

KWANTLEN POLYTECHNIC UNIVERSITY

INFO 2416 – Summer 2024

PROJECT HANDOUT

Term Project

Dmytro Poliak

Student Number: 100443432

Section: A11

Date: 2.07.2024

“This project, all names, characters, and incidents portrayed herein are fictitious. No identification with actual persons or fictitious characters should be inferred. No animals were harmed in the making of this project.”

OVERVIEW

This topic will involve analysis of a business case and the design of a network to support it. The precise details of the business case are below. For the project you will be required to:

- a. Create an organization chart for the business.
- b. Provide cost data for the system’s hardware, software and licenses, including references for your prices.
- c. Design and document the organizational units, security groups, and shared folder configuration that you will need.
- d. Configure Windows Server 2022 for the business, including DNS, folder/file sharing and printer sharing. e. Implement the OU and security group plan.
- f. Add a folder redirection GPO.
- g. Create an IT Department web page for the business, and deploy it using IIS server.
- h. Submit a report including screenshots verifying every aspect of the implementation. You should also describe what work would be needed from this point to actually implement your system in real life.

PART 1: ORGANIZATION CHART AND PRICE CHART

DUE: JULY 2

For Part 1 you will provide an overview of the business, define the network’s hardware components, and determine approximate costs for the information system.

- Create an organization chart for T-RICH, showing all the managers and their staff in their proper managerial relationships. The free website app.diagrams.net has very flexible tools that let you add shapes and label them simply by clicking them and typing the desired text.
- Create a price list that includes prices for all the hardware for the system, including computers, printers, network storage devices, and networking hardware such as routers and/or switches. You will not have to price out cabling, power supplies, and the like, but you should include prices for the operating system and any software and client access licenses (CALs) required to use Windows Server. Make sure you include URLs for each item's price, so the prices can be confirmed after you submit your work. The list should include each item's description, unit price, URL and total price (unit price times the number of units). You should also show the total estimated cost of the hardware.

Note: I must be able to see the entire URL of each product (<https://.....>), not just a link name or the general URL of the shop.

Overview

For Part 1, I have created an Organizational Chart and a Price Chart to establish a clear and efficient structure within our organization. The chart reflects three main departments: Support Staff, Medical Department, and IT Department, each managed independently and reporting directly to top management. This hierarchical structure is designed to promote clear lines of communication and accountability, ensuring that each department operates effectively without relying on others, which is crucial for maintaining smooth operations.

Each department has its own server and printer, allowing for a decentralized approach. This ensures that any issues in one department will not impact the others, thereby reducing downtime and enhancing overall performance. The servers provide a robust platform for managing departmental data and applications, tailored to the specific needs of each department. This separation is particularly beneficial for sensitive medical data, which requires stringent access controls and privacy measures. By allocating individual servers to each department, we also streamline data management and backup processes, enhancing data integrity and security.

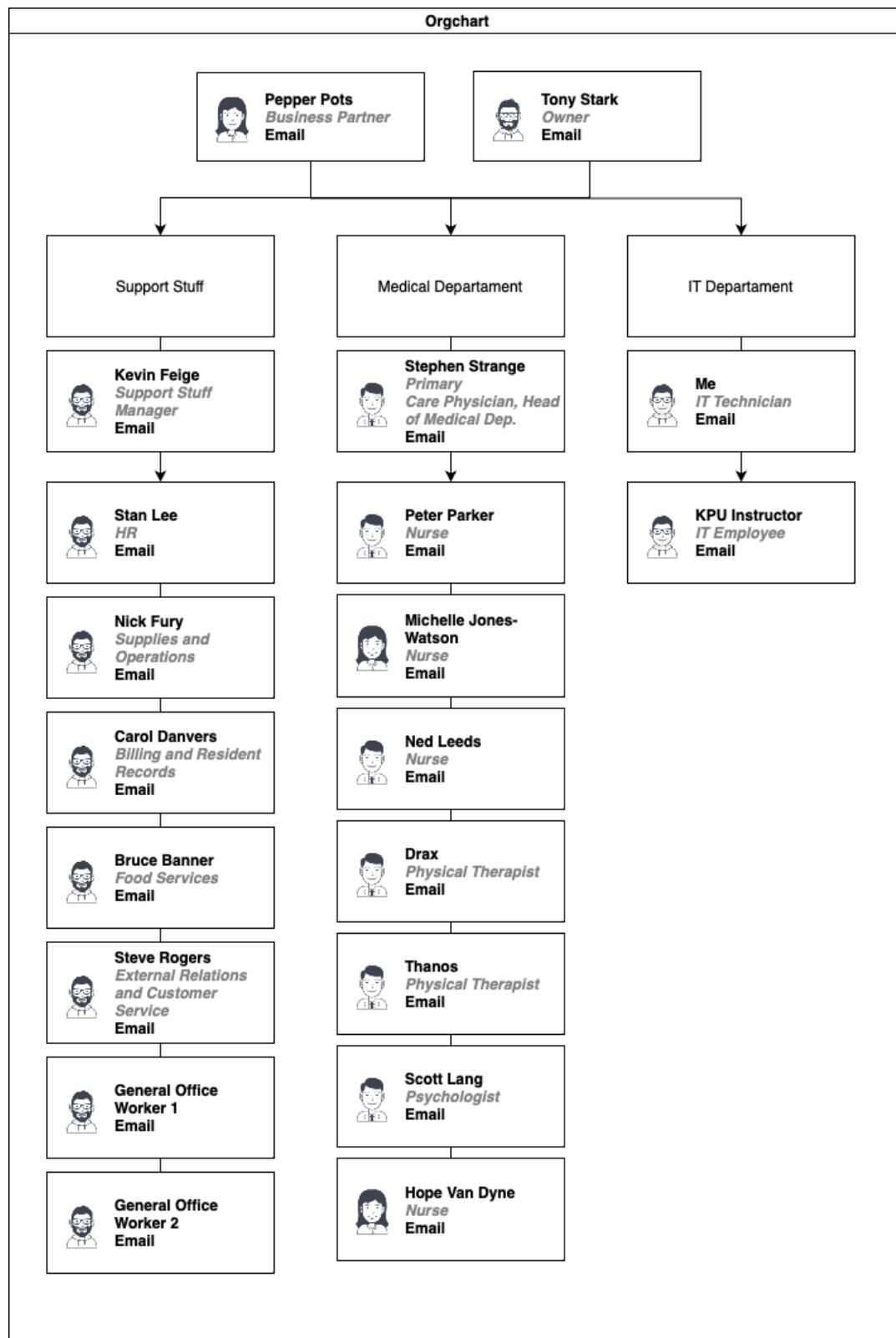
The choice of hardware and software components reflects a balance between performance, cost-effectiveness, and future scalability. The Dell PowerEdge T150 servers are reliable and powerful, providing the necessary computing power and storage capacity for departmental needs. The decision to use Windows Server 2022 Standard Edition is based on its ability to meet our current requirements without the need for more advanced features found in the Datacenter version, making it a cost-effective choice.

The use of RBAC (Role-Based Access Control) is facilitated by our organizational structure, which aligns with the hierarchical nature of RBAC systems. This structure simplifies the management of user permissions and access rights, ensuring that employees have the appropriate access levels for their roles. This approach not only enhances security but also makes it easier to scale the system as the organization grows, allowing us to add new roles and adjust permissions as needed.

The selection of Dell EcoTank ET-2800 printers is driven by their efficiency and low operating costs, making them ideal for each department's needs. These printers can handle a high volume of printing tasks with minimal maintenance, which is essential for a busy environment like ours. By investing in reliable and efficient printers for each department, we ensure that our staff can focus on their work without being hindered by equipment issues.

Overall, the chosen components and organizational structure are designed to create a flexible, scalable, and efficient system that meets the current and future needs of our organization. This approach ensures that we can manage resources effectively, maintain high levels of performance, and adapt to changing requirements as the organization grows.

Organizational Chart



The organizational chart for Tony's Retirement Institute and Care Home (T-RICH) is structured into three main departments: Support Staff, Medical Department, and IT Department. Here is a detailed description:

Top Management

- ☐ Pepper Potts: Business Partner
- ☐ Tony Stark: Owner

Both Pepper Potts and Tony Stark oversee the entire organization, with each department head reporting directly to them.

Support Staff

- ☐ Kevin Feige: Support Staff Manager
- ☐ Stan Lee: Human Resources (HR)
- ☐ Nick Fury: Supplies and Operations
- ☐ Carol Danvers: Billing and Resident Records
- ☐ Bruce Banner: Food Services
- ☐ Steve Rogers: External Relations and Customer Service
- ☐ General Office Worker 1
- ☐ General Office Worker 2

Kevin Feige manages the Support Staff team, which includes various roles necessary for the operational and administrative functions of T-RICH.

Medical Department

- ☐ Stephen Strange: Primary Care Physician, Head of Medical Department
- ☐ Peter Parker: Nurse
- ☐ Michelle Jones-Watson: Nurse
- ☐ Ned Leeds: Nurse
- ☐ Drax: Physical Therapist
- ☐ Thanos: Physical Therapist
- ☐ Scott Lang: Psychologist
- ☐ Hope Van Dyne: Nurse

Stephen Strange heads the Medical Department, overseeing a team of nurses, physical therapists, and psychologists who provide care and therapy services to residents.

IT Department

- ☐ Me: IT Technician
- ☐ KPU Instructor: IT Employee

The IT Department is managed by me and professor from KPU.

This organizational structure ensures that each department operates efficiently, with clear lines of reporting and responsibility.

Price Chart

Item Description	Unit Price	Quantity	Total Price	URL
Dell Latitude 5550 Laptop	\$1,290	15	\$19,350	https://www.dell.com/en-us/shop/dell-laptops/latitude-5550-laptop/spd/latitude-15-5550-laptop/s0034l5550usvp?ref=variantstack
Dell PowerEdge 150 Server	\$1,034	4	\$4,136	https://www.dell.com/en-ca/shop/enterprise-products/poweredge-t150-tower-server/spd/poweredge-t150/pe_t150_tm_vi_vp_sb
Epson EcoTank ET-2800 Printer	\$280	4	\$1,120	https://epson.ca/For-Work/Printers/Inkjet/EcoTank-ET-2800-Wireless-Colour-All-in-One-Cartridge-Free-Supertank-Printer-with-Scan-and-Copy/p/C11CJ66202
Dell EMC PowerVault ME4024	\$5,400	1	\$5,400	https://www.dell.com/en-us/shop/ipovw/powervault-me4-series
Dell PowerVault RD1000	\$370	1	\$370	https://www.dell.com/en-ca/shop/servers-storage-and-networking/powervault-rd1000/spd/powervault-rd1000/brctf10yca
Dell SonicWall TZ270W	\$909	1	\$909	https://www.dell.com/en-ca/shop/sonicwall-tz270w-security-appliance-gige-80211ac-wave-2-wi-fi-24-ghz-5-ghz-desktop/apd/ab433316/wifi-and-networking
Netgear GS748T Switch	\$369	1	\$369	https://www.dell.com/en-us/shop/48-port-netgear-smart-gs748t-48-port-gigabit-smart-managed-switch-switch-48-ports-smart-rack-mountable/apd/a7676378/wifi-and-networking
Netgear Insight Managed WiFi 6 AX3600	\$230	2	\$460	https://www.dell.com/en-us/shop/netgear-insight-managed-wifi-6-ax3600-wireless-access-points-wireless-access-point-wi-fi-6-24-ghz-5-ghz-wall-ceiling-mountable/apd/ac013791/wifi-and-networking
Windows Server 2022 Standard CAL 16 Core License Pack + 5 CALS	\$2,071	1	\$2,071	https://www.microsoft.com/en-ca/d/windows-server-2022-standard-cal/dg7gmgf0d6m5/0003?activetab=pivot:overviewtab
Windows 11 Pro (USB - English)	\$259	1	\$259	https://www.microsoft.com/en-ca/d/windows-11-pro/dg7gmgf0d8h4
Total Estimated Cost			\$39,722	

Summary

- ☐ Laptops: Dell Latitude 5550
- ☐ Servers: Dell PowerEdge T150
- ☐ Printers: Epson EcoTank ET-2800 Wireless Colour All-in-One

- ☐ Primary Storage: Dell EMC PowerVault ME4024
- ☐ Backup Storage: Dell PowerVault RD1000
- ☐ Router: Dell SonicWall TZ270W
- ☐ Switch: Netgear GS748T 48-Port Gigabit Smart Managed Switch
- ☐ Wi-Fi Access Points: Netgear Insight Managed WiFi 6 AX3600
- ☐ Operating System: Windows Server 2022
- ☐ Client Access Licenses: Windows Server 2022 CALs
- ☐ Client Operating System: Windows 11 Pro
- ☐ Primary Storage: The Dell EMC PowerVault ME4024 provides reliable and scalable storage
- ☐ Backup Storage: The Dell PowerVault RD1000 ensures data backup and safety, protecting against data loss
- ☐ Router: The Dell SonicWall TZ270W offers robust security and integrated Wi-Fi, making it a suitable choice for network needs
- ☐ Switch: The Netgear GS748T 48-Port Gigabit Smart Managed Switch provides ample ports for connecting all network devices and managing traffic efficiently
- ☐ Wi-Fi Access Points: The Netgear Insight Managed WiFi 6 AX3600 offers modern and reliable Wi-Fi coverage for network.

Implementation Considerations

- ☐ Network Configuration: Ensure proper configuration for seamless integration of storage devices with servers and clients.
- ☐ Backup Strategy: Implement a regular backup schedule using the Dell PowerVault RD1000.
- ☐ Management Tools: Utilize Dell's management software for centralized monitoring and maintenance.

This setup provides a balanced solution that meets my needs while being reliable and cost-effective. Additionally, the idea was to get all products from one company like Dell to ensure that everything is compatible, and we will not run in any trouble during installation. Also, it makes easier to buy everything and if something happens, we can always relay on Dell support.