**Case study 1 - "**Make IT Work4U"

Version 2.2

Date: September 2021

The company ‘Make IT Work4U’ is realizing improved infrastructure for its business clients. Current clients are small to medium businesses who need help adapting their infrastructure to satisfy the ever-rising needs of the end customer. The company provides a one-stop-solution that includes acquiring and installing hardware.

To be able to do this, the company needs a way to mimic the current infrastructure of a customer. The company then uses this development environment in-house to test different improvements on. The improvements will later be applied in the actual infrastructure of the client. There are many infrastructure scenarios tested and all are kept for later reference. The company keeps the changes to the infrastructure documented and allows a team to work on the designs in collaboration.

The first customer to mimic the infrastructure of, is a small office of a part-time working professionals. They use Thin clients to connect to windows VMs connected to AD. There is also a Windows server with two VMs. One of them is AD, DHCP and database server, the other is Windows client. There can be more Windows clients connected to AD. Each user has their own home folder on the server, which is connected to the desktop after login. All information on the server is backed up.

Management uses laptops connected to AD, which they consider to be personal. All data is backed up to an external server.

Some employees travel abroad. They need to access files in the company network and use AD services (for example: Desktop files can be synchronized with remote server).

Furthermore, With the rising number of clients, the company ‘Make IT Work4U’ is having hard time to monitor the distribution of their resources and they lack a real time dashboard with server and client’s statistics.

The company has an urgent request to create an application for them to manage their infrastructure and clients.

Your task is to create:

|  |  |  |  |
| --- | --- | --- | --- |
| Requirements | Proficient | Advanced | |
| Must | Should | Could |
| Infrastructure/Architecture diagram, define its communication. | x |  |  |
| Install Windows server with Hyper-V.   * + - Add AD and DHCP to the host.     - Configure AD Group Policies:       * Enable Folder Redirection for user’s “Desktop”       * Prevent changes to proxy settings on Internet Explorer on every user’s machine.     - Create multiple new users to test the system.     - Create one custom Group (for sales users) and add few employees to it. | x |  |  |
| Install one Windows desktop machine and connect it to AD. | x |  |  |
| Create backup policy to backup all servers and their data, using host and agent-based backup strategies. | x |  |  |
| Connect internal hosts to internet:   * Configure Firewall (gateway) to connect local private network to the Internet. | x |  |  |
| Set up VPN connection for remote employee   * Enable VPN connection to the company’s network. Test it with Windows machine outside of the Company’s network. Check if user’s Desktop files are synchronised with remote server. | x |  |  |
| A management dashboard for all real-time statistics of server and system’s KPI (key-performance-indicators) (Programming course) | x |  |  |
| A management dashboard for virtual clients (Programming course) |  | x |  |
| A management dashboard to check all logs of system’s state (Programming course) | x |  |  |
| A database management CRUD application (Programming course) |  | x |  |
| An event and incident management system to alert in case of infrastructure component failure (Managing & Securing course) |  | x |  |
| In every client host use SCP to send monitoring activity log files (SQLite DBs) to the server. The files must schedule to be sent every night using Windows Task Scheduler service. (Programming course) |  |  | x |
| Self-signed certificates for web servers (Managing & Securing course) |  | x |  |
| Security management analysis (Managing & Securing course) | x |  |  |

**Final deliverables for week 10:**

* Project Plan (Document that contains your introduction, approach, planning, communication, scope, work dividing etcetera) -> Planning the project
* Complete Design document (must include Moscow) (Document that contains a network diagram / GPO’s, MOSCOW, CRUD specs, backup policy, diagrams, flowcharts etcetera) -> Technical document
* Research (process) report (must include Work division and all the evidence from week 1 to 10 for example meeting’s minutes, agreements) (Document that contains Work activities, action plan, meeting notes, action points etcetera) 🡪 Process report
* Presentation for week 10 demo
* Updated PDP (case study activities by week / process / learnings from all 3 courses etcetera) 🡪 Personal development document.

**Basic format of every document:**

Must include at least:

Content:

- Title page

- Revision table

- Table of contents

- Introduction

- Actual content

- Conclusion?

Layout:

- Page numbers

- Headings

- Chapter numbers

- Professional structure and look