Identity and Access Management (IAM) Project

Active Directory (On Premises) Development for BTECH

Implementation of On-Premises Active Directory for Centralized Identity and Access Management Organisation: BTECH Date: 25 September 2025 Prepared By: Nwanne Bright .C.

(Cybersecurity Analyst)

Project Overview

This project was based on setting up an on-premises Active Directory Domain Controller to achieve centralized Identity and Access Management (IAM) for Btech.local There were several components involved in the implementation process: establishing corporate domain, integrating client systems, setting up OU (Organization Unit) for regional offices; design new security GPOs, U/P provisioning and the enforcement of access control policies using Group Policy Objects (GPO).

Company IT Structure

The simulated environment reflected a small IT services firm with distributed offices:

• 1 x Windows Server – Domain Controller (AD DS + DNS)

• 2 x Client PCs – Windows 8 • Three regional OUs – Lagos, UK, US

• Departmental Groups – Created within each OU to represent business functions

Project Objectives

• Deploy Active Directory Domain Services (AD DS) for centralized IAM.

• Configure regional Organizational Units (OUs) to mirror company structure.

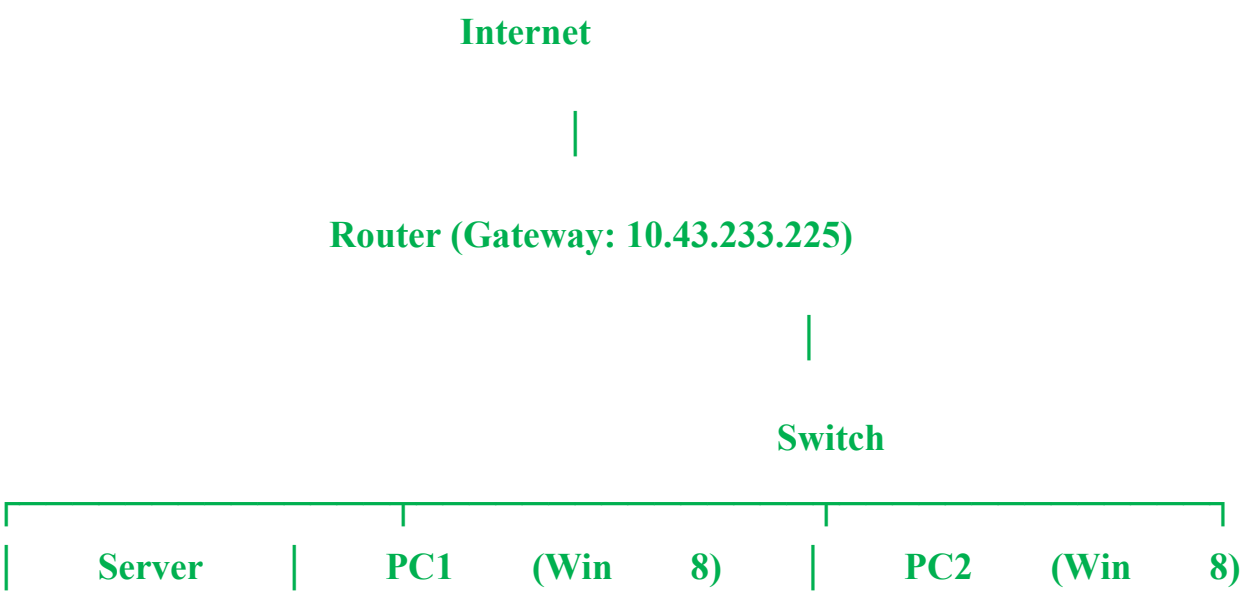
• Provision security groups to manage access by department.

• Create user accounts and assign them to relevant groups.

• Apply Group Policies to enforce access restrictions.

• Demonstrate IAM governance in an on-premises enterprise setup.

Network Design



Device

- Windows Server
- Windows 8 PC 1
- Windows 8 PC 2

IP Address

- **10.43.233.225**
- **DHCP**
- **DHCP**

ROLES

- AD Domain Controller (DC)
- Client (UK OU – IT)

- Client (Lagos OU – Finance)

DOMAIN CONFIGURATION

• Domain Name: **Btech.local**

• Server Name: **BTECH**

- Static IP: 10.43.233.81

Roles Installed:

• Active Directory Domain Services (AD DS)

• DNS Server

Organizational Units (OUs) and Groups

The directory structure was created as follows:

Btech.local

OU: Lagos

Group: Finance Group: Consultancy

UK

Group: Sales Group: Customer Service

US

Group: HR Group: IT

USERS AND GROUPS MEMBERS

username	OU	Group MB	Assigned Policy
Rose.Finance	Lagos OU	Finance	Disable Shutdown
Emma.Customer service	UK OU	Sales	Disable Shutdown

Group Policy (GPO) Implementation

GPOs were created and linked to specific users through security filtering:

• GPO Name: Disable Shutdown

• Linked To: Lagos OU (Finance User – Rose)

• Policy: User Configuration → Administrative Templates → Start Menu and Taskbar → Remove and prevent access to the Shut Down, Restart, Sleep, and Hibernate commands

• Result: Rose cannot shut down the assigned PC.

GPOs were created and linked to specific users through security filtering:

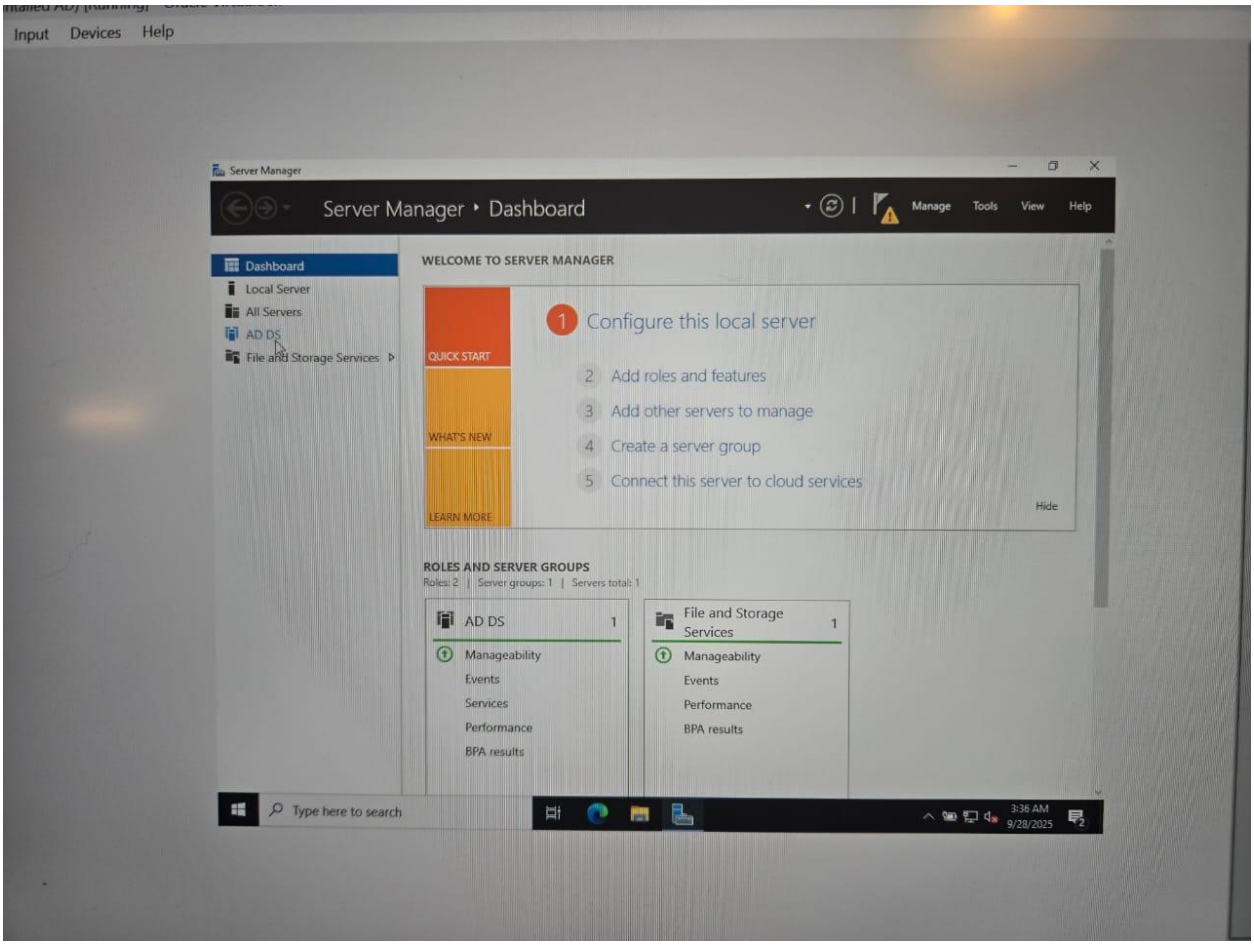
• GPO Name: Disable Shutdown

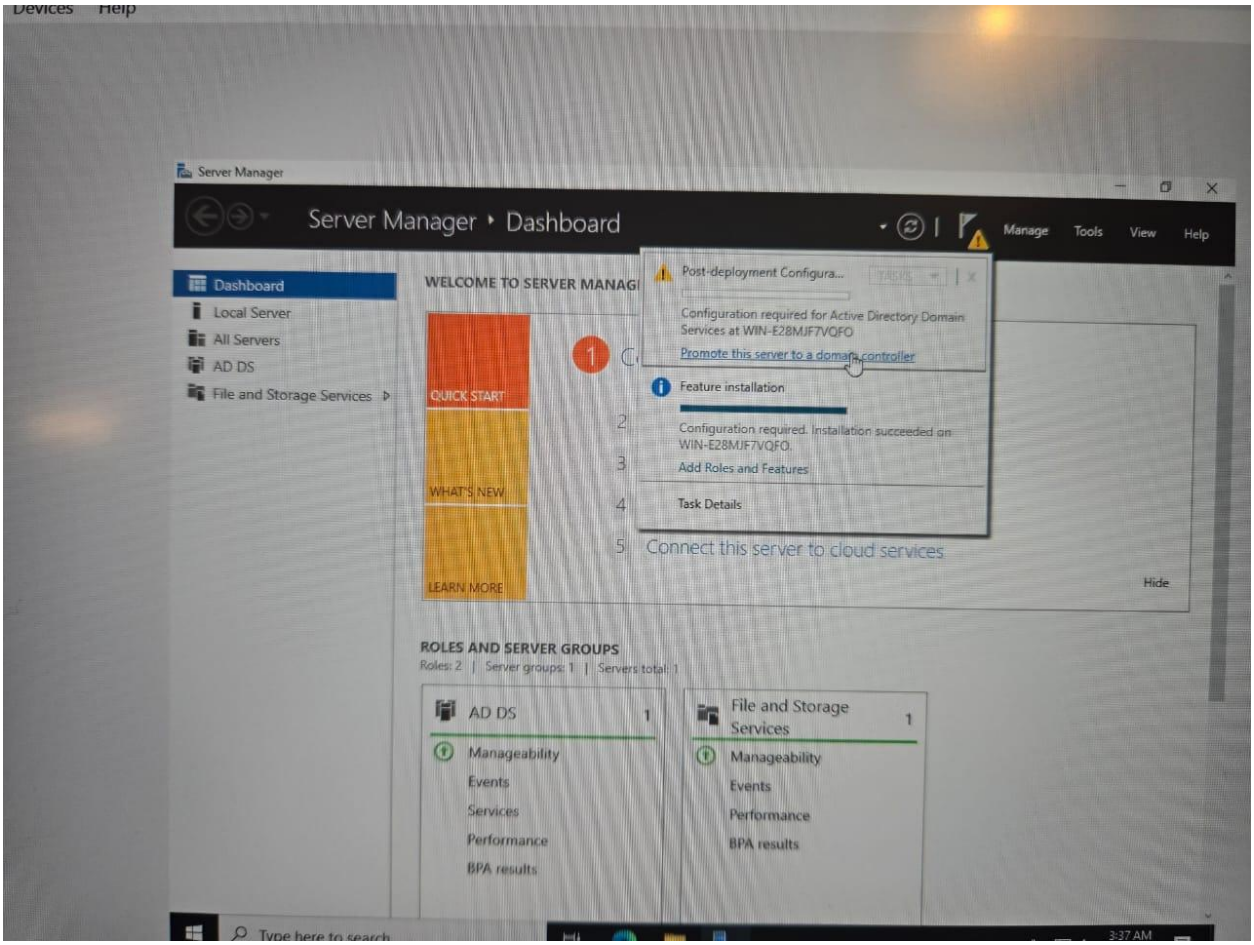
• Linked To: UK OU (Customer service User – Emma)

• Policy: User Configuration → Administrative Templates → Start Menu and Taskbar → Remove and prevent access to the Shut Down, Restart, Sleep, and Hibernate commands

• Result: Emma cannot shut down the assigned PC.

SCREENSHOOT OF EVIDENCE IS SHOWN BELOW


Input
Devices
Help
Server Manager
Server Manager • Dashboard
Manage
Tools
View
Help
Dashboard
Local Server
All Servers
AD DS
File and Storage Services
WELCOME TO SERVER MANAGER
QUICK START
WHAT'S NEW
LEARN MORE
1 Configure this local server
2 Add roles and features
3 Add other servers to manage
4 Create a server group
5 Connect this server to cloud services
Hide
ROLES AND SERVER GROUPS
Roles: 2 | Server groups: 1 | Servers total: 1
AD DS
1
Manageability
Events
Services
Performance
BPA results
File and Storage Services
1
Manageability
Events
Performance
BPA results
Type here to search
3:36 AM
9/28/2025


Devices Help
Server Manager
Server Manager • Dashboard
Manage Tools View Help
Dashboard
Local Server
All Servers
AD DS
File and Storage Services
WELCOME TO SERVER MANAG
QUICK START
WHAT'S NEW
LEARN MORE
Post-deployment Configura...
Configuration required for Active Directory Domain Services at WIN-E28MJF7VQFO
Promote this server to a domain controller
Feature installation
Configuration required. Installation succeeded on WIN-E28MJF7VQFO.
Add Roles and Features
Task Details
Connect this server to cloud services
Hide
ROLES AND SERVER GROUPS
Roles: 2 | Server groups: 1 | Servers total: 1
AD DS 1
Manageability
Events
Services
Performance
BPA results
File and Storage Services 1
Manageability
Events
Performance
BPA results
Type here to search
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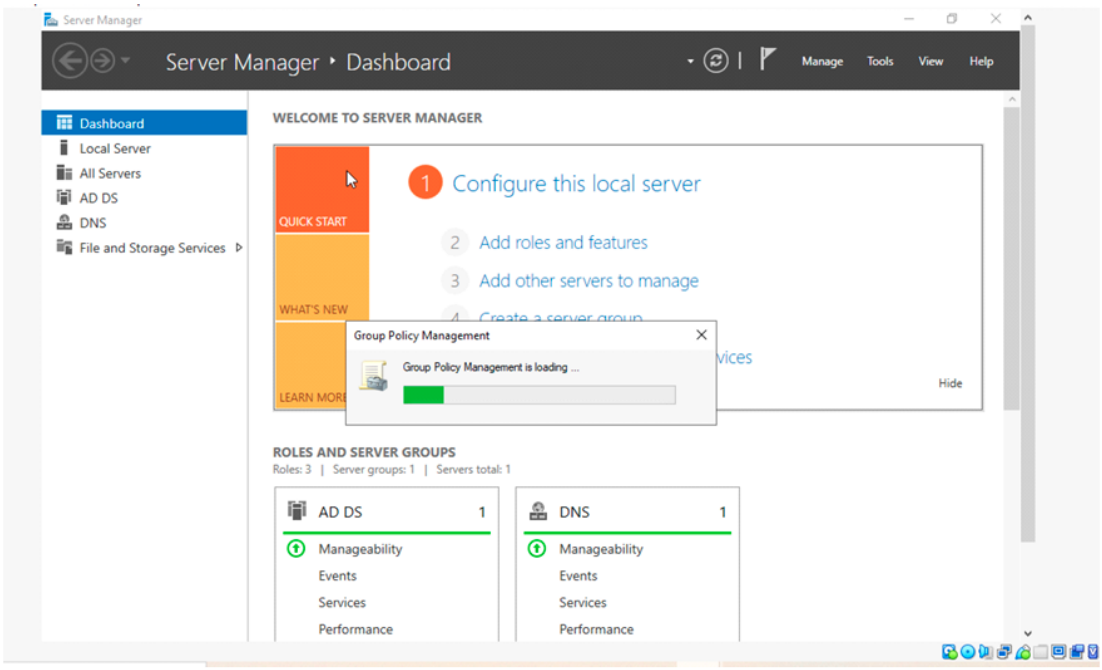
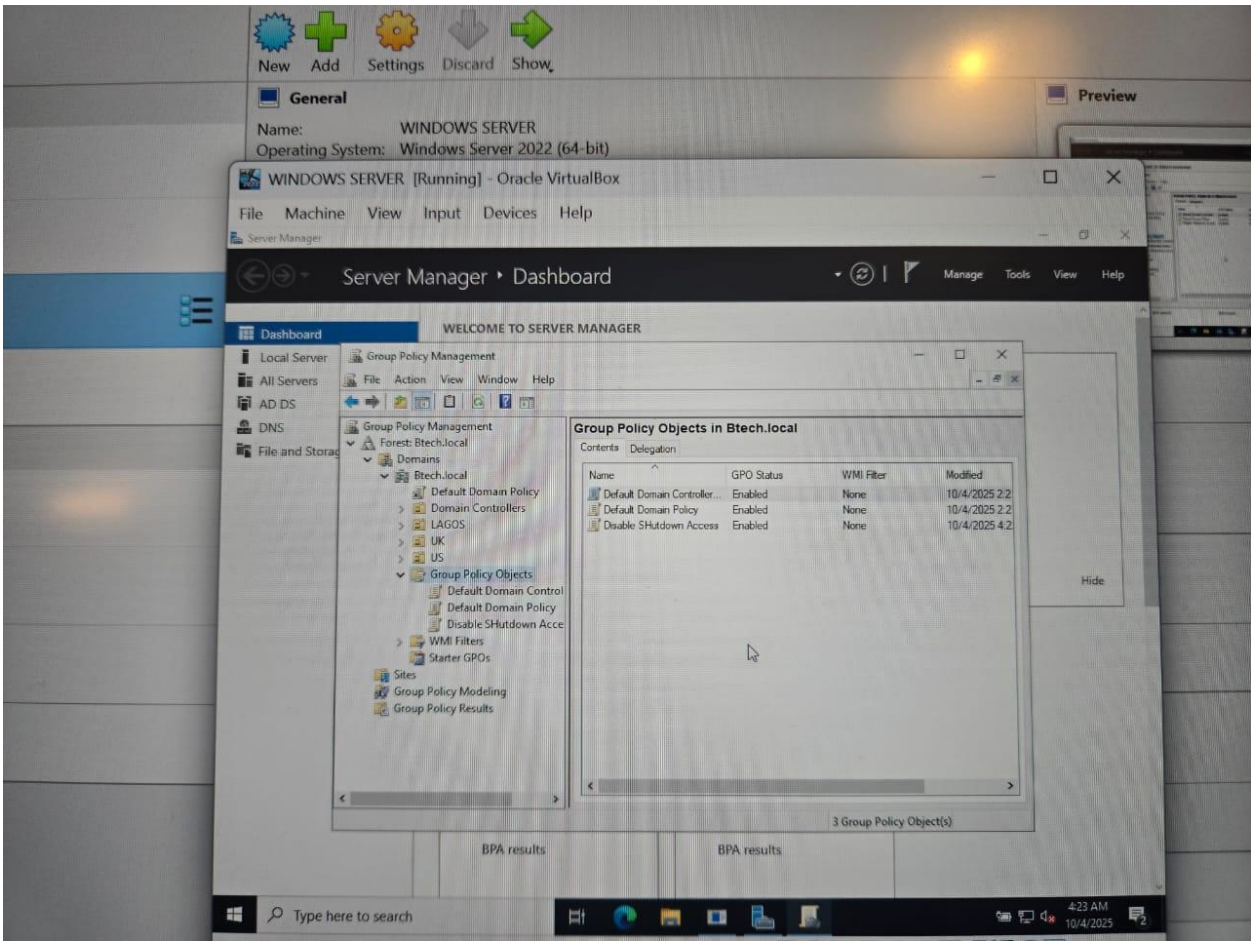
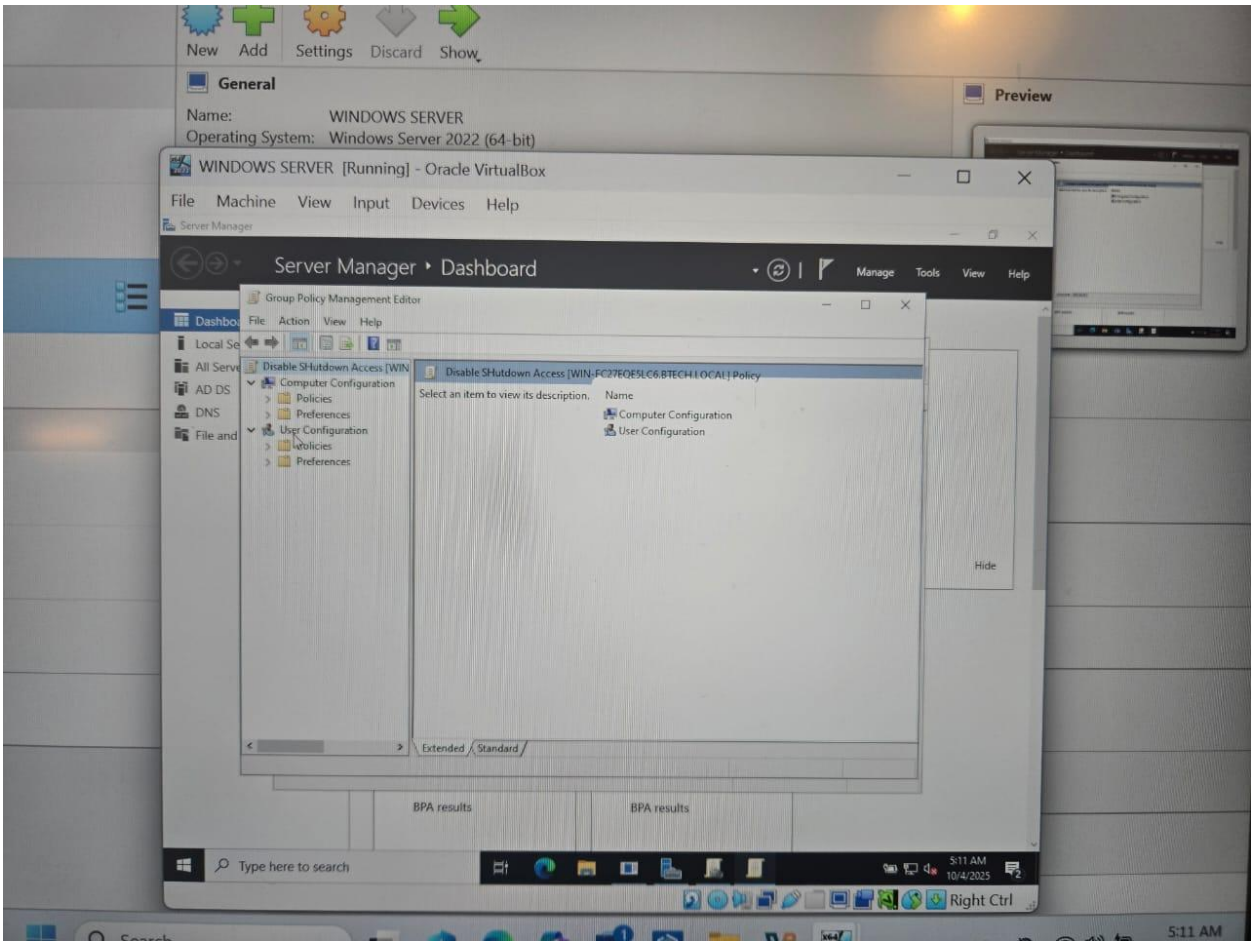


Screenshots stored in project evidence folder)


New
Add
Settings
Discard
Show
General
Name: WINDOWS SERVER
Operating System: Windows Server 2022 (64-bit)
Preview
WINDOWS SERVER [Running] - Oracle VirtualBox
File Machine View Input Devices Help
Server Manager
Server Manager • Dashboard
Manage Tools View Help
Dashboard
Local Server
All Servers
AD DS
DNS
File and Storag
WELCOME TO SERVER MANAGER
Group Policy Management
File Action View Window Help
Group Policy Management
Forest: Btech.local
Domains
Btech.local
Default Domain Policy
Domain Controllers
LAGOS
UK
US
Group Policy Objects
Default Domain Control
Default Domain Policy
Disable SHutdown Acce
WMI Filters
Starter GPOs
Sites
Group Policy Modeling
Group Policy Results
Group Policy Objects in Btech.local
Contents Delegation
Name GPO Status WMI Filter Modified
Default Domain Controller... Enabled None 10/4/2025 2:2
Default Domain Policy Enabled None 10/4/2025 2:2
Disable SHutdown Access Enabled None 10/4/2025 4:2
3 Group Policy Object(s)
Hide
BPA results
BPA results
Type here to search
4:23 AM
10/4/2025


New
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Settings
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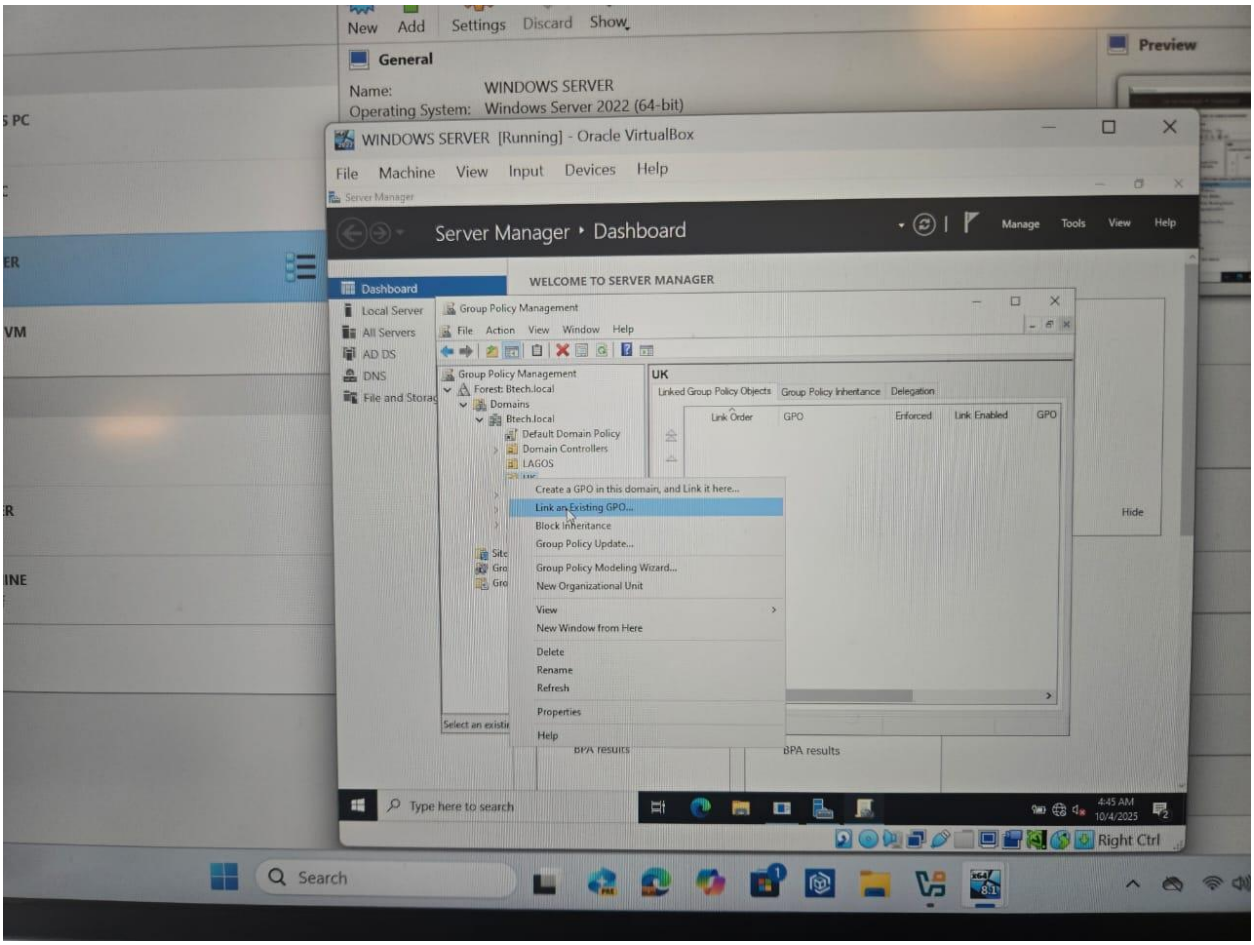
Show
General
Name: WINDOWS SERVER
Operating System: Windows Server 2022 (64-bit)
Preview
WINDOWS SERVER [Running] - Oracle VirtualBox
File Machine View Input Devices Help
Server Manager
Server Manager • Dashboard
Manage Tools View Help
Group Policy Management Editor
File Action View Help
Disable SHutdown Access [WIN
Computer Configuration
Policies
Preferences
User Configuration
Policies
Preferences
Disable SHutdown Access [WIN-FC27EQE5LC6.BTECH.LOCAL] Policy
Select an item to view its description.
Name
Computer Configuration
User Configuration
Extended
Standard
Hide
BPA results
BPA results
Type here to search
5:11 AM
10/4/2025
Right Ctrl
5:11 AM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Group Policy Management
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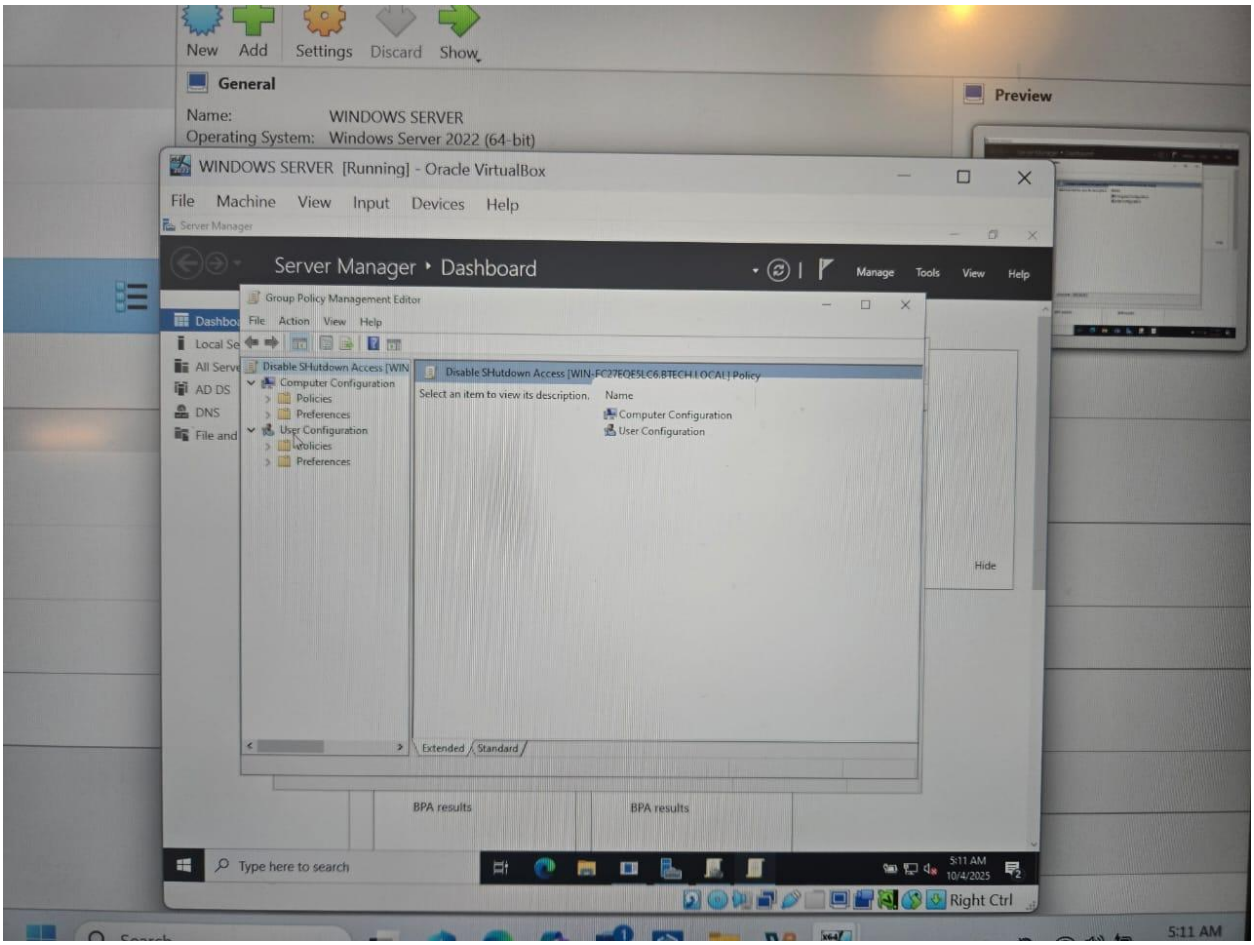
Group Policy Management
Forest: Btech.local
Domains
Btech.local
Default Domain Policy
Domain Controllers
LAGOS
UK
Linked Group Policy Objects
Group Policy Inheritance
Delegation
Link Order
GPO
Enforced
Link Enabled
GPO
Create a GPO in this domain, and Link it here...
Link an Existing GPO...
Block Inheritance
Group Policy Update...
Group Policy Modeling Wizard...
New Organizational Unit
View
New Window from Here
Delete
Rename
Refresh
Properties
Help
Hide
BPA results
BPA results
Type here to search
4:45 AM
10/4/2025
Right Ctrl
Search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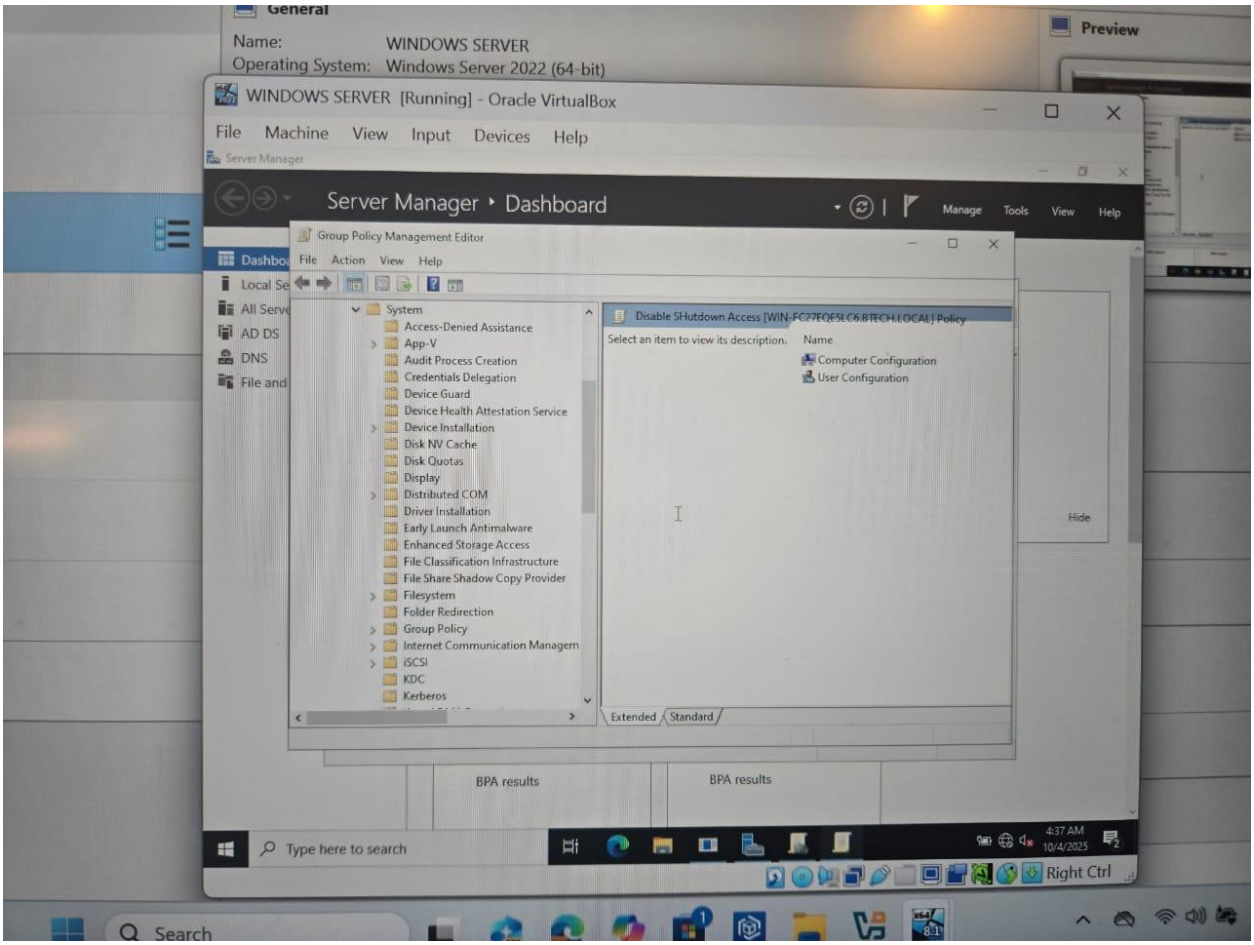
Server Manager
Server Manager • Dashboard
Manage Tools View Help
Group Policy Management Editor
File Action View Help
Disable SHutdown Access [WIN
Computer Configuration
Policies
Preferences
User Configuration
Policies
Preferences
Disable SHutdown Access [WIN-FC27EQE5LC6.BTECH.LOCAL] Policy
Select an item to view its description.
Name
Computer Configuration
User Configuration
Extended
Standard
Hide
BPA results
BPA results
Type here to search
5:11 AM
10/4/2025
Right Ctrl
5:11 AM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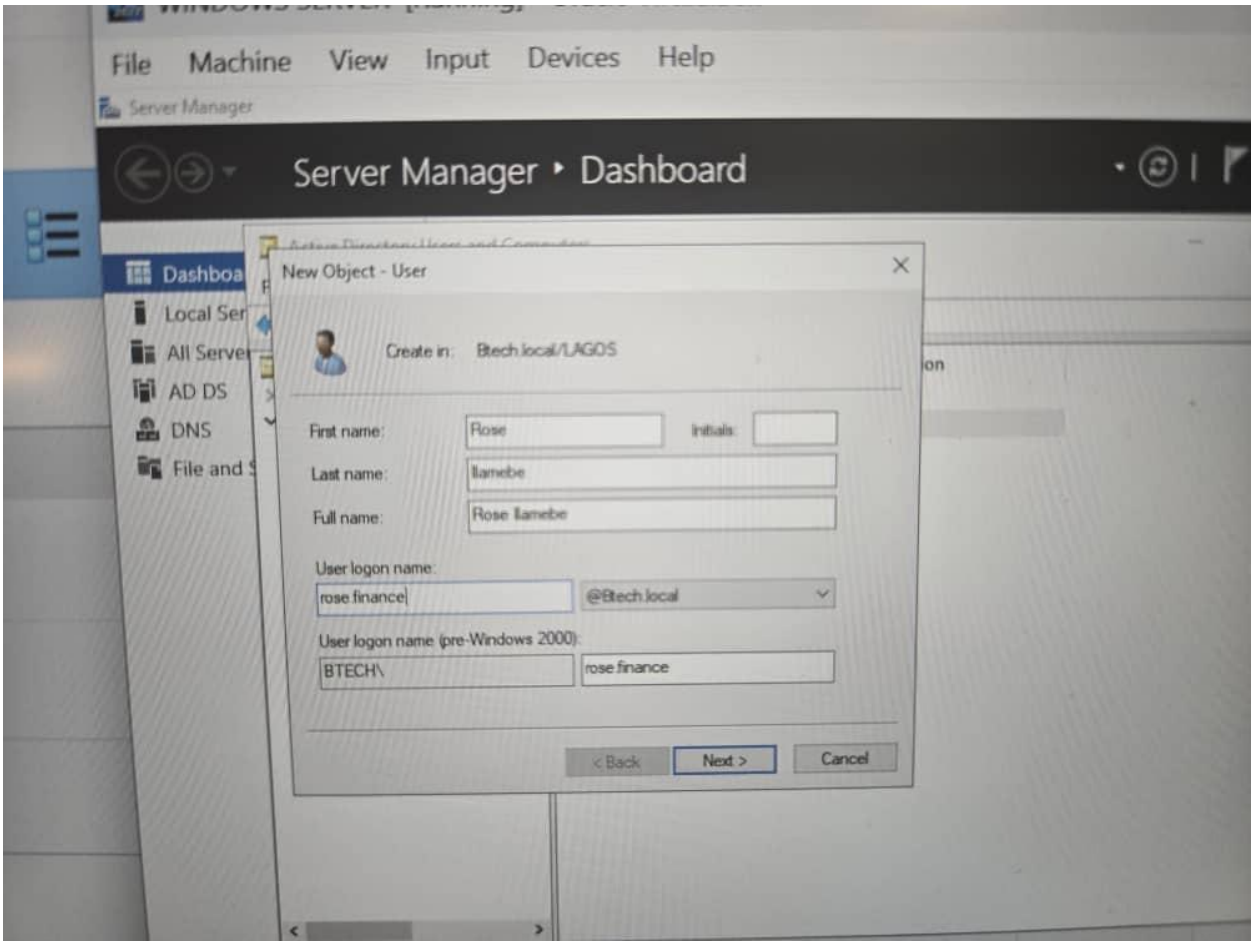
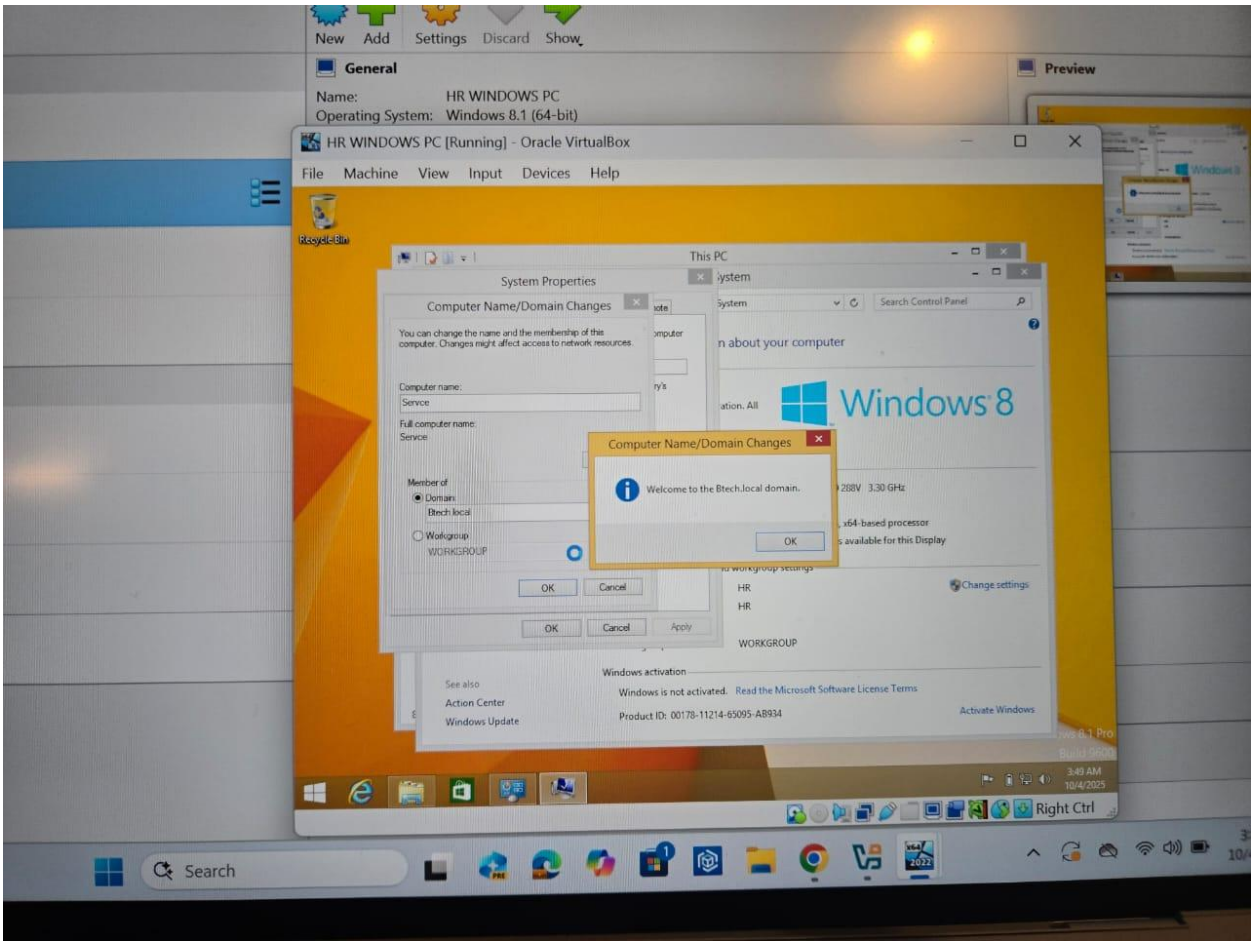
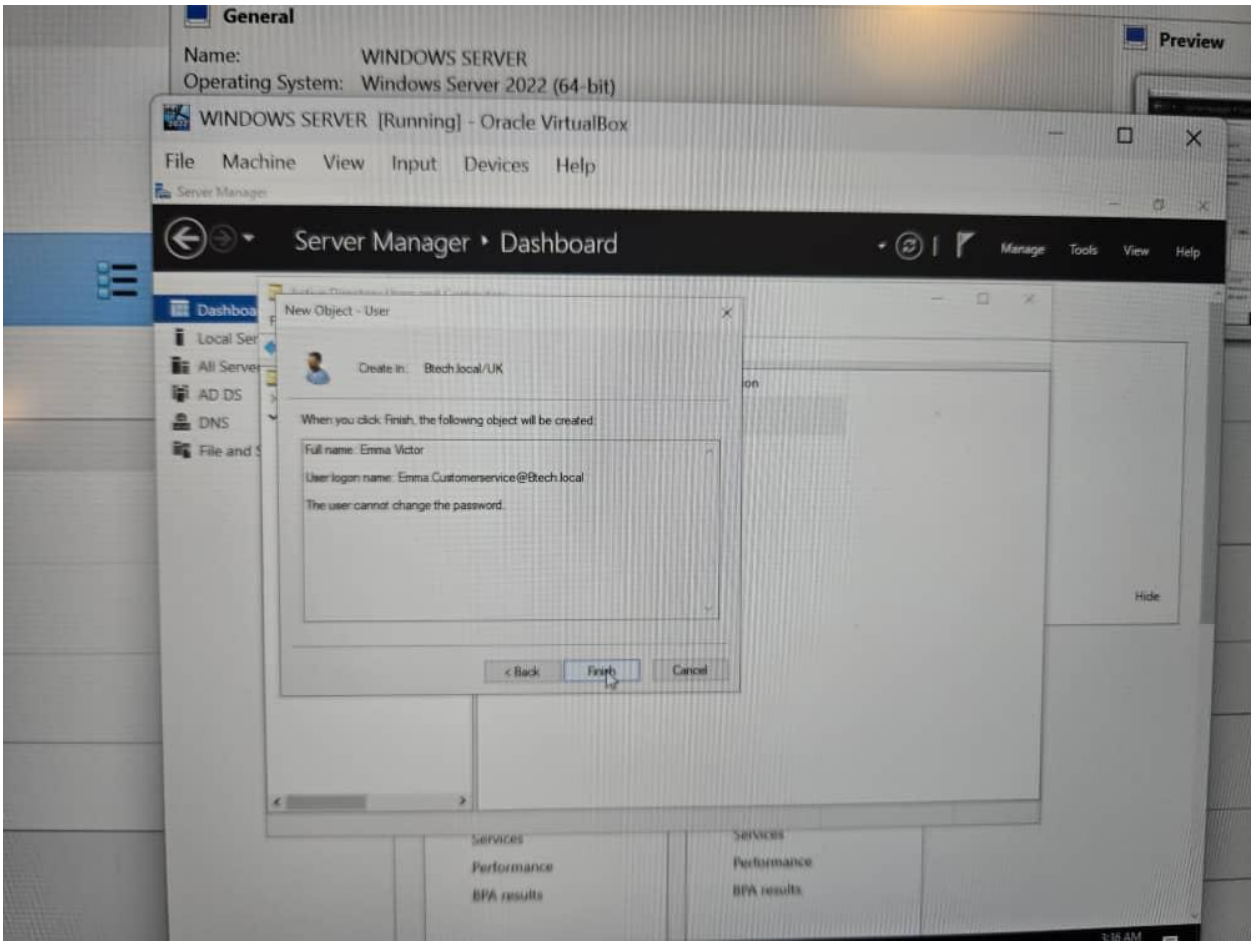
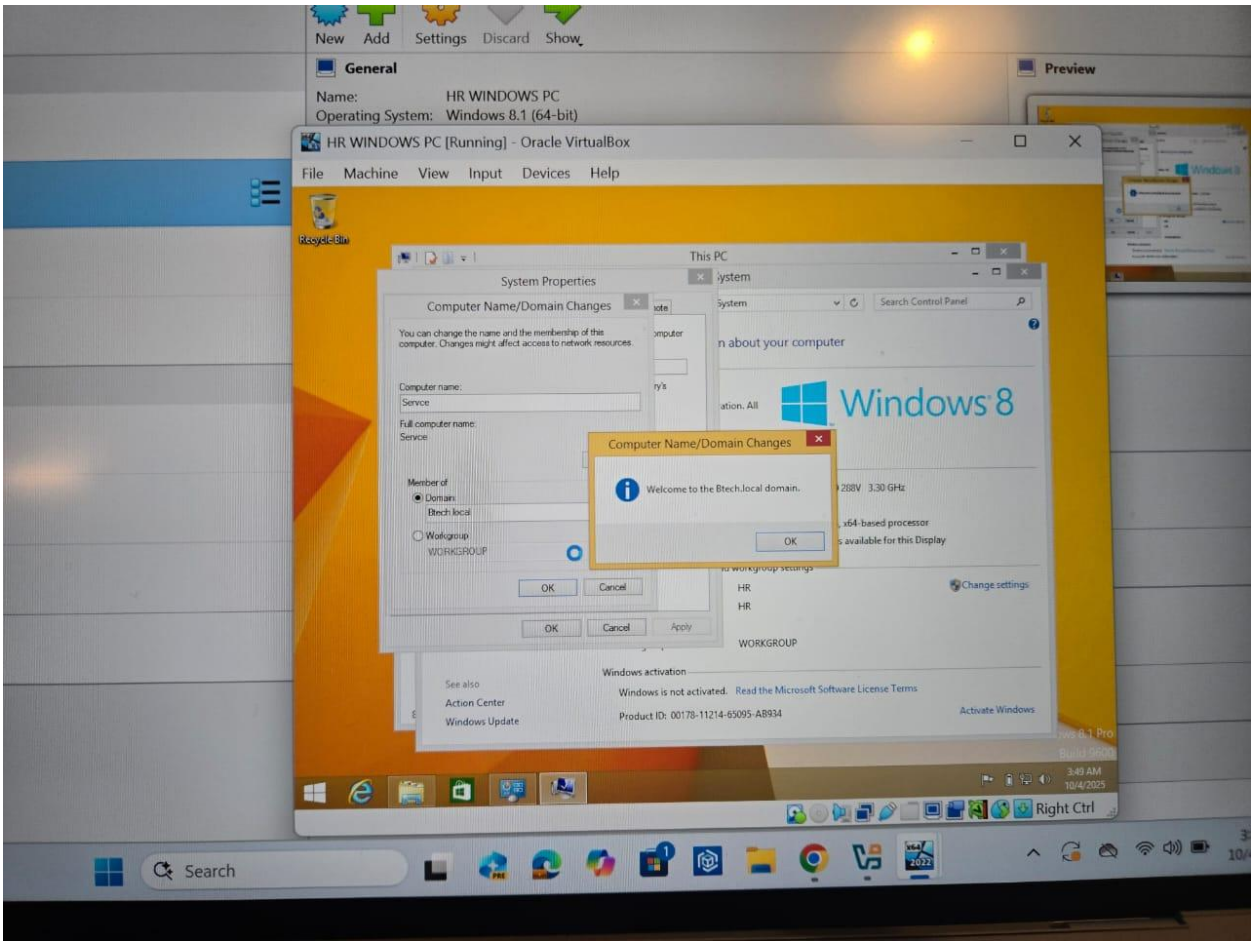
Preview
WINDOWS SERVER [Running] - Oracle VirtualBox
File Machine View Input Devices Help
Server Manager
Server Manager ▸ Dashboard
Manage Tools View Help
Group Policy Management Editor
File Action View Help
System
Access-Denied Assistance
App-V
Audit Process Creation
Credentials Delegation
Device Guard
Device Health Attestation Service
Device Installation
Disk NV Cache
Disk Quotas
Display
Distributed COM
Driver Installation
Early Launch Antimalware
Enhanced Storage Access
File Classification Infrastructure
File Share Shadow Copy Provider
Filesystem
Folder Redirection
Group Policy
Internet Communication Managem
iSCSI
KDC
Kerberos
Disable SHutdown Access [WIN-FC27EQE5LC6.BTECH.LOCAL] Policy
Select an item to view its description.
Name
Computer Configuration
User Configuration
Extended Standard
BPA results
BPA results
Hide
Type here to search
4:37 AM
10/4/2025
Right Ctrl
Search


File Machine View Input Devices Help
Server Manager
Server Manager • Dashboard
New Object - User
Create in: Btech.local/LAGOS
First name: Rose
Initials:
Last name: Ilamebe
Full name: Rose Ilamebe
User logon name:
rose.finance
@Btech.local
User logon name (pre-Windows 2000):
BTECH\
rose.finance
< Back
Next >
Cancel


New
Add
Settings
Discard
Show
General
Name: HR WINDOWS PC
Operating System: Windows 8.1 (64-bit)
Preview
HR WINDOWS PC [Running] - Oracle VirtualBox
File Machine View Input Devices Help
Recycle Bin
This PC
System Properties
Computer Name/Domain Changes
You can change the name and the membership of this computer. Changes might affect access to network resources.
Computer name:
Service
Full computer name:
Service
Member of
Domain:
Btech.local
Workgroup:
WORKGROUP
OK
Cancel
Apply
Computer Name/Domain Changes
Welcome to the Btech.local domain.
OK
Search Control Panel
about your computer
Windows 8
x64-based processor
available for this Display
Change settings
HR
HR
WORKGROUP
Windows activation
Windows is not activated. Read the Microsoft Software License Terms
Product ID: 00178-11214-65095-AB934
Activate Windows
See also
Action Center
Windows Update
Right Ctrl
Search


General
Name: WINDOWS SERVER
Operating System: Windows Server 2022 (64-bit)
Preview
WINDOWS SERVER [Running] - Oracle VirtualBox
File Machine View Input Devices Help
Server Manager • Dashboard
Manage Tools View Help
New Object - User
Create in: Btech.local/UK
When you click Finish, the following object will be created:
Full name: Emma Victor
User logon name: Emma.Customerservice@Btech.local
The user cannot change the password.
< Back
Finish
Cancel
Hide
Services
Performance
BPA results


New
Add
Settings
Discard
Show
General
Name: HR WINDOWS PC
Operating System: Windows 8.1 (64-bit)
Preview
HR WINDOWS PC [Running] - Oracle VirtualBox
File Machine View Input Devices Help
Recycle Bin
This PC
System Properties
Computer Name/Domain Changes
You can change the name and the membership of this computer. Changes might affect access to network resources.
Computer name:
Service
Full computer name:
Service
Member of
Domain:
Btech.local
Workgroup:
WORKGROUP
OK
Cancel
Apply
Computer Name/Domain Changes
Welcome to the Btech.local domain.
OK
Search Control Panel
about your computer
Windows 8
x64-based processor
available for this Display
Change settings
HR
HR
WORKGROUP
Windows activation
Windows is not activated. Read the Microsoft Software License Terms
Product ID: 00178-11214-65095-AB934
Activate Windows
See also
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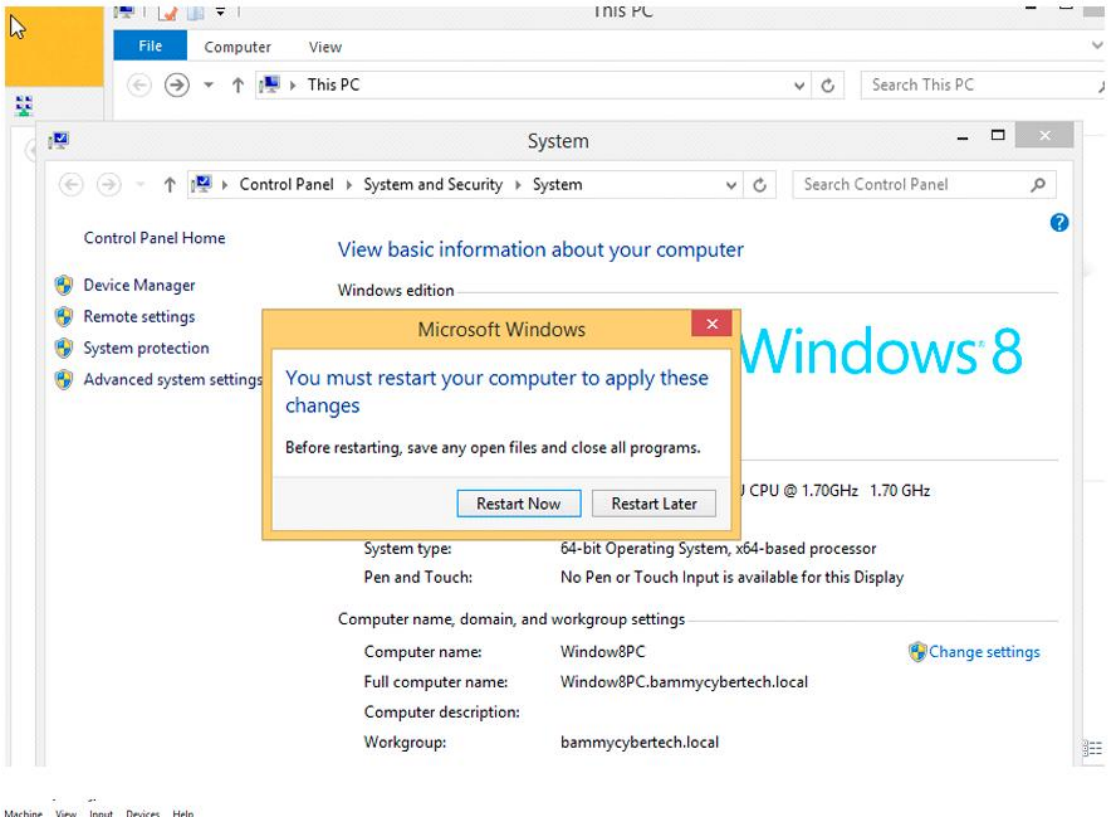
Windows Update
Right Ctrl
Search



Key Takeaways

• Successfully implemented an IAM framework on Active Directory.

• Mapped business structure (regions and departments) into OUs and groups.

• Demonstrated access control enforcement using Group Policy Objects (GPOs).

• Learned how to provision and manage users, groups, and security policies.

• Applied identity governance principles in a real-world simulated enterprise environment.