

## Prepare for Projects: Systems Selection Document

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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 repeatable means of standing up a DC to oversee a new acquisition's network**
  - AD will need to auto-populate users and OUs in accordance with the org chart
  - **Objective:** develop Powershell script to be executed on a new install of Windows Server
    - Should be written as a single script, though it can be organized into different files
    - VM will need to reboot at least once while the script is performing tasks
      - How will you make sure the script completes its operations?
      - Is there a way to avoid manually restarting/continuing the script after rebooting?
    - Each individual contributes a share of the overall script and documents contribution
      - The final script should reflect an equal effort from all team members
  - **Minimum operations this script should perform:**
    - Fully stand up 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 resources on the other end of the tunnel.
- **Leadership has concerns about the local network security of the new company, if the acquisition's intranet is going to be joined by Globex.**
  - You will need to demonstrate the 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.
- **This project will require you to demonstrate skills you've learned so far in the course.**

## Deliverable

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Start a new Google Doc, and include the following components in your system selection submission.

- Name the doc "ops-201d# Team# System Selection"
  - Replace "#" with your cohort number and team number/name.
- Add team members to the "People with access" category with "Editor" privileges using their gmail address.
- Format your Google Doc to be pageless.
  - File > Page Setup > Pageless > OK
  - Click on the margin bar top/left side
  - Hover over Text Width
  - Select Full
- List all team members' full names at the top of the doc.
- Copy and paste your team's scenario into the doc with a header.

## Project Requirements

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Check out the [project guidelines](#) for requirements.

Your instructor will send you the scenario unique to your team. Some aspects of the project are left up to you to decide how to approach.

## 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 for 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:

**Remote Access** (AnyDesk, used by most scammers)

- 1. How does it fit into your scenario's requirements?**
  - Remote secure solution / Data Transmission between networks
  - Access to the file server, AD, or other network resources remotely
- 2. What problem or pain point does it solve? In other words, what value does this add to your client?**
  - Remote data transmission and file access. Enables employee productivity from outside the office. Enables network admin configuration capability.
- 3. Minimum Viable Product (MVP) definition.**
  - Remote Access capability

**VPN** (pfSense / IPsec with a different router)

- 4. How does it fit into your scenario's requirements?**
  - This fits into the scenario thru secure site-to-site transfer,
- 5. What problem or pain point does it solve? In other words, what value does this add to your client?**
  - Provides the requested site-to-site secure tunnel. Provides a secure communications mechanism for organization data.
- 6. Minimum Viable Product (MVP) definition.**
  - Functional VPN tunnel that enables secure remote access to organization network & infrastructure.

**Windows Server** (Windows Server 2019)

- 7. How does it fit into your scenario's requirements?**
  - Fulfills the need for a server OS

**8. What problem or pain point does it solve? In other words, what value does this add to your client?**

- The server will supply access to shared resources. Will enable employees to share resources whether in the office or working remotely.

**9. Minimum Viable Product (MVP) definition.**

- Operating Windows Server 2019 OS that is locally and remotely accessible

**Scenario Org Chart / Network Topology (PowerPoint)**

**10. How does it fit into your scenario's requirements?**

- Will be used for network topologies and any other visual representations required

**11. What problem or pain point does it solve? In other words, what value does this add to your client?**

- Provides a clear picture of the organization and network infrastructure.
- Provides before & after snapshots of network infrastructure.

**12. Minimum Viable Product (MVP) definition.**

- Organization chart detailing positions and hierarchy
- Network topology diagram of the client's systems architecture design
- All components must be labeled, and the network diagram must be presentable (straight lines) and free of defects/typographical issues

**Network Monitoring (WireShark)**

**13. How does it fit into your scenario's requirements?**

- Fulfills network monitoring requirement

**14. What problem or pain point does it solve? In other words, what value does this add to your client?**

- Provide network monitoring to identify nefarious activity
- Enables packet analysis after potential exploitation by a nefarious actor

**15. Minimum Viable Product (MVP) definition.**

- Provide wireshark network monitoring snapshot.

**Network Access Control (RADIUS Server and Captive Portal)**

**16. How does it fit into your scenario's requirements?**

- Required to implement a captive portal for new network users and authenticate them using AD credentials

**17. What problem or pain point does it solve? In other words, what value does this add to your client?**

- Active Directory provides a centralized location for managing user accounts, computers, and other resources, which makes it easier to manage and maintain large networks.

**18. Minimum Viable Product (MVP) definition.**

- Active Directory implementation in place that controls access and permission for users (in pfSense).

- Powershell script that supports active directory automation.

### **Permissions & Policy (Active Directory Administration Center)**

**19. How does it fit into your scenario's requirements?**

- Required to implement access and permissions

**20. What problem or pain point does it solve? In other words, what value does this add to your client?**

- Active Directory provides a centralized location for managing user accounts, computers, and other resources, which makes it easier to manage and maintain large networks.

**21. Minimum Viable Product (MVP) definition.**

- Active Directory implementation in place that controls access and permission for users. Powershell script that supports active directory automation.

### **Network Configuration Changes (PfSense)**

**22. How does it fit into your scenario's requirements?**

- Manages and maintains network security.

**23. What problem or pain point does it solve? In other words, what value does this add to your client?**

- Provides a centralized location to make any major or minor network modifications, additions, or subtractions

**24. Minimum Viable Product (MVP) definition.**

- A connected network using pfSense

### **Back-up Server (Veeam Back-up & Replication)**

**25. How does it fit into your scenario's requirements?**

- Will be used by the client to support virtual, physical, and cloud-based workloads

**26. What problem or pain point does it solve? In other words, what value does this add to your client?**

- Veeam will provide the client with features such as instant VM recovery, backup copy jobs, and automated testing of backup reliability.

**27. Minimum Viable Product (MVP) definition.**

- A backup system that allows the client to rely upon it for restoration services.

During your pitch, your instructor will help you scope your project. Some features may become MVP, and some may become stretch goals.

Once you are ready, find your instructor and pitch your solution ideas.

### **Submitting your work**

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This is a group submission. Only one person must submit for group credit.

Please have everyone's name at the top of the Google Doc.

Share your Google Doc so "Anyone with the link can comment" in the submission field below.

This step must be completed and approved before proceeding with any project work. Notify your instructor when this is ready for review.