INFO813 Practical project documentation template (Engineering journal)

Stage Number 3

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When doing practical work it is common practice and extremely useful to document the steps you took. This assists you make your learning more tangible and organize it. The more detail you can provide the better it is so that if ever you want to configure it in the future you have a personal record documented.

The project book gives the main implementation steps. However this documentation report requires you document what you did at each implementation step as you are doing the practical project. It is not advised to do this at the end otherwise you are likely to forget what you did. You can alter the format of this template as long it includes all the relevant information

Please write this in your own words as it is a record of your work. Copied material is not accepted.

Describe the Design of your project and justify your design. (100 words)

My project includes a Windows 10 22H2 Pro client, a Windows Server 2022 configured as an IIS web server and DHCP server, and a FortiGate firewall for routing and security. The design ensures that the Windows 10 client receives automated IP configuration via DHCP and can access the organization's webpage hosted on the IIS server. Group policies were implemented to assign role-specific desktop wallpapers, disable control and command prompt for certain users, and enforce maximum password length for all users. Restricting control and command prompt access for non-administrative users enhances security by preventing unauthorized system modifications. Using Hyper-V Manager and my home lab instead of VMware Workstation provided flexibility and hands-on experience, meeting both practical and assignment requirements.

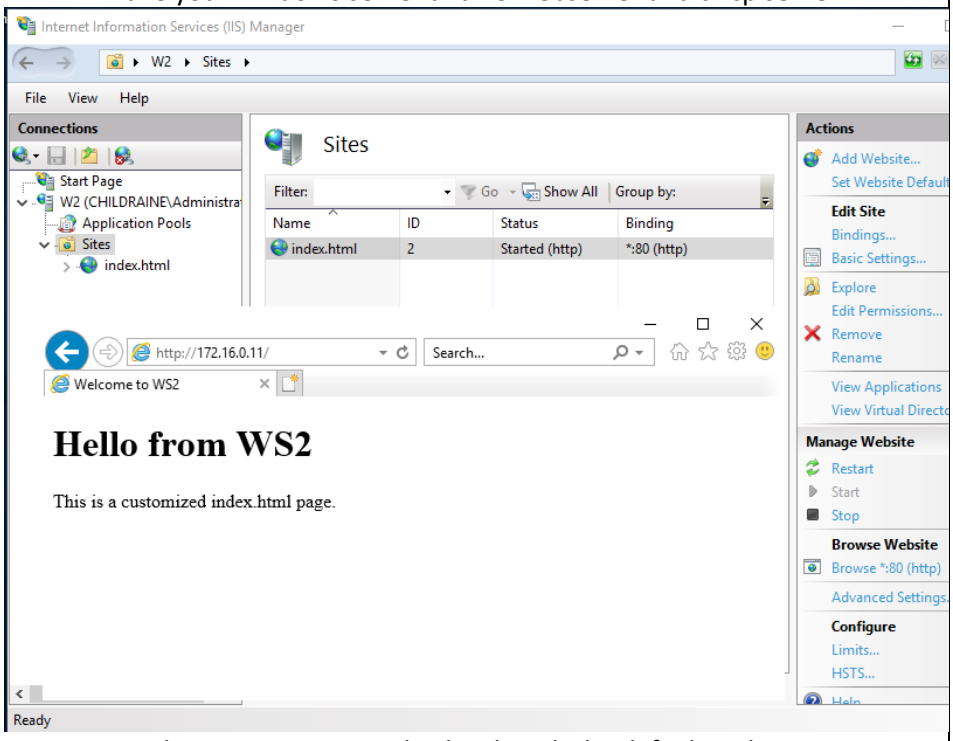
Describe the key features of one competing/alternative technology and compare it to the one implemented in the project (Pros and Cons). (200 words)

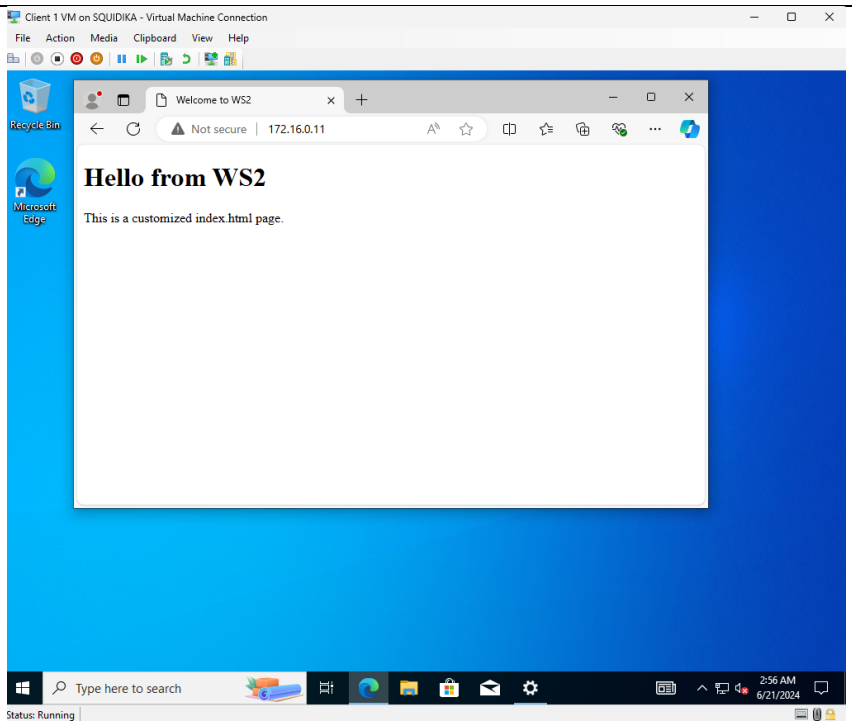
Key Features of OpenLDAP:
OpenLDAP is an open-source directory service widely used for centralized authentication and directory management. It supports Lightweight Directory Access Protocol (LDAP) to store and retrieve directory information. OpenLDAP is highly customizable, supports cross-platform environments, and integrates with many non-Windows systems. It is lightweight, flexible, and ideal for organizations requiring an open-source solution.
Comparison with AD DS:

- **Platform Support:** AD DS is optimized for Windows environments and tightly integrates with Microsoft services like Group Policy and DNS. OpenLDAP is platform-agnostic, working well in mixed environments or non-Windows infrastructures.
- **Ease of Use:** AD DS offers a user-friendly interface with integrated tools like PowerShell and Active Directory Users and Computers. OpenLDAP requires expertise in LDAP schemas and configurations, which can be challenging for beginners.

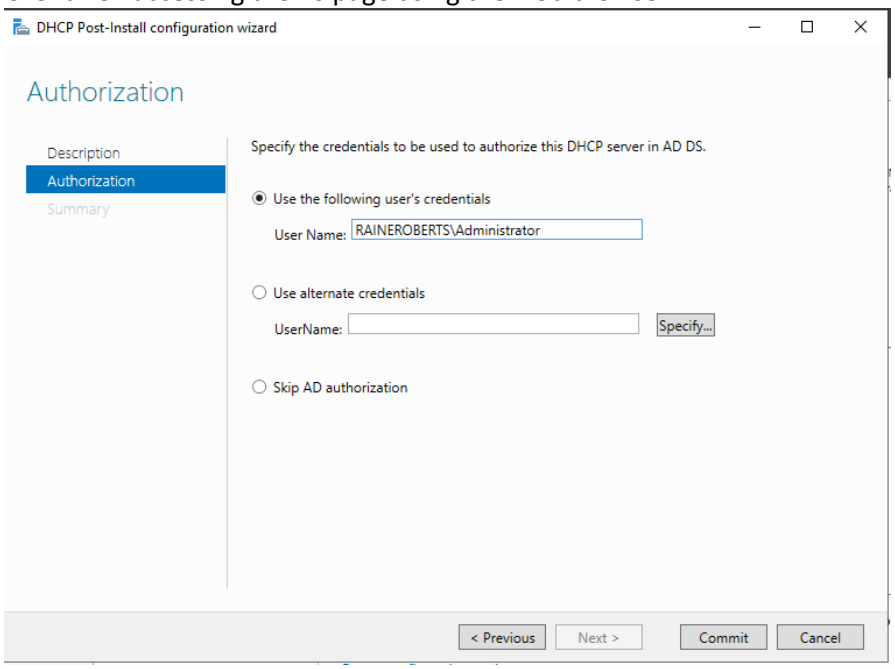
- **Security Features:** AD DS includes advanced security features like Kerberos authentication, group policies, and integrated password policies. OpenLDAP supports these features but may require additional configuration or tools.
- **Cost:** AD DS requires licensing costs, whereas OpenLDAP is free, making it a cost-effective option for budget-conscious organizations.
- **Scalability:** AD DS provides seamless integration with hybrid or cloud-based services like Azure AD, while OpenLDAP excels in smaller, highly customized deployments.

Conclusion:
AD DS is ideal for Windows-centric, enterprise-scale environments, providing extensive tools and integration. OpenLDAP is better suited for mixed-platform systems needing flexibility and cost efficiency.

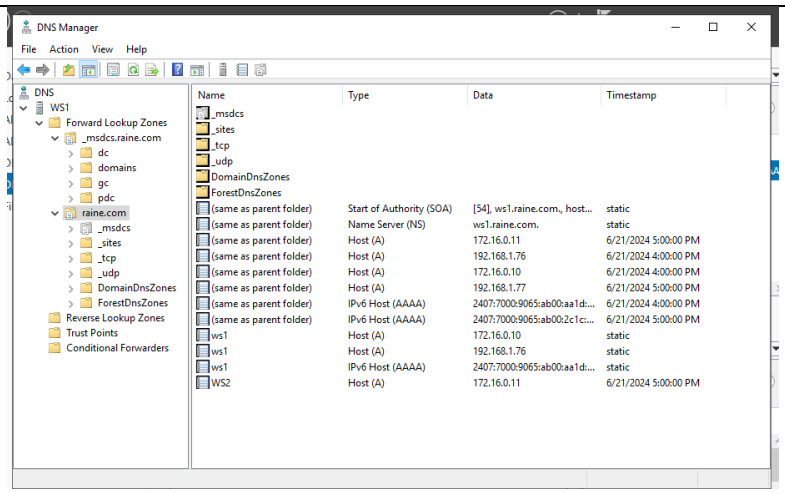
Section summary	**Implementation details at each step** e.g. screenshots, written steps, value of settings, commands used, results, answers to questions etc where applicable.	**Justification if needed**
TASK 1	• Make your windows server and IIS webserver and dhcp server  IIS manager showing a custom index.html, with the default website iistart.html removed and the webpage accessed by searching for the domain address 192.168.10.1, the domain address for Windows Server	



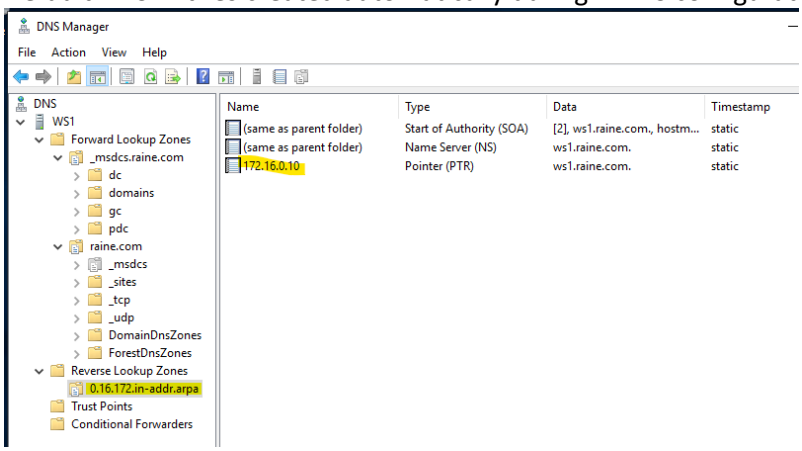
Client PC1 accessing the IIS page using the web browser.



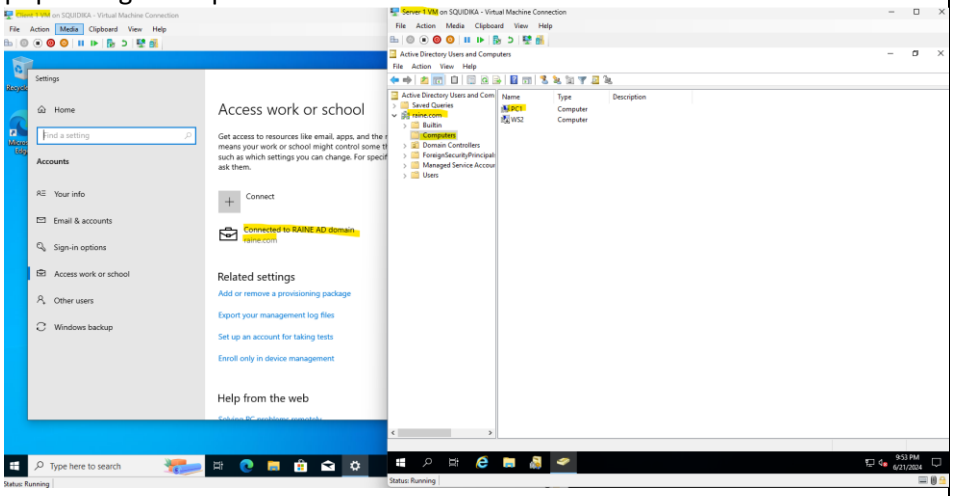
DHCP authorization.



Default DNS Entries created automatically during AD DS configuration.

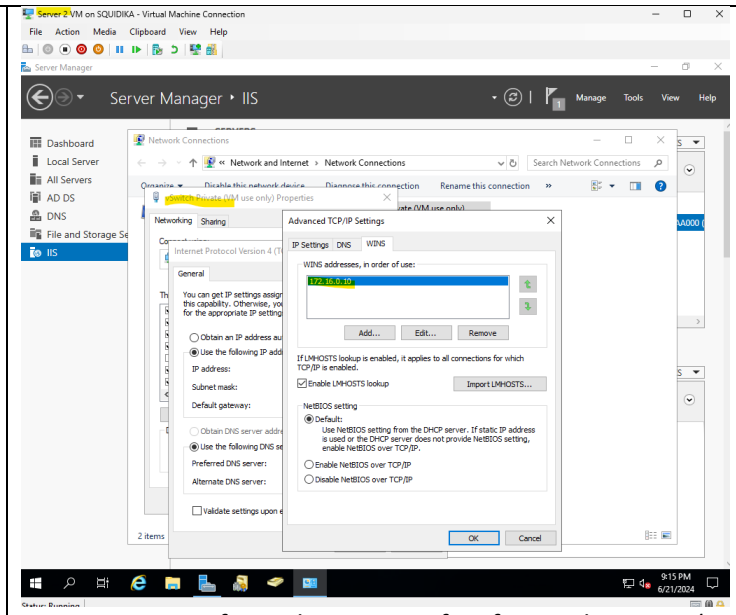


Followed DNS to create new IPv4 Reverse Lookup Zone, new pointer is populating Lookup Zone

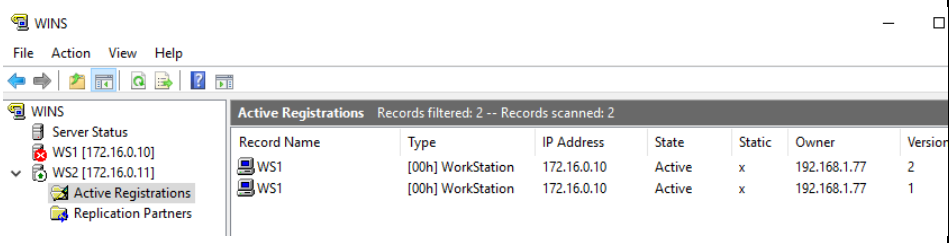


Client device added to the domain raine.com on WS1. WS1 showing PC1 is now populating inside raine.com>computers in AD DS

TASK 2	• Ensure Windows 10 client gets automated ip configuration and can access the organisations webpage	



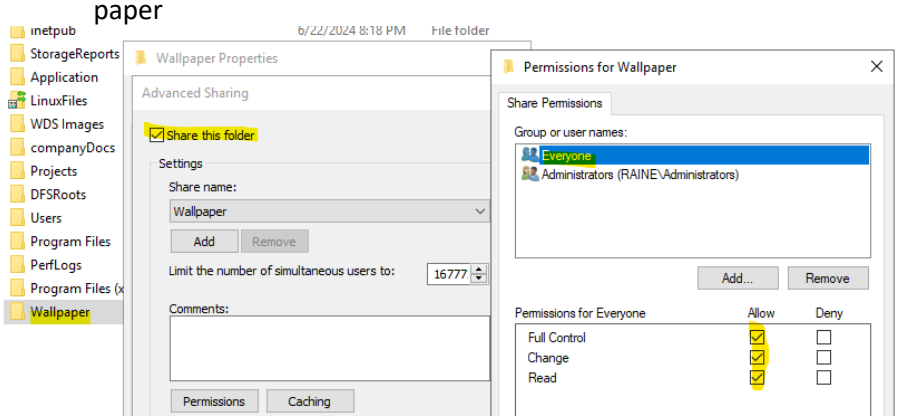
WINS server configured in IPv4 config of vSwitch Private (VMs only)



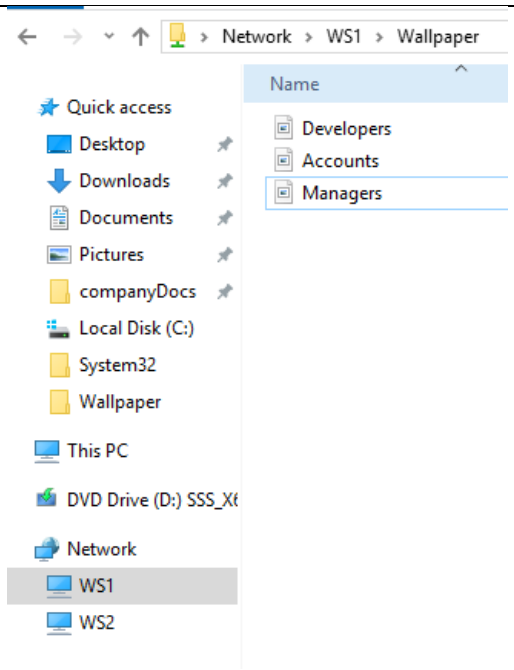
WINS server detecting the records scanned for current active registrations of WS1

TASK 3

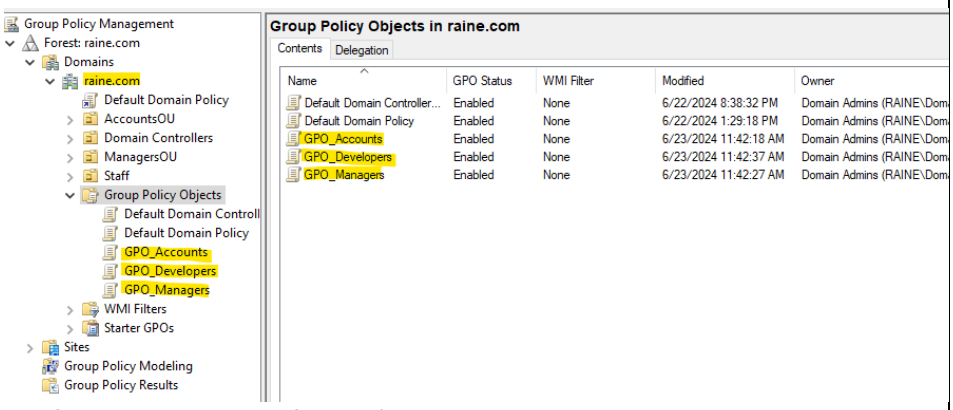
- Create group policies to give each staff a role a different desktop wall paper



Create shared folder called wallpaper, three jpgs saved to folder.

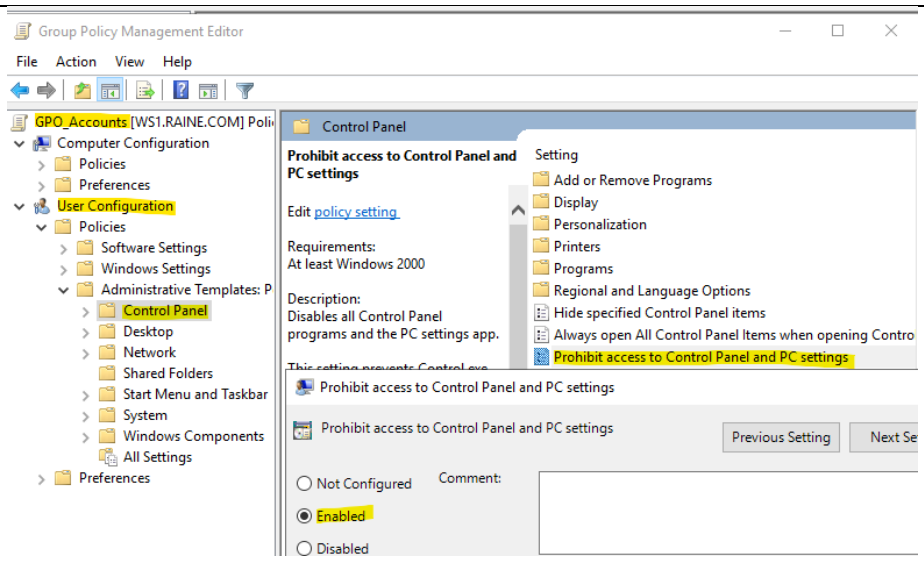


Three wallpapers saved to the shared folder labeled for each group to be assigned in GPO

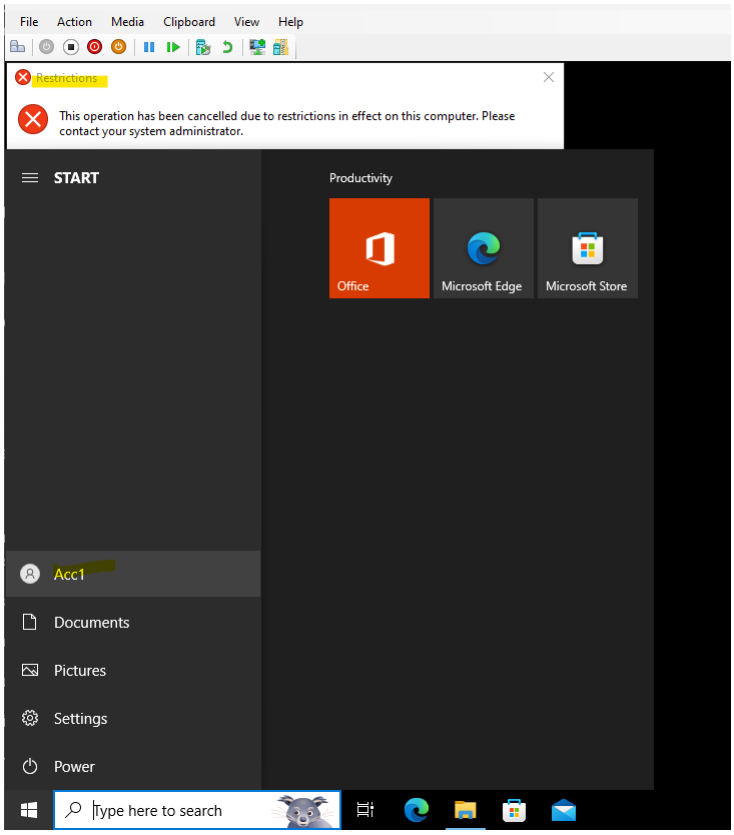


Configure account specific GPO's with each GPO assigned a separate wallpaper from the Wallpapers shared folder.

TASK 4	• Create group policies to Disable the control and command prompt for some users. Justify which users have these restrictions	

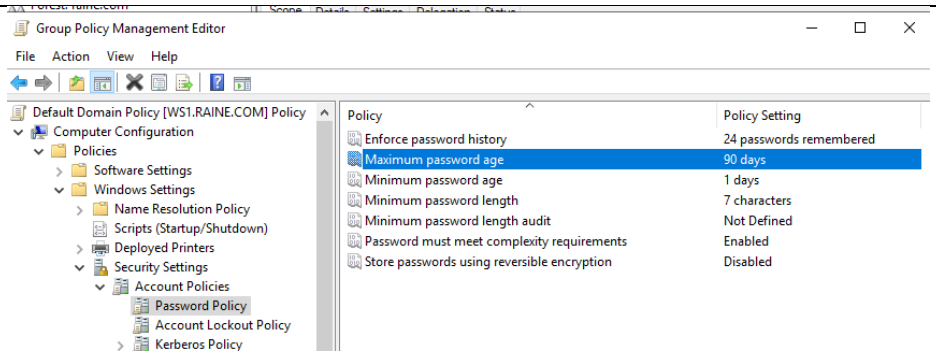


Configure the GPO_Accounts policy to prohibit access to Control Panel

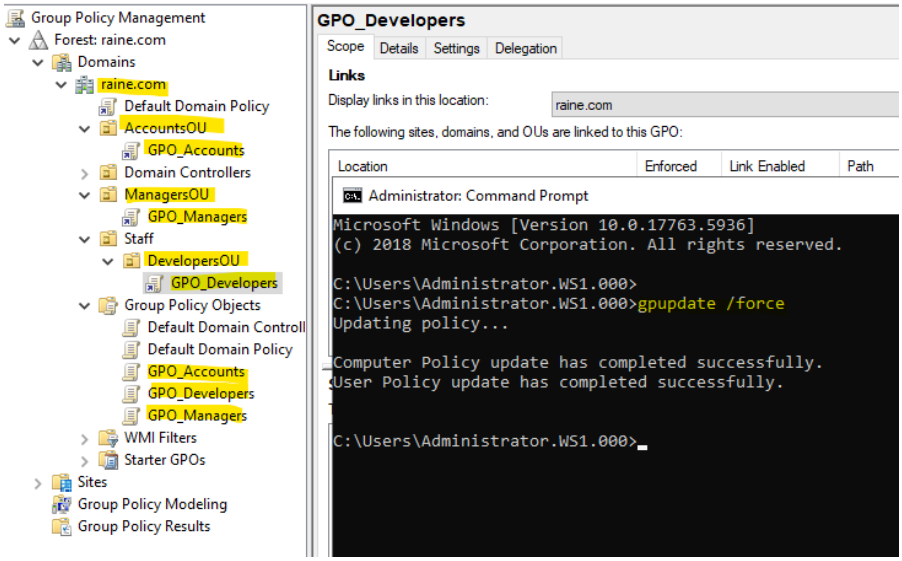


Acc1 being denied access to the Control Panel and Computer settings, you can see the background is not configured because the Client VM is unlicensed.

TSK 5	• Create group policies to set the maximum password length for all users	



Configure the maximum password age, length and account lockout threshold and reset lock counter values for all users using default domain policy.



Apply GPO's to the OU and apply them with a cmd using gpupdate /force
/force updates both user policy and computer policy

List the three most useful Internet resources that you used (provided by the tutor)

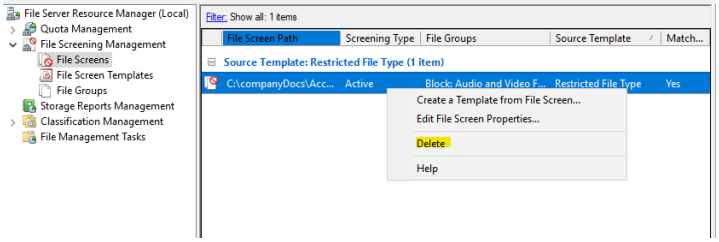
DHCP configuration https://www.youtube.com/watch?v=fUK6d3s1Im4
IIS webserver configuration • https://www.youtube.com/watch?v=gEn8j9vkaMU
• GPO Desktop wallpaper • Deploy Desktop Background Wallpaper using Group Policy

List all (at least three) Internet resources that you found and used that were not provided by the tutor)

https://www.youtube.com/watch?v=gEn8j9vkaMU
Install and Configure the Active Directory Domain Servers (ADDS) role on Server 2016 Virtual Machine (youtube.com)

[Installing Windows 10 into a Hyper-V Virtual Machine and Joining an Active Directory Domain (youtube.com)](#)

Reflect on at least two significant problems you came across during the implementation of this section and the solution you found. Use at least five sentence to describe each problem and five sentences to describe each solution. Demonstrate your critical thinking and problem-solving abilities.

Problem	Solution
Pictures not accessible by the accounts group	 The file screen must be deleted that was set up in LAB4
No backgrounds set due to unlicensed Client VM	The GPO to configure backgrounds could not assign backgrounds via the shared wallpaper folder as the client VM did not have a valid copy of windows installed.