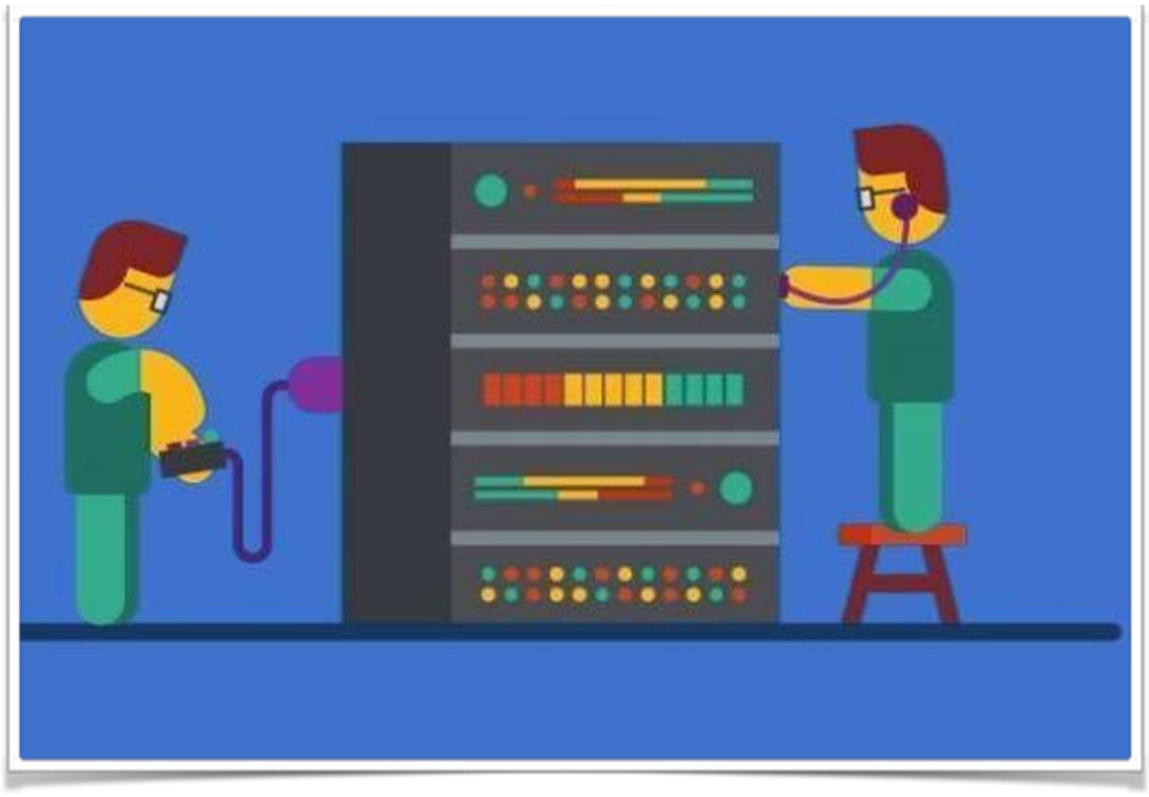
CNSM 3 group project

Theme document



Munster Sport

2025/26

CNSM 3 group project

Introduction

Your team works for an IT solutions company called ***Advanced Networks*** and have been asked by a customer called ***Munster Sport***, an on-line company selling sports equipment based in Munster, to develop their business **IT infrastructure** including design documents, costings and implementation.

Summary of key services required:

1. **Applications**
   - Website ○ https://www.munstersports.local ○ Shopping section
   - Email (internal)
2. **Server virtualisation**
   - ○ Bare metal, ESXi host, vCentre
   - ○ iLO/LOM/iDRAC ○ VM deployment
3. **Server administration**
   - Static IP addressing
   - Windows Domain with local DNS & user accounts
   - VM server configuration ○ OS install and config ○ patch/updates ○ backup with validation testing to/from network storage (NAS) via FTP, NFS or iSCSI
     - ○ VM migration
   - Wifi via Radius (For teams of five)
   - Server NIC teaming
   - Network drive (e.g. U:)
   - Website load balancing (e.g. Kemp LoadMaster)
4. **Security**
   - Optional Bastion host
   - Firewall
   - Unused services/ports closed
   - Penetration testing of individual group's IP range
   - Security policy document
5. **Datacenter design**
   - Power usage
   - UPS
   - Cooling

CNSM 3 group project

Equipment & details

You will have available a 19" rack server (12-16 GB RAM) in the Network lab server room to build your servers. You may use any OS/software compatible with the available hardware and licensing.

You may pool resources with your other 2 servers from your ***Server Administration*** and ***Server Virtualisation and Storage*** modules if you need extra compute/storage capacity. The Network lab NAS is also available for storage/backups.

Private IP addresses in the 172.x.x.x range will be made available to you for your server farm, ***do not develop your own DHCP service***.

The rack server is accessible generally throughout Moylish campus via IP address (not DNS).

(Your email services, DNS and VPN will be ***local only*** i.e. not connected to the student domain or outside world.)

CNSM 3 group project

Deliverable	%	Comment
1. High Level Design - Report	10	Summary of the 5 key areas of services to be delivered. 5 pages max.
2. Detailed Design - Network design report and presentation	20	Network topology, hardware, software, licensing, costs. IP and host/VM naming plan. Security, load balancing and backup measures, power and cooling etc. 20 pages max. All team members contribute to the network design presentation, indicating individual areas of focus. Mandatory attendance. 30 minutes per group.
3. Implementation Report	25	iLO/LOM/iDRAC setup. Proxmox, vCentre and VM deployment. VM OS configuration with server roles/services. Backup, Wifi, VPN, load balancing, UPS, security etc. 25 pages max.
4. Customer validation and Viva	35	All team members to demonstrate their contribution to the project implementation. Customer sign-off of working services. Mandatory attendance. 30 minutes per group / 1 page
5. Personal contribution	10	Qualitative evaluation of each individual team member's contribution to the overall success of the project: Positive affect 10-7 marks Neutral affect 6-4 marks Negative affect 3-0 marks
Total	**100**	

Delivery dates as per the schedule