

## **Members**

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## **Scenario**

Your team is tasked with updating the core IT infrastructure of a recent GlobeX acquisition. This young, innovative startup aligns well with the mission of GlobeX; unfortunately, its IT systems do not.

Your team believes that trying to integrate the acquisition's existing intranet directly into the rest of GlobeX will result in technical debt. Since the acquisition is still a small startup, your team believes it will be better to simply build out new infrastructure and organization which is in line with the rest of GlobeX's holdings.

However, you still need to convince your leadership by demonstrating that your team is up to the challenge and can perform this kind of task in a repeatable, efficient manner. The operations chosen for this demonstration are:

- Develop a repeatable means of standing up a DC to oversee the new acquisition's network. The AD will need to automatically populate users and OUs in accordance with the organizational chart.
  - Objective: as a team, develop a Powershell script to be executed on a new installation of Windows Server.
    - This should be written as a single script, though it can be organized into different files.
      - The VM will need to reboot at least once while the script is performing its tasks:
      - How will you make sure the script completes its operations? Is there a way to avoid manually restarting/continuing the script after a reboot?
      - Each individual of the team is to contribute their share of the overall script and document their individual contribution. The final script should reflect an equal effort from all team members.
      - Minimum operations this script should perform:

- Fully standup all requisite services to make the server into a DC
- Assign the Windows Server VM a static IPv4 address and a DNS
  - > Note: in class we assigned a \*reserved IP\* in pfSense, but this script is to assign the VM a \*static IP\*.
- Rename the Windows Server VM
- Installs AD-Domain-Services
- Create an AD Forest, Organizational Units (OU), and users
- Develop a secure solution for data transmission between two networks, and demonstrate successful resource access in your upcoming presentation to the executive team.
- Objective:
  - Build a site-to-site VPN tunnel
  - Alter at least one parameter compared to what was performed in class (e.g. router used, VPN protocol used, introducing a cloud component, etc.)
  - Demonstrate successful access to a file server, Active Directory, or other network resource on the other end of the tunnel
- Leadership has concerns about the local network security of the new company, if the acquisition's intranet to going to be joined to GlobeX. You will need to demonstrate implementation of some form of network access control that provides a healthy level of AAA security management.
- Objective: Deploy a RADIUS system that raises a captive portal for new network users and authenticates them using AD credentials.

## **Systems Selection**

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Review the project guidelines and scenario. Meet as a team and decide what systems, platforms, or tools you'll be using this project. Each should represent a clear, logical solution to a problem the client company is facing.

Create a high-level list of systems, platforms, or tools you're going to implement for your client. For each, explain:

- For our OS we have decided to use Windows 10 and Windows server 2016.
  - Other tools and technologies that we will use for this project VirtualBox, pfSense, Active Directory, FreeRadius and other tools.
1. How does it fit into your scenario's requirements?
    - Win10 VM
    - Win server 19

pfSense (Firewall and router)  
FreeRadius

2. What problem or pain point does it solve? In other words, what value does this add to your client?
  - Keep it high level without going into too much detail, 3-4 sentences is enough.
  - FreeRadius provides a centralized way of AAA; Authentication, Authorization, and Accounting.
  - pfSense used as a firewall/router to be able to connect or VPN into the server.
3. Minimum Viable Product (MVP) definition.
  - What is the minimum required for you to present on your demo day?
  - Having the client VM, pfSense, and server up and running

Organizational Units to be put into AD:

SunFlow is a startup that develops smart home devices that are powered by solar energy. Their products include smart thermostats, security cameras, and lighting systems that can be controlled via a mobile app, reducing energy consumption and maximizing efficiency.

#### **Org Chart:**

- CEO: Adam Johnson

Engineering Department:

- CTO: Aisha Khan

- Hardware Engineer: Javier Rodriguez

- Software Engineer: Amira Ahmed

- Mobile Developer: Adam Ali

- Electrical Engineer: Maria Garcia

- Mechanical Engineer: Ahmed Ali

- Senior Hardware Engineer: Tom Wright

- Senior Software Engineer: Fatima Hassan

#### Operations Department:

- CFO: Sarah Patel
- Director of Operations: Mustafa Khan
- Manufacturing Manager: Emma Brown
- Procurement Manager: Naveed Ahmed
- Logistics Coordinator: Abdul Rahman
- Production Coordinator: Isabel Lopez

#### Sales & Marketing Department:

- Director of Sales & Marketing: Harry Thompson
- Marketing Manager: Sofia Gomez
- Sales Manager: Mohammed Ali
- Business Development Manager: Mira Patel
- Sales Representative: Ali Khan
- Sales Representative: Carmen Rodriguez
- Account Manager: Liam Wilson

#### Customer Service Department:

- Director of Customer Service: Olivia Green
- Customer Service Manager: Rosa Hernandez
- Technical Support Manager: David Chen
- Customer Service Representative: Georgia Evans
- Customer Service Representative: Antonio Rodriguez
- Technical Support Representative: Aaliyah Ahmed
- Customer Success Manager: Tariq Khan

