

Occupational specialism assessment (OSA)

Digital Support

Assignment 1 - Pass

Guide standard exemplification materials

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T Level Technical Qualification in Digital Support Services Occupational specialism assessment

Guide standard exemplification materials

Digital Support

Assignment 1

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Introduction

The material within this document relates to the Digital Support occupational specialism sample assessment. These exemplification materials are designed to give providers and students an indication of what would be expected for the lowest level of attainment required to achieve a pass or distinction grade.

The examiner commentary is provided to detail the judgements examiners will undertake when examining the student work. This is not intended to replace the information within the qualification specification and providers must refer to this for the content.

In assignment 1, the student must first plan a network installation, then install and configure a small network, before producing installation notes to inform the client of the work they have carried out.

After each live assessment series, authentic student evidence will be published with examiner commentary across the range of achievement.

Assignment 1:

Scenario

You are a digital support specialist who has been contracted to work for a new small food manufacturing company (the client) based in the North of England.

The client requires your digital expertise in planning to support a future network. There are currently no business control techniques in place as the company is only just starting out, and they are unaware of any measures on how to operate their data systems effectively, appropriately, and securely.

The client also requires your immediate support with preparing and installing a smaller network of computers and a mobile device for the employees within the company.

Task 1: prepare for installation

Time limit

8 hours

Task 1(a) must be completed prior to starting task 1(b).

Task 1(a) is allocated 3 hours 30 minutes.

Task 1(b) is allocated 4 hours 30 minutes.

You can use the time how you want but each task must be completed within the time limit.

(20 marks)

Student instructions

Based on the scenario, you are required to complete the relevant preparation that will enable you to set-up 100 computers, a switch, server and 5 colour printers including identifying the relevant software for the client in the future. The network would be required to be set-up within a 2 week window, to ensure all employees are up and running as quickly as possible.

You are required to:

1(a) Create a report to explain the security considerations required for the installation, configuration, and support of end-user services to ensure confidentiality, integrity and availability including:

- suitable recommendations on implementing business control techniques within the workplace (physical/administrative)
- explanations on how the client should operate the new data systems effectively, appropriately, and securely, considering GDPR/ DPA 2018 and its principles

(8 marks)

1(b) Plan and complete the relevant network planning documentation:

- health and safety risk assessment for the work to be undertaken
- network planning, including:
 - o timescales
 - o network design, including IP addressing scheme
 - o inventory
 - o security risk assessment for the work to be undertaken, according to ISO 27001 principles

(12 marks)

You will have access to the following equipment:

• a computer with office software pre-installed

Evidence required for submission to NCFE

The following evidence should be submitted:

- summary of all business controls documentation required (word processing document)
- summary of how to secure data systems effectively (word processing document)
- health and safety risk assessment (worksheet in appendix 1)
- network planning documentation including timescales and network design (word processing document)
- inventory log (worksheet in appendix 1)
- security risk assessment (worksheet in appendix 1)

Student evidence

Task 1(a)

Security recommendations for the implementation of business controls in the workplace

Introduction

As a business we have a responsibility to put in place controls to protect our networks and data from loss (accidental or deliberate), theft or damage. To be effective in this we need to ensure that adequate controls are put in place and best practice is that we should use a range of controls of different categories.

Categories of controls include:

- physical any control which involves a physical action taking place or object in use (for example, locked doors, ID badges, air gapping).
- administrative any control that involves a procedure or process that may control behaviour to improve security (for example, operating procedures, password policies or mandatory training)

We can also categorise controls based on how they operate:

- preventative such as installing a keycard reader on the server room door to restrict access to the room.
- detective such as CCTV cameras to identify who tries to gain access to the server room
- corrective such as using logs to identify who has had access to areas
- deterrent such as signs indicating that security measures are in place, such as the keycard or CCTV
- directive such as the creation of policies around access and security
- compensating such as having various backup policies in place to protect data rather than offsite duplicate servers
- recovery such as fallover servers off site in case of emergency onsite, whilst expensive this allows for quick restoration

It is possible for controls to fit across multiple categories (for example, a CCTV camera would be an example of a physical control that is both detective and deterrent).

A good security posture will include a mix of both physical and administrative controls and will also include preventative, detective, corrective, deterrent, directive, compensating and recovery controls.

Recommendations

For our network it is recommended that we implement the following controls:

- locked server room
- CCTV cameras
- checking logs
- no entry signage in secure areas
- server rooms should be air conditioned
- password policy with password training
- server backups

Operating the data systems

As well putting these security controls in place it is important that data is handled correctly and securely. This is particularly the case with customer data and information as failure to do so could include a breach of the Data Protection Act (DPA) 2018 which incorporates the General Data Protection Regulation (GDPR) into British law.

The DPA 2018 includes the following principles:

- lawfulness, fairness, and transparency:
 - o all data collected must be done in a legal manner
- purpose limitation:
 - we can only use data how we have told the customer we will
- data minimisation:
 - o we can only collect data we need
- accuracy:
 - \circ ~ where we hold data on a customer, we need to make sure it is up to date
- storage limitation:
 - o we can only keep data for as long as we need it
- integrity and confidentiality (security):
 - o all data needs to be kept secure
- accountability:
 - o we need to keep records of the data we are keeping

Summary

To ensure that we meet our obligations under the DPA 2018 and to ensure that we protect our networks and data (including company confidential data) adequately we need to implement a range of controls (administrative and physical) across our network. The recommendation above will give a range of preventative, detective, corrective, deterrent, directive, compensating and recovery controls that will maximise the protection our network has from a wide range of potential attacks.

Task 1(b)

Network design

Client specification

Network should include:

- 1 server
- 100 client PCs
- 5 colour printers
- switch

To meet this requirement, I am recommending that we install:

- server:
 - o 1 server running Windows Server 2016
 - o for security the server should also include antivirus software
- client PCs:
 - o all client PCs should be installed with Windows 10 and joined to the server
 - all client PCs should be installed with the following software:
 - Office 365 (Word, Excel, PowerPoint and Outlook)
 - Adobe Acrobat
 - antivirus software
- switches:
 - we will need a managed switch to connect all devices to the network
- IP addressing:
 - o it is recommended that the network is configured using the following IP addressing scheme:
 - network IP addressing:
 - network: 192.168.0.0/24
 - o IP addresses:
 - 192.168.0.1 server
 - 192.168.0.10 to 14 printers
 - Windows computers:
 - 192.168.0.100 to 199

Full details of network configuration can be seen by consulting the network configuration diagram at the foot of this document.

Network installation plan

The network installation should be completed with the following steps:

- stage 1: physical infrastructure set-up:
 - o physical installation of switches and router firewall
 - o physical installation of cabling
- stage 2: server installation:
 - o installation of server 2016 software
 - o configuration of server settings
 - o installation of Active Directory
 - installation of security software
- stage 3: set-up and configuration of client PCs:
 - o installation of Windows 10 on reference client PC
 - o installation of key software (office, Adobe Acrobat)
 - o preparing system ready for imaging
 - o imaging of PC
 - o adding image to installation server
 - physical installation of client PCs (physical set up)
 - o PCs connected to installation server
 - remote installation of client PCs

Project completed.

		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14
	Physical installation of Switches and														
Stage 1: Physical Infrastructure Setup	Router Firewall														
	Physical installation of Cabling														
	Installation of Server 2016 Software														
Stage 2: Server Installation	Configuration of Server Settings														
	Installation of Active Directory														
	Installation of Security Software														
	Installation of Windows 10 on reference Client PC														
	Installation of key software (Office, Adobe Acrobat)														
	Sysprep of system ready for imaging														
Stage 3: Setup and Configuration of Client PCs	Imaging of reference PC														
	Answer file created including configuration of Domain Join														
	Adding Sysprepped image to Installation server														
	Physical installation of client PCs (physical setup)														
	PCs connected to Installation server via PXE boot														
	Remote installation of client PCs.														
	Project Completed.														

Network diagram



Task 2: install and configure a small network

Time limit

11 hours

You can use this time how you want but all parts of task 2 must be completed within the time limit.

(56 marks)

Student instructions

The client has asked you to install a new small network, against a set of requirements. These devices can be either virtual, physical or emulator.

All employees will use the computers centrally within head office, and any off-site employees will use a mobile device (laptop, tablet or phone) to be able to work remotely via the approved remote working solution.

The computers need to be set up allowing the employees to email, write letters to suppliers, update financial spreadsheets and create weekly presentations.

The computers will also need to access the internet and have instant messaging/video conferencing software such as Skype, GoToMeeting or Teams on Microsoft office 365 installed. Employees will require access to project management software in order to help them plan upcoming projects.

The client wants to ensure there is suitable software installed to mitigate any vulnerabilities to the system, including suitable back up security controls in place.

The client has also asked you to create installation notes for the software installations that took place, in order to support their staff responsible for IT. Your final task is therefore to create a useable document that briefs these individuals on the set-up of your system.

You will have access to the following equipment:

- 3 computers with full administrator rights, or virtual/emulator machine and software
- internet
- operating system
- word processing, presentation and spreadsheet software
- email software
- instant messaging software
- project management software
- mobile device or emulator
- IP address allocations for task 2 in line with provider's own network IP addressing schema
- digital camera

2(a) You must install, configure and support a small-scale network which includes 3 workstations and one mobile device via WiFi and evidence (you should reference the IP addressing schema allocated to you by your provider):

- implementing physical network and network security measures to prevent the unauthorised access, misuse, modification or denial of a computer, information system or data (CIA and IAAA)
- install Windows Server and create Active Directory
- software licence management (software install log within appendix 1)

Note: you will need to provide annotated screenshots for the processes you follow and the implementations you make along with any key explanations for all decisions. As you carry out the various tasks, you will log all network security measures that have been implemented along with any software installations that are planned and how software licenses will be managed in the provided installation and configuration log (security risk assessment and software install log worksheets in appendix 1).

(18 marks)

Evidence required for submission to NCFE

The following evidence should be submitted:

• annotated screenshots (if using virtual machines) or photographs (if using physical machines/devices) showing the setup and successful implementation of the network and server/Active Directory install

2(b) Provide evidence of the following for the client:

- installing and setting up an operating system and antivirus software
- join computer to Active Directory domain
- installing and configuring application software suitable for the client
- implementing back up security controls
- install/update device drivers

Whilst waiting for the installation to take place, set-up and configure a WiFi mobile device for network connectivity:

- · configure a mobile device to include device lock security measures, mobile locator application and back up
- · carry out all necessary mobile device updates including anti-virus

Note: You will need to provide annotated screenshots/photographs for the processes you follow and any implementations you make. This will include completing the software installation log (worksheet in appendix 1) and explaining your justifications for your decisions. You will also need to show evidence of any drivers which require installing, alongside taking screenshots of device manager. When updating any software/OS updates, you must evidence that there are no further updates required on the system. The installation may take some time to complete and therefore you should continue with task 2(c).

(22 marks)

Evidence required for submission to NCFE

The following evidence should be submitted:

 screenshots (if using virtual machines) or photographs (if using physical machines/devices) showing the setup and successful implementation of software, device driver status and mobile device 2(c) Review the installation and configuration notes and log (started in task 1) that report the following information to the client, making sure it is up-to-date and correct:

- record of all operating system/software application installations and utilities, upgrades, uninstalls and any major configuration changes
- identify and explain any vulnerabilities detected in the current system set-up/network
- recommend actions to mitigate any vulnerabilities found

Note: You will have been filling in the installation and configuration log as you have been completing the task. You will need to review what you have done, ensure that all information contained is correct and also identify the vulnerabilities and mitigations required.

Apply your communication skills appropriately, using standard English. Use accurate spelling, punctuation and grammar. Consider your target audience.

(16 marks)

Evidence required for submission to NCFE

The following evidence should be submitted:

- annotated screenshots and/or photographs for the set-up and successful implementation of the network and server/active directory install
- screenshots and/or photographs for the set-up and successful implementation of software, device driver status and mobile device
- completed installation and configuration log (appendix 1)

Student evidence

Task 2(a)

Evidence for this task will include a series of either screenshots or photographs documenting the installation process to show what I done. I have provided a descriptor for each key screenshot I would anticipate along with the appropriate commentary. It is likely that these screenshots will have been taken of an installation of server software such as Windows Server 2016.

Installing Windows Server 2016

Screenshot:

Image: Windows Setup Image: Windows Server* 2016 Language to install: English (United States) Image: Imag	★ Windows Setup Windows Setup Windows Server* 2016 Language to install: English (United States) Time and currency format: English (United Kingdom) Keyboard or input method: United Kingdom Enter your language and other preferences and click "Next" to continue. Vext		
♥ 2016 Microsoft Corporation. All rights reserved.	Windows Server 2016 Language to install: English (United States) Time and currency format: English (United Kingdom) Keyboard or input method: United Kingdom Chrter your language and other preferences and click "Next" to continue. Net 100 Microsoft Corporation. All rights reserved.	Windows Setup	
Language to install: English (United States) Image: Comparing the state in the state is a state in the state in the state is a state in the state in the state is a state in the state in the state is a state in the state in the state is a state in the state in the state is a state in the state in the state is a state in the state in the state is a state in the state in the state is a state in the state i	Language to install: English (United States) Time and currency format: English (United Kingdom) Keyboard or input method: United Kingdom Enter your language and other preferences and click "Next" to continue. © 2016 Microsoft Corporation. All rights reserved.	Windows Server [•] 2016	
Language to install: English (United States) Image: Constall: English (United States) Time and currency format: English (United Kingdom) Image: Constall Constaller Keyboard or input method: United Kingdom Image: Constaller Enter your language and other preferences and click "Next" to continue. © 2016 Microsoft Corporation. All rights reserved.	Language to install: English (United States) Time and currency format: English (United Kingdom) Keyboard or input method: United Kingdom Enter your language and other preferences and click "Next" to continue. © 2016 Microsoft Corporation. All rights reserved. 		
Lime and currency format: Itinglish (United Kingdom) Keyboard or input method: United Kingdom Enter your language and other preferences and click "Next" to continue. © 2016 Microsoft Corporation. All rights reserved.	Time and currency format: English (United Kingdom)	Language to install: English (United States)	
Enter your language and other preferences and click "Next" to continue. © 2016 Microsoft Corporation. All rights reserved.	Enter your language and other preferences and click "Next" to continue. © 2016 Microsoft Corporation. All rights reserved.	Lime and currency format: <u>English (United Kingdom)</u> Keyboard or input method: United Kingdom	<u> </u>
© 2016 Microsoft Corporation. All rights reserved.	© 2016 Microsoft Corporation. All rights reserved.	Enter your language and other preferences and click "Next" to continue.	
		© 2016 Microsoft Corporation. All rights reserved.	<u>N</u> ext

• I select the correct language to install (UK) after booting Windows.

1	🕞 💰 Windows Setup			
	Select the operating system you want to install			
	Operating system	Architecture	Date modified	
	Windows Server 2016 Standard Evaluation	x64	7/16/2016	
	Windows Server 2016 Standard Evaluation (Deskton Experien	x64	7/16/2016	
	Windows Server 2016 Datacenter Evaluation Windows Server 2016 Datacenter Evaluation (Desktop Experie	хб4 хб4	7/16/2016 7/16/2016	
	Description: This option is useful when a GUI is required—for example, to pro application that cannot be run on a Server Core installation. All s supported. For more details see "Windows Server Installation Op	ovide backward (server roles and f tions."	compatibility for an ieatures are <u>N</u> ext	
suffecting information	Installing Windows			

I choose the correct version of Windows. I also select the desktop experience. Otherwise, it will be command line only

G	Mindows Setup	X
	Applicable notices and license terms	
	IMPORTANT NOTICE (followed by LICENSE TERMS) Diagnostic and Usage Information. Microsoft automatically collects this information over the internet, and uses it to help improve your installation, upgrade, and user experience, and the quality and security of Microsoft products and services. Consistent with these purposes, the information may be associated with your organization. Windows Server 2016 has four (4) information collection settings (Security, Basic, Enhanced, and Full), and uses the "Enhanced" setting by default. This level includes information required to: (i) run our antimalware and diagnostic and usage information technologies; (ii) understand device quality, and application usage and compatibility; and (iii) identify quality issues in the use and performance of the operating system and applications.	t
1 Collecting information 2	Installing Windows	

• I agree to the licence as this is mandatory

	Which type of installation do you want?
	<u>Upgrade: Install Windows and keep files, settings, and applications</u> The files, settings, and applications are moved to Windows with this option. This option is only available when a supported version of Windows is already running on the computer.
	<u>C</u>ustom: Install Windows only (advanced) The files, settings, and applications aren't moved to Windows with this option. If you want to make changes to partitions and drives, start the computer using the installation disc. We recommend backing up your files before you continue.
	Help me decide
ollecting information	2 Installing Windows

• I select custom so that I can choose the location to install to (below)

0	🔏 Windows Setup		
	Where do you want to install Windo	ws?	
	Name	Total size Free space Type	
	Drive 0 Unallocated Space	40.0 GB 40.0 GB	
		Eormat 🕌 New	
	Lead driver		
	Engenning Strend		
			Next
Collecting information	Installing Windows		
1 2			

• I select the install location. In this case, it's the only disk

	🔏 Windows Setup	
	Installing Windows Status Copying Windows files Getting files ready for installation (0%) Installing features Installing updates Finishing up	
$1^{\text{Collecting information}}$	2 Installing Windows	

• Windows is now installing

Custom <u>ize</u>	e settings			
Type a password for th	e built-in administrator account	that you can use to sign in t	o this computer.	
<u>J</u> ser name	Administrator			
assword	•••••			
Reenter password	•••••	<u>م</u>		
Ċ7				<u>F</u> inish

- I create an admin password for security
- These screenshots show me installing the server. Windows is now installed; I am prompted to set a password for the main local administrator account for the server

Screenshot:



• I log in as administrator using the login and password previously set-up



• I have checked device manager. All drivers for this server have been detected and installed

Setting up network settings

Screenshots:



• I open the network settings

📥 Server Manager					– 0 ×
. • ⊛€	Server Manager 🔸 [Dashboard		🕑 🚩 Manage	Tools View Help
	Network and Sharing Center			—	× ^
🔛 Dashboard	← → × ↑ 🔽 « Network	and Internet > Network and Sharing Center	v ⊆	Search Control Panel	Q
Local Server	Control Danal Homa	View your basic network informa	ation and set up	-connections	
All Servers	Control Pallel Home	Ethernet Status	×		
📲 File and Storag	Change adapter settings	General			
	Change advanced sharing settings	Connection		ype: Internet	
		IPv4 Connectivity:	Internet	ions. w chemer	
		IPv6 Connectivity: No	network access		
		Media State:	Enabled		
		Speed:	10.0 Gbps	up a router or access point.	
		Details			
				hooting information	124-
				nooting mornation.	Hide
		Activity Sent Sent	Received		
		Bytes: 1,117,401	12,026,368		
		Properties Diagno	se		
			Close	1	
	See also			1	
	Windows Firewall				
		BPA re	esults		
			02/01/202	1 22,26	22:33
					03/01/2021 🕐

• I can see the selected network properties, and there is no connection

📥 Server Manager		-	- 0 X
€∢	Server Manager • [Dashboard 🔹 🕄 🖡 Manage Tools	View Help
	Network and Sharing Center	- 🗆 X	^
🔛 Dashboard	🔶 🔶 👻 🛧 💺 « Network	and Internet > Network and Sharing Center v 👌 Search Control Panel 🔎	
Local Server	Cartal Develutions	View your basic network information and set up connections	
All Servers		Charact Statur	
File and Storag	Change adapter settings		
	Change advanced sharing settings	Networking : Internet	
		Co	
		General Alternate Configuration	
		The You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator ccess point.	
		for the appropriate IP settings.	
		Obtain an IP address automatically tion.	Hide
		Use the following IP address:	
		IP address:	
		Subnet mask:	
		Default gateway:	
		Obtain DNS server address automatically	
		Use the following DNS server addresses:	
		Preferred DNS server:	
	See also	Alternate DNS server:	
	Internet Options	Validate settings upon exit	
	windows Firewall	Advanced	
		OK Cancel	-
		02/01/2021 22/26	22:34
		l l l l l l l l l l l l l l l l l l l	3/01/2021 2

• I have located the properties for the network adapter

Server Manager Server Manager C Server Manager C Server Manager	ashboard • (②	- 🗇 X
$\blacksquare Dashboard \leftarrow \rightarrow \checkmark \uparrow \blacksquare \ll Network a$	ad Internet \rightarrow Network and Sharing Center \checkmark \circlearrowright	Search Control Panel	
 Local Server All Servers File and Storac Change adapter settings Change advanced sharing settings See also Internet Options Windows Firewall 	View your basic network information and set up of Ethernet Properties Ethernet Properties Ethernet Properties Microsoft Hyper-V Network Adapter Microsoft Hyper-V Network Adapter Diffigure This connect using: Microsoft Hyper-V Network Adapter Client for Microsoft Networks QoS Packet Scheduler QoS Packet Scheduler Microsoft Network Adapter Multiplexor Protocol Microsoft LLDP Protocol Driver Microsoft Chersion 6 (TCP/IPv6) Install Poperties Install Pescription Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks. OK	connections : Internet :: Internet : Internet : a router or access point. oting information.	Hide
🔳 A 🗆 🥭 🗖 🖶 📟	BPA results	926 역= 및 다 ₈	22:34 03/01/2021

• These screenshots show me opening the properties for my network card and setting the IP address

Screenshots

📥 Server Mana	ger			_	o ×
$ \mathbf{E} $	Server Ma	anager • Dashboard	• @	Manage <u>T</u> ools	<u>V</u> iew <u>H</u> elp
	System Properties	×		- 🗆 X	^
🔛 Dashbc	Computer Name Hardwar	e Advanced Remote	System v Ö Search	Control Panel 🔎	
Local Serv	Windows uses on the network	the following information to identify your computer	ion about your computer	0	
File and	Computer description:				
	Full computer name:	For example: "IIS Production Server" or "Accounting Server". WIN-D5742H8EN2J	Standard Evaluation	s Server [®] 2016	
	Workgroup:	WORKGROUP			
	To rename this computer workgroup, click Change.	or change its domain or Change OK Cancel Apply Windows activation	Intel(R) Core(TM) i5-8265U CPU @ 1.60GH V): 2.00 GB (0.98 GB usable) 64-bit Operating System, x64-based proces No Pen or Touch Input is available for this and workgroup settings WIN-D5742H8EN2J WIN-D5742H8EN2J WORKGROUP	z 1.80 GHz ssor Display Change settings	Hide
		Windows is activated	d Read the Microsoft Software License Terms		
	See also Security and	Product ID: 00378-0 Maintenance	0000-00000-AA739	Change product key	
			BPA results		~
م 📕	(D) 🬔 🔚	📥 📟 🦉		'画 🍢 여 _호 ₀₃	22:39 8/01/2021

• I can now rename the PC so that it is can easily be known

Server Manag	ager	a X
	System Properties X – – X	^ ^
🔛 Dashbo	Computer Name/Domain Changes X System V O Search Control Panel P	
Local Se All Serv	You can change the name and the membership of this computer. Changes might affect access to network resources.	
	Computer name: WIN-D5742H8EN2J Full computer name: WIN-D5742H8EN2J Windows Server* 2016	
	More ange Member of Domain: O Domain: 2.00 GB (0.98 GB usable) 64-bit Operating System, x64-based processor No Pen or Touch Input is available for this Display	Hide
	WORKGROUP WIN-D5742H8EN2J WIN-D5742H8EN2J WIN-D5742H8EN2J	
	OK Cancel Apply WORKGROUP	- 1
	Windows is activated Read the Microsoft Software License Terms	
	Product ID: 00378-00000-00000-AA739 Change product key See also Security and Maintenance	
	BPA results	~
م 🖿		:40 1/2021

• I give it a new name

Server Manag	Server Manager • Dashboard	• ② ▼ Manage Iools <u>V</u> iew	⊡ × <u>H</u> elp
	System Properties ×	X	^
Dashbc	Computer Name/Domain Changes X	System V O Search Control Panel P	
Local Se All Serv	You can change the name and the membership of this computer computer. Changes might affect access to network resources.	ion about your computer	
	Computer name: DC01 Full computer name:	itandard Evaluation poration. All rights Windows Server* 2016	
	DC01 Member of Domain: Workgroup: WORKGROUP OK Cancel	Intel(R) Core(TM) i5-8265U CPU @ 1.60GHz 1.80 GHz VI): 2.00 GB (0.98 GB usable) 64-bit Operating System, x64-based processor No Pen or Touch Input is available for this Display and workgroup settings WIN-D5742H8EN2J WIN-D5742H8EN2J WIN-D5742H8EN2J	iide
	OK Cancel Apply Windows activation	WORKGROUP	
	Windows is activated	Read the Microsoft Software License Terms	
	Product ID: 00378-000 See also Security and Maintenance	00-00000-AA739 SChange product key	
		BPA results	~
م	🗆 🤌 🔚 🔚 💷 🥺	空2:4: 會 및 4 <mark>8</mark> 03/01/2	1 2021 2

Adding name

• The above 3 images show me opening the computer name settings and changing the computer name DC01

Allocating server roles

Screenshot



• I now open Server Manager

Server Manager	ver Manager • Dashboard	• ② 🚩	— 🗇 🗙 Manage Tools View Help
 Dashboard Local Server All Servers File and Storage Ser 	Add Roles and Features Wizard Select installation type Before You Begin Installation Type Server Selection Refere Selection Select the installation type Configure a circle configur	e. You can install roles and features on a running physi virtual hard disk (VHD). re-based installation	DESTINATION SERVER DC01 ical computer or virtual
	Server Roles Features Confirmation Results Confirmation Confirmation Confirmation Results Confirmation Co	ver by adding roles, role services, and reatures. vices installation vices for Virtual Desktop Infrastructure (VDI) to create top deployment.	a virtual machine-based ide
		< Previous Next > 1	nstall Cancel
	e 🗖 占		22:46 🖻 🖫 🕼 22:46

- I choose role-based installation to add the new roles as this is the easiest to use
- I can now set the roles for the server

Screenshot:

📥 Server Manager		— Ö	\times
Ser Ser	ver Manager • Das	shboard 🔹 🕄 🖡 Manage Tools View	Help
Dashboard Local Server	WELCOME TO SEE		
File and Storage Ser	Select destination	D Server Destination server Dco1	
	Before You Begin Installation Type Server Selection Server Roles Features Confirmation Results	Select a server or a virtual hard disk on which to install roles and features. Select a server from the server pool Select a virtual hard disk Server Pool Filter: IP Address Operating System	
		DC01 192.168.0.1 Microsoft Windows Server 2016 Standard Evaluation 1 Computer(s) found 1 This page shows servers that are running Windows Server 2012 or a newer release of Windows Server, and that have been added by using the Add Servers command in Server Manager. Offline servers and newly-added servers from which data collection is still incomplete are not shown. < Previous	
日 スロ (é 🗎 占	02/01/2021 22:42 空 見 4。 22:47 の3/01/2021	2

• I choose this server as it is the only one in the list

Screenshot:

📥 Server Manager					– 0 ×
Se Se	erver Manager 🕨 Dasl	hboard • (छ । 🏲	Manage Tools	View Help
Dashboard Local Server All Servers File and Storage S	Add Roles and Features Wizard	S		DESTINATION SER	X VER CO1
	Before You Begin Installation Type Server Selection Server Roles Features AD DS DHCP Server DNS Server Confirmation Results	Select one or more roles to install on the selected server. Roles Active Directory Certificate Services Active Directory Domain Services Active Directory Federation Services Active Directory Rights Management Services Active Directory Rights Management Services Active Directory Rights Management Services Device Health Attestation PHCP Server Source Fax Server Fax Server Fat Server File and Storage Services (1 of 12 installed) Host Guardian Service Hyper-V MultiPoint Services Network Policy and Access Services Print and Document Services Remote Access Remote Desktop Services Volume Activation Services Volume Activation Services Web Server (IIS) Windows Deployment Services Volume V V	Description Domain Na provides na networks. D manage wh same server Domain Ser Active Direc role, you ca DNS Server Domain Ser	me System (DNS) Sen me resolution for TCP DNS Server is easier to ten it is installed on th r as Active Directory vices. If you select the tory Domain Services in install and configure and Active Directory vices to work togethe	/er //IP e ide e e
		< Previous New	xt >	Install Cance	el 🗸
日 へ 日	ê 📄 占			🖮 🍢 🕻 🗴	22:49 03/01/2021

 I add the required features that I need to add, for example: Active Directory Domain Services, DHCP Server, DNS Server



- These screenshots show the server roles of Active Directory, DNS, and DHCP
- Once the server has added the new roles and rebooted I can set-up the DHCP

Setting up DHCP

📥 Server Manager

_

Server Ma	nager • DHCP		• 🗊 I	Manage Tools View Help
			Active	Directory Administrative Center
Dashboard	All servers 1 total		Active	Directory Domains and Trusts
			Active	Directory Module for Windows PowerShell
Local Server	Filter	▼ (ii) ▼ (ii) Q	Active	Directory Sites and Services
All Servers				Edit
i i i AD DS	Server Name IPv4 Address	Manageability Last	U Comp	onent Senvicer
TI DHCP	DC01 192.168.0.1	Online - Performance counters not started 03/	1 Comp	uter Management
🚔 DNS			Defra	ament and Ontimize Drives
File and Storage Services ▷			DHCP	
-			Disk C	Cleanup
			DNS	
			Event	Viewer
			Group	Policy Management
			iSCSI	Initiator
			Local	Security Policy
	EVENTS		Micro	soft Azure Services
	All events 3 total		ODBC	Data Sources (32-bit)
	Filter		ODBC	Data Sources (64-bit)
			Perfor	rmance Monitor
	Server Name ID Seve	rity Source Log	Print I	Management
			Resou	irce Monitor
	DC01 10020 Warn	ing Microsoft-Windows-DHCP-Server System	³ Servic	es
	DC01 1036 Error	Microsoft-Windows-DHCP-Server System	3 Syster	m Configuration
	DC01 1035 Error	Microsoft-Windows-DHCP-Server System	3 Syster	m Information
			Task S	cheduler
			Winde	ows Firewall with Advanced Security
			Windo	ows Memory Diagnostic
			Windo	ows PowerShell
💶 O 🖂 🦰				
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• From tools, I choose DHCP
📥 Server Manager	— () X
Ser Ser	rver Manager 🕨 Dashboard 🔹 🕫 🖌 Manage Tools View	Help
🔛 Dashboard	WELCOME TO SERVER MANAGER	^
Local Server		
All Servers	🚡 DHCP Post-Install configuration wizard — 🗆 🗙	
🖬 AD DS		
TI DHCP	Description	
🛱 DNS		
File and Storage Ser	The following steps will be performed to complete the configuration of the DHCP Server on the target computer: Summary Create the following security groups for delegation of DHCP Server Administration DHCP Administrators - DHCP Users Hi	de
	< Previous Next > Commit Cancel	
		121

• I click continue to go to the next step

Server Ma	anager	Manager + DHCP		• @	Manage	- Tools Vi	ew H	×
_	File Action View	v Help						^
Dashl	🗢 🄿 📰 🗟	? 📻 🚊					s 🔻	
	🕎 DHCP	Contents of DHCP	Status		Actions		\odot	
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						03/0	172021	U

• I have now added DHCP

DHe File	CP Action View Help		— C	з ×	s 🔻
Local 🕎 DI All Se 🗸 🗉	New Scope		Actions		۲
AD D DHCF DNS	New Multicast Scope Configure Failover Replicate Failover Scopes	addresses assigned to computers requesting a dynamic IP address. nfigure a scope before dynamic IP addresses can be assigned.	IPv4 More Actions	•	ated)
File a 💙	Define User Classes Define Vendor Classes	the Action menu, click New Scope.			
	Reconcile All Scopes				
	Set Predefined Options				
	Refresh				
	Help				
٤	>				s •
Show sta	atistics for this server				

• I now add a new scope to give out the addresses

Selecting new scope



• I run the New Scope Wizard

Server Manager	Manager • DHCP - 🕄 🇗	Manage To	- nols Vie X	∅ ×
Image: Constraint of the second s	Help Image: Comparison of the second secon	tions v4 More Actions	×	s s s s s s s s s s s s s s
 , ,	< Back Next > Cancel	بالم	থ <mark>≋</mark> 03/01	58 /2021

• I leave the default settings as these are OK to use

Server Manager	lanager • DHCP • ② 🍢 Manage Iools — D	_ □ View ×	× Help
Local Local Local Local DHCP dc01 AD D Columnation DHCP dc01 Server Policie DHCF Server Policie DHCP Server Policie	I I I I I I I I I I I I I I I I I	▲ ► ated)	
File a > 🖟 IPv6	To add connected to the same physical network. For mobile networks that consist mainly of portable computers or dial-up clients, shorter lease durations can be useful. For m Likewise, for a stable network that consists mainly of desktop computers at fixed locations, longer lease durations are more appropriate. Set the duration for scope leases when distributed by this server. Limited to: Days: Hours: Minutes: Bar Original Orig	s •	
	< Back Next > Cancel	23:00	~

• I add a lease time of 8 days, which is the normal length of time set

Server Manager	Manager • DHCP • 🕑 🏹	<u>M</u> anage <u>T</u> ools — 🗌	; <u>V</u> iew ×	□ ×	^
III Dash I Local I Local I All Se I AD D I DHCF I DHCF I DHCF I DHCF I DHCF I DHCF I DHCF I Decent I D	Rev Scope Wizard IP Address Range You define the scope address range by identifying a set of consecutive IP addresses.	tions v4 More Actions		S V	
ne DNS → 🧭 Filters > File a:	Configuration settings for DHCP Server To add For m Configuration settings for DHCP Server Enter the range of addresses that the scope distributes. Start IP address: 192.168.0.100 End IP address: 192.168.0.209 Configuration settings that propagate to DHCP Client Length: 24 Subnet mask: 255.255.255.0			<u>s</u>	
< , , , , , , , , , , , , , , , , , , ,	Back Next > Cancel	¢∍ ¶ي (22:5 2 2:5 3 /01/2	9 2021 2	~

- I add a DHCP range for the addresses to give out.
- I add a range of addresses to use

🔁 Server Manager		– o ×
Server Manager • DHCP • 🕝 🖡	▲ <u>M</u> anage <u>T</u> ools	<u>V</u> iew <u>H</u> elp ×
File Action View Help Image: Dash Image: Dash Image: Dash Image: Dash Image: Da	ctions	<u> </u>
Image: All Se Image: Configure DHCP Options Image: AD D Image: Configure DHCP Options Image: Configure DHCP Image: Configure DHCP Options Image: Config	Vv4 More Actions	► ated)
Image: Billers > Image: Billers When clients obtain an address, they are given DHCP options such as the IP addresses of routers (default gateways), DNS servers, and WINS settings for that scope. File a > Image: Billers For m The settings you select here are for this scope and override settings configured in the configured in the settings for the settings configured in the settings for the settings of the settings for the		
Sever Options folder for this server. Do you want to configure the DHCP options for this scope now?		
		s 💌
		•
< Back Next > Cancel		
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I add options

Server Manager	anager • DHCP • ② 🗗	<mark>∧ M</mark> anage Io	ools <u>V</u> iev	Ø W <u>H</u> elp S▼	P ^
Local ↓ Local ↓ Local ↓ DHCP ↓ dc01 ↓ DHCP ↓ BPv4 ↓ BPv4 ↓ DHCP ↓ BPv4 ↓ DHCP ↓ BPv4 ↓ DHCP ↓ BPv6 ↓ Pv6	New Scope Wizard New Scope Wizard Router (Default Gateway) You can specify the routers, or default gateways, to be distributed by this scope. A sco You n To add an IP address for a router used by clients, enter the address below. IP address: For m Add	ortions Pv4 More Actions	•	⊙ ated)	
	192.168.0.254 Bernove Up Down			e e e e e e e e e e e e e e e e e e e	
< >>	< Back Next > Cancel				Ŷ

• I set the Gateway address. This is the router for connecting to the internet

Server Manager	r Manager • DHCP • ② I	Manage <u>T</u> ool:	– ⊡ × s <u>V</u> iew <u>H</u> elp
Image: Second	v Help	_ □	×
Image: A D D Image: A D D	Activate Scope Clients can obtain address leases only if a scope is activated. A score You m Do you want to activate this scope now? To ad • Yes, I want to activate this scope now? For m C Ng, I will activate this scope later	Pv4 More Actions	ated)
< 2	< <u>Back</u> <u>Next</u> > Cancel		S •
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Once the scope is made, I need to activate it so that it will give out address



I click finish to complete installation

Server Manager	Ianager • DHCP • ② 🍢 Manage Iools View - □ ×) × Help
Image: Dash Image: Constraint of the second se	Image: Second system Second system Image: Second system Domain Name and DNS Servers The Domain Name System (DNS) maps and translates domain names used by clients on your network. Image: Second system You can specify the parent domain you want the client computers on your network to use for More Actions	d)
File a > 🔊 IPvo	To add DNS name resolution. For m Parent domain: To configure scope clients to use DNS servers on your network, enter the IP addresses for those servers. Server name: IP address: Rgsolve 192.168.0.1 Rgsolve Dgwn	•

• I have set-up DHCP and activated it

Setting up Active Directory

Screenshot:



• I clicked on the yellow warning in server manager and selected promote this server to a domain controller

🚡 Server Manager	inager • DHCP	• ③ 🍢	— 🗇 X Manage Tools View Help
 Dashboard Local Server All Servers AD DS DHCP DNS File and Storage Services 	SERVERS All servers 1 total Filter Server Name IPv4 Address Manag DC01 192.168.0.1 Online	 Post-deployment Configura TASKS > X Configuration required for Active Directory Domain Services at DC01 Promote this server to a domain controller Feature installation Configuration required. Installation succeeded on DC01. Add Roles and Features Post-deployment Configuration Configuration completed for DHCP Server at DC01 	
	All events 3 total		
	Futer Server Name ID Severity Sou DC01 10020 Warning Micr DC01 1036 Error Micr DC01 1035 Error Micr	rce Log Date and Time rosoft-Windows-DHCP-Server System 03/01/2021 22:52:08 rosoft-Windows-DHCP-Server System 03/01/2021 22:52:04 rosoft-Windows-DHCP-Server System 03/01/2021 22:52:04	
# P 🗆 렪 蒚			©00:41 □ 1 4 00:411 00:411 00:41

Here we can see the progress of the new features we are installing on the server

Screenshots:

Set domain options

📥 Server Mana	ager				– 0 ×
$ \mathbf{E} $	 Server Manage 	r • DHCP	• ©	Manage	e Tools View Help
	📥 Active Directory Domain Service	s Configuration Wizard	-	- 🗆 ×	^
🔛 Dashbo					TASKS 💌
Local S	Deployment Conf	iguration		TARGET SERVER	
All Serv		9		Dear	۲
AD DS I DHCP	Deployment Configuration Domain Controller Options	Select the deployment operation			tion
🔒 DNS	Additional Options	Add a domain controller to an existing domain			000-AA739 (Activated)
📑 File and		 Add a new forest 			
		Specify the domain information for this operation			
	Prerequisites Check	Demoins *		Colort	
		Domain:		Select	
		Supply the credentials to perform this operation			
		<no credentials="" provided=""></no>		Change	
					IASKS 👻
					\odot
		More about deployment configurations			
		< Previous N	lext > Install	Cancel	
م 🖿	o é 🖡 占			ų	■ 🖫 🔩 00:42 • 🖓 04/01/2021

• I add a Deployment Configuration to this PC

Deployment Confi	guration	TARGET SERVER DC01	
DS Deployment Configuration P Domain Controller Options Additional Options Paths Review Options Prerequisites Check Installation Results	Select the deployment operation Add a <u>d</u>omain controller to an existing domain Add a new domain to an <u>existing</u> forest Add a new forest Specify the domain information for this operation <u>Root domain name:</u> MyDomain.local		tion 000-AA739 (Activated) TASKS
	More about deployment configurations		

• I keep the default settings. This will make a new forest that you need when this is the first server

📥 Server Mana	ager				— D	\times
	 Server Manage 	r • DHCP	• 3) 🍢 Manage	<u>T</u> ools <u>V</u> iew <u>H</u>	elp
	📥 Active Directory Domain Service	es Configuration Wizard		– 🗆 ×		^
 Dashbc Local S All Serv AD DS DHCP DNS File and 	Domain Controlle Deployment Configuration Domain Controller Options DNS Options Additional Options Paths Review Options Prerequisites Check Installation	r Options Select functional level of the new forest Forest functional level: Domain functional level: Specify domain controller capabilities I Domain Name System (DNS) server Global Catalog (GC) Read only domain controller (RODC	and root domain Windows Server 2016 Windows Server 2016	TARGET SERVER DC01	TASKS TASKS Toology tion 000-AA739 (Activated)	
	Results	Type the Directory Services Restore Mo	de (DSRM) password			
		Password:	•••••		TASKS 💌	
		Confirm password: More about domain controller options	•••••		· · · · · · · · · · · · · · · · · · ·	
			evious Next > Instal	Cancel		
				- Concer	00-44	~
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• I create a new domain

Server Mana	^{ager} Server Manage	r • DHCP • G) F . Manage	Tools	- 🗇	×
	Active Directory Domain Service	s Configuration Wizard	×		<u>T</u>	^
 Dashbc Local S All Serv 	Additional Option	S	TARGET SERVER DC01			
AD DS	Deployment Configuration Domain Controller Options DNS Options	Verify the NetBIOS name assigned to the domain and change it if necessary The NetBIOS domain name: MYDOMAIN		tion 000-AA739) (Activated)	
File and	Additional Options Paths Review Options					
	Prerequisites Check Installation					
	Results				TASKS	•
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		More about additional options				
		< <u>P</u> revious <u>N</u> ext > <u>I</u> nsta	ll Cancel			
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• I set the options for compatibility with other servers

🚡 Server Manager				_	đ	×
Server Manager 🕨	DHCP	• ②	Manage	<u>T</u> ools	<u>V</u> iew <u>I</u>	<u>H</u> elp
📥 Active Directory Domain Services Cor	onfiguration Wizard		- 🗆 X			^
 Dashbc Local S All Serv AD DS Deployment Configuration Domain Controller Options DNS DNS Options Additional Options Review Options Prerequisites Check Installation Results 	pecify the location of the AD DS databa Database folder: og files folder: YSVOL folder:	ase, log files, and SYSVOL C:\Windows\NTDS C:\Windows\NTDS C:\Windows\SYSVOL	TARGET SERVER DC01	Lion 000-AA739 (A	ASKS	
м	Nore about Active Directory paths				ASKS	
	< Pr	evious Next > Install	Cancel) 변지 (J.S.	00:45	

• I add DHCP to my domain

Server Manag	Server Manage	· · DHCP · (© 🏲	<u>M</u> anage	Tools	— □ <u>V</u> iew	× <u>H</u> elp
Dashbo Local S All Serv AD DS DC DNS File and File and	Active Directory Domain Service Review Options Deployment Configuration Domain Controller Options DNS Options Additional Options Paths Review Options Prerequisites Check Installation Results	Review your selections: Configure this server as the first Active Directory domain controller in a new The new domain name is "MyDomain.local". This is also the name of the new The NetBIOS name of the domain: MYDOMAIN Forest Functional Level: Windows Server 2016 Domain Functional Level: Windows Server 2016 Additional Options: Global catalog: Yes DNS Server: Yes Create DNS Delegation: No These settings can be exported to a Windows PowerShell script to automatiadditional installations More about installation options Previous Next > In	TARGI w forest. ew forest.	T SERVER DC01	ion 000-AA73:	TASKS Image: state st	
م	o é 🗖 占			<u> </u>	e ہے د	00:45 04/01/2021	

• I set the location of the log files

Installation	TARGET SERVER DC01	TASKS
Deployment Configuration Domain Controller Options DNS Options Additional Options Paths Review Options Prerequisites Check Installation Results	ion 000-AA73 "that prevents weaker ons. cle 942564 (http://	(Activate

Here we see a warning about the compatibility level and the need to change it if you have older servers in your network.

Dashbc Local S Local S All Serv AD DS DHCP DNS File and	 Active Directory Domain Service Prerequisites Check All prerequisite checks pass Deployment Configuration Domain Controller Options DNS Options Additional Options Paths Review Options Prerequisites Check Installation Results 	s Configuration Wizard ck ed successfully. Click 'Install' to begin installation. Prerequisites need to be validated before Active Directory Domain Servic computer Rerun prerequisites check New results New results New cryptography algorithms compatible with Windows NT 4.0° cryptography algorithms when establishing security channel session For more information about this setting, see Knowledge Base artic go.microsoft.com/fwlink/?Linkld=104751). A delegation for this DNS server cannot be created because the au zone cannot be found or it does not run Windows DNS server. If y with an existing DNS infrastructure, you should manually create DNS server in the parent zone to ensure reliable name resolution f domain "MyDomain.local". Otherwise, no action is required. More about prerequisites	TARGET SERVE DCC Show more × ces is installed on this curity setting named that prevents weaker ons. :le 942564 (http:// uthoritative parent rou are integrating delegation to this from outside the promotion operation.	× er 01	ion 000-AA739	TASKS	
_ م #		< Previous Next >	Install Cancel	ţ	• 🖏 d <mark>x</mark>	00:46 04/01/202	1

• I follow the Active Directory domain service (ADDS) configuration wizard calling my network MyDomain.Local

Screenshot:



• I now login to the domain as an administrator

Screenshots:

Active Directory is now installed

🚘 Server Manager			– 0 ×
Server Ma	anager 🕨 Local Ser	ver	🛛 🎜 🚩 Manage Tools View Help
Ŭ			Active Directory Administrative Center
-	PROPERTIES		Active Directory Domains and Trusts
Dashboard	For DC01		Active Directory Module for Windows PowerShell
Local Server	Computer name	DC01	Active Directory Sites and Services
All Servers	Domain	MyDomain.local	Active Directory Users and Computers
AD DS			ADSI Edit
Î∎ DHCP			Component Services
	MG-deve Convell	Demain Or	Computer Management
	Remote management	Domain: On Enabled	Defragment and Optimize Drives
File and Storage Services	Remote Desktop	Disabled	DHCP
	NIC Teaming	Disabled	Disk Cleanup
	Ethernet	192.168.0.1, IPv6 enabled	DNS
			Event Viewer
			Group Policy Management
	Onersting partern version	Microsoft Windows Server 2016 Standard Evalu	iSCSI Initiator
	Hardware information	Microsoft Corporation Virtual Machine	Local Security Policy
	That dware information	merosore corporation virtual machine	Microsoft Azure Services
			ODBC Data Sources (32-bit)
	<		ODBC Data Sources (64-bit)
			Performance Monitor
	EVENTS		Print Management
	All events 68 total		Resource Monitor
			Services
	Filter		System Configuration
			System Information
	Server Name ID Severity	Source	Task Scheduler
	DC01 1014 Warning	Microsoft-Windows-DNS Client Events	Windows Firewall with Advanced Security
	DC01 1014 Warning	Microsoft-Windows-DNS Client Events	Windows Memory Diagnostic
	DC01 1129 Error	Microsoft-Windows-GroupPolicy	Windows PowerShell
日 2 回 2 日			© 1:11 ⊕ 1, √∞ 01:11

• I can now add a new user

Server Manager	Server Manager • Local Server 🧼 🥏 I 🖡	Manage	— 🗇 🗙 Tools View Help
Dashboa Local Ser All Serve All Serve DNS DNS File and S	New Object - User Image: Create in: MyDomain.local/Users Image: Create in: MyDomain.local/Users on First name: Dan Initials: Image:		TASKS Never Download u Never Real-Time Pr Settings nfiguration On (UTC+00:00) 00378-00000 Intel(R) Core 1.41 GB 39.45 GB TASKS TASKS
م ع	Server Name ID Severity Source DC01 1014 Warning Microsoft-Windows-DNS Client Events DC01 1014 Warning Microsoft-Windows-DNS Client Events DC01 1014 Warning Microsoft-Windows-DNS Client Events DC01 1129 Error Microsoft-Windows-GroupPolicy	Log System System System	Date and Time 04/01/2021 00:59:35 04/01/2021 00:54:40 04/01/2021 00:54:21 ● 1:13 ● 1:13 ● 1:13 ● 1:13 ● 1:13 ● 1:13

• I can now add new user details

📥 Server Manage	r		– 0 ×
€∍∙	Server Manager + Local Server - 😨 I	<u>M</u> anage	<u>T</u> ools <u>V</u> iew <u>H</u> elp
	Active Directory Llever and Computers		^
🔛 Dashboa	New Object - User X		TASKS 💌
Local Ser All Server AD DS	Create in: MyDomain Jocal/Users Create in: MyDomain Jocal/Users Nhen you click Finish, the following object will be created: When you click Finish, the following object will be created:	^	- Download u Never
🛱 DNS	Full name: Dan Troke s of this group		Real-Time Pr
File and S	User logon name: dtroke@MyDomain.local User logon name: dtroke@MyDomain.local s in this group c s who have ad s who have vie ninistrators Gro nts who are per		Settings nfiguration On (UTC+00:00) 00378-0000
	ed administrato		Intel(R) Core
	stations and ser		1.34 GB
	< Back Finish Cancel ain guests ain users		39.45 GB
	Enterprise A Security Group Designated administrato		
	Enterprise R Security Group Members of this group		
	Regroup Polic Security Group Members in this group c		TASKS 💌
	🖁 Guest User Built-in account for gue		
L	Key Admins Security Group Members of this group	¥	
	Server Name ID Severity Source	Log	Date and Time
	DC01 1014 Warning Microsoft-Windows-DNS Client Events	System	04/01/2021 00:59:35
	DC01 1014 Warning Microsoft-Windows-DNS Client Events	System	04/01/2021 00:54:40
	DC01 1129 Error Microsoft-Windows-GroupPolicy	System	04/01/2021 00:54:21
م ا		Ÿ-	01:14 ▣ 😱 ଏ <mark>∞</mark> 04/01/2021 🔁

• I click finish to add/create the object

Server Manager	– 0 X
Server Manager • Local Server • 🕄 🖡 Manage	<u>T</u> ools <u>V</u> iew <u>H</u> elp
 Active Directory Users and Computers File Action View Help Local Set Active Directory Users and Computers All Servet Active Directory Users and Computers Severt Queries MyDomain.local Builtin Computers ForeignSecurityPrincipal Denied ROD Security Group Members of this group c Denied ROD Security Group Members of this group c Denied ROD Security Group Members who have ad DHCP Admini. Security Group DHCP Admini. Security Group DHCP Admini. Security Group DhS Clients who are per Domain Com Domain Com Security Group All workstations and ser Domain Com Security Group All domain users Enterprise R Security Group Members of this group Bomain Com Security Group Members of this group Members who have ad DhCP Users Security Group DhS Clients who are per Domain Com Security Group All domain controllers in Domain Com Security Group All domain controllers in Domain Genue Security Group Members of this group Security Group Security Group Members of this group Security Group Members of this group Security Group Members of this group	TASKS Never Download u Never Real-Time Pr Settings nfiguration On (UTC+00:00) 00378-00000 Intel(R) Core 1.34 GB 39.45 GB > TASKS TASKS Date and Time
DC01 1014 Warning Microsoft-Windows-DNS Client Events System DC01 1014 Warning Microsoft-Windows-DNS Client Events System	04/01/2021 00:59:35
DC01 1129 Error Microsoft-Windows-GroupPolicy System	04/01/2021 00:54:21
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• The new user is now added to the Active Directory of Users and Computers

Server Manager Server Manager ► Local Server • ② Manager ► Local Server	ge <u>T</u> ools	— 🗇 X <u>V</u> iew <u>H</u> elp
Active Directory Users and Computers Active Directory Users and Computers Active Directory Users and Computers All Server All Server All Server From this location: This group c Advanced Advanced Directory Group Directory Group Advanced Directory Group Advanced Directory Group Directory Group Directory Group Advanced Directory Group Directory Group Advanced Directory Group Advanced Directory Group Directory Group Advanced Directory Group Advanced Directory Group Directory Group Advanced Directory Group Advanced Directory Group Directory Group Directory Group Advanced Directory Group D	C nfiguration	TASKS Never Download u Never Real-Time Pi Settings On On (UTC+00:00) 00378-00000 Intel(R) Core 1.34 GB 39.45 GB TASKS TASKS TASKS TASKS C 100:59:35
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- I can add new user to the group that best suits their job
- The screenshots above show me accessing Active Directory and creating a user account called **dtroke** and making it a domain admin

Installing security software

Screenshots:

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	You should now have th need is to	ne downloaded file. Now open and install it!	, all you
	Download	Run program	Install
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• I browse for the website and choose to use Avira. Here I download the programme

🗲 🛞 🖪 https://www.avira.com/en/start-download/product/2262/-112e2 🔎 🖛 🖨 🖒 🗖 Download Avira Free Securi 🗙	- □ × 슈☆戀ಅ
Avira	– × ^
Welcome to Avira	
By proceeding, you are accepting the <u>End User License Agreement (EULA)</u> , and the <u>Terms and Conditions</u> . Avira is fulfilling it duties to provide information in accordance with Articles 13 and 14 of the General Data Protection Regulation (GDPR) with the contents of the Privacy Policy and access thereto. You can find our Privacy Policy here: <u>https://www.avira.com/en/general-priv</u>	s he acy
By proceeding you are also installing Opera, Avira's recommended fast and secure browser and you confirm that you have rea and accepted Opera's <u>End User License Agreement</u> . You can find Opera's Privacy Policy here: <u>https://www.opera.com/privacy</u>	id ¢
Agree and Install	
	01:56 04/01/2021

• After the download is complete, I agree to the terms and install it

🚔 Server Manager	_	D	\times
🗢 🧟 Avira Free Security			2
			^
Great! You are all set			
Let's run your first smart scan			
orivacy and performance issues			
Smart scan			
Remind me later			
			~
· · · · · · · · · · · · · · · · · · ·	02:0 ⊲ <mark>⊠</mark> 04/01/	05 /2021	2

• Once installed, I can run a Smart scan

Regide Bin				
update View update history			_ 0 >	×
(€) ♥ ↑ ₩ « All Control Panel Items ➤ Windows Update ➤ View update history	v ¢	Search Control Pa	nel 🔎	2
Review your update history Check the Status column to ensure all important updates were successful. To remove an update, see <u>Insta</u> Troubleshoot problems with installing updates	lled Updates.			
Name	Status	Importance	Date installed	~
Security Update for Windows Server 2012 R2 (KB3003743)	Succeeded	Important	11/13/2014	
Security Update for Windows Server 2012 R2 (KB2992611)	Succeeded	Important	11/13/2014	-
Security Update for Windows Server 2012 R2 (KB3005607)	Succeeded	Important	11/13/2014	
Cumulative Security Update for Internet Explorer 11 for Windows Server 2012 R2 (KB3003057)	Succeeded	Important	11/13/2014	
Security Undete for Windows Server 2012 R2 (KB3008188)	Succeeded	Important	11/13/2014	
Undate for Windows Server 2012 R2 (KB3008627)	Succeeded	Recommended	11/13/2014	
Security Update for Windows Server 2012 R2 (KB3005607)	Failed	Important	11/12/2014	
Cumulative Security Update for Internet Explorer 11 for Windows Server 2012 R2 (KB3003057)	Failed	Important	11/12/2014	
Update for Windows Server 2012 R2 (KB3008188)	Failed	Important	11/12/2014	
Security Update for Windows Server 2012 R2 (KB2920189)	Failed	Important	11/12/2014	
Security Update for Windows Server 2012 R2 (KB3002885)	Succeeded	Important	11/12/2014	
Security Update for Windows Server 2012 R2 (KB3006226)	Succeeded	Important	11/12/2014	
Security Update for Microsoft .NET Framework 4.5.1 and 4.5.2 on Windows 8.1 and Windows Server 2012 R2	Succeeded	Important	11/12/2014	
Security Update for Windows Server 2012 R2 (KB3003743)	Failed	Important	11/12/2014	
Security Update for Windows Server 2012 R2 (KB2992611)	Failed	Important	11/12/2014	~

- I now check for Windows updates
- Antivirus is installed and Windows is up to date

Task 2(b)

Installation of client PC

Screenshots:

Windows Setup Windows Setup Windows *	Windows Setup Windows Setup Windows Setup Windows ' United Kingdom Time and currency format: English (United Kingdom) Time and currency format: English (United Kingdom) Keyboard or input method: United Kingdom Enter your language and other preferences and click "Next" to continue. Next			
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Language to install: English (United Kingdom) Time and currency format: English (United Kingdom) Keyboard or input method: United Kingdom Enter your language and other preferences and click "Next" to continue. © 2020 Microsoft Corporation. All rights reserved.	Language to install: English (United Kingdom) Time and currency format: English (United Kingdom) Keyboard or input method: United Kingdom Enter your language and other preferences and click "Next" to continue. © 2020 Microsoft Corporation: All rights reserved.		Windows	
Time and currency format: English (United Kingdom) Keyboard or input method: United Kingdom Enter your language and other preferences and click "Next" to continue. © 2020 Microsoft Corporation. All rights reserved.	Time and currency format: English (United Kingdom) Keyboard or input method: United Kingdom Enter your language and other preferences and click "Next" to continue. © 2020 Microsoft Corporation. All rights reserved.	Languag <u>e</u> to install:	English (United Kingdom)	•
Keyboard or input method: United Kingdom	Keyboard or input method: United Kingdom	Time and currency format:	English (United Kingdom)	•
Enter your language and other preferences and click "Next" to continue.	Enter your language and other preferences and click "Next" to continue. © 2020 Microsoft Corporation. All rights reserved.	Keyboard or input method:	United Kingdom	•
		Enter your language a © 2020 Microsoft Corporation. All rights reserve	nd other preferences and click "Next" to cor d.	ntinue. <u>N</u> ext

• I select the correct language for the UK

🖆 Windows Setup		
	Windows	
	Install now	
<u>R</u> epair your computer		

I click install

	🖂 🚜 Windows Setup		
	Activate Windows If this is the first time you're insta you need to enter a valid Window email that you received after buy Windows came in. The product key looks like this: X	alling Windows on this PC (or you're installing a differ ws product key. Your product key should be in the co ying a digital copy of Windows, or on a label inside th XXXXX-XXXXXX-XXXXX-XXXXX	ent edition), nfirmation e box that
	If you're reinstalling Windows, se automatically activated later.	elect I don't have a product key. Your copy of Window	/s will be
	<u>P</u> rivacy statement	I don't have a product key	Next
llecting information	2 Installing Windows		

• I add the license number as proof of license

	🚱 💰 Windows Setup			×
	Select the operating system you want to insta	all		
	Operating system	Architecture	Date modified	
	Windows 10 Home	х64	19/11/2020	
	Windows 10 Home N	x64	19/11/2020	
	Windows 10 Home Single Language	х64	19/11/2020	
	Windows 10 Education	х64	19/11/2020	
	Windows 10 Education N	x64	19/11/2020	
	Windows 10 Pro	хб4	19/11/2020	
	Windows 10 Pro N	x64	19/11/2020	
	Windows 10 Pro		<u>N</u> ext	
Collecting information	2 Installing Windows			

• select the correct version of Windows necessary. I am going to install Pro as this is a corporate machine
	G 🚳 Windows Setup	
	Which type of installation do you want?	
	<u>Upgrade</u>: Install Windows and keep files, settings and applications The files, settings and applications are moved to Windows with this option. This option is only available when a supported version of Windows is already running on the computer.	
	<u>Custom: Install Windows only (advanced)</u> The files, settings and applications aren't moved to Windows with this option. If you want to make changes to partitions and drives, start the computer using the installation disc. We recommend backing up your files before you continue.	
Collecting information	2 Installing Windows	

• I use a custom install as this will keep the old data if there is any and let me choose more options

	indexe Catura						
	indows Setup						
			-				
Wh	ere do you want to	Install Windows	62				
	Name		Total size	Free space	Туре		
	Drive 0 Unallocated	Space	25.0 GB	25.0 GB			
*∌ <u>B</u>	efresh 🏹	Delete	<u>F</u> ormat	<mark>₩</mark> N <u>e</u> w			
• • • • • • • • • • • • • • • • • • •	oad driver 🛛 🚆	E <u>x</u> tend					
					<u>N</u> ext	t	
llecting information - Installin	a Windows						

• I select the disk I wish to use. As there is only one disk, this is selected by default. I choose it

	🔏 Windows Setup	
	Installing Windows	
	Status	
	Copying Windows files Getting files ready for installation (0%) Installing features Installing updates Getting finished	
1 Collecting information	2 Installing Windows	

• these screenshots show me installing Windows 10 onto the client computer

Screenshots:

	Basics	
ls th	nis the right keyboard layout? If you also use another keyboard layout, you can add that next.	
	United Kingdom	
	Canadian Multilingual Standard	
	English (India)	
	Irish	
	Scottish Gaelic	
	United States-Dvorak	
	United States-Dvorak for left hand	
		Yes
Ģ		

• I select the correct keyboard for use in the UK

÷	Account	
Acces	Let's add your account s your apps, files and services across your devices with your Microsoft account.	
	8	
	Email, phone or Skype	
	Create account	
Offline account Privacy & Cook	ies Terms of Use	Next
¢		

• I add a local account for Microsoft

← Account	
Who's going to use this PC? What name do you want to use?	
Admin X	
Or, even better, use an online account	Next
С	

• These screenshots show me performing the initial set-up for first use of Windows 10

Screenshot:

Recycle Bin		
Microsoft Edge		
		C
		Browse the web with Microsoft Edge The new browser recommended by Microsoft for your PC Get started Maybe later
₽ Type here to search	0 Ħ C	・ へ 智 記 4 <mark>* 03:06</mark> ワ

• I have now logged into Windows 10 for the first time

Checking device drivers

Screenshots:



I check all drivers are installed

Network configuration/domain joining

Screenshots:

Settings	₩ d 18236.03 - ∂ ×	-
G Home	About	
Find a setting ρ	Your PC is monitored and protected.	Related settings
System	Virus & Threat Protection	System info
Display	Firewall & Network Protection App & browser control	
48 Sound	Account protection Device exercise	Have a question? Finding out how many cores my
Notifications & actions	See details in Windows Security	processor has
J Focus assist		
🖒 Power & sleep	Device specifications	
🖙 Storage		
Tablet mode	Device name 3dpiniter Processor Intel® Core (TM) /7 CPU 960 @ 3.20GHz 339 GHz	
間 Multitasking	Installed RAM 12.0 GB (8.00 GB usable)	
67 Projecting to this PC	Device ID 595CD179-CE10-4E0C-AP08-6395C3886235 Product ID 00331-20300-44403-4A391	
X Shared experiences	System type 64-bit operating system, x64-based processor Pen and touch No pen or touch input is available for this display	
D Clipboard	Rename this PC	
>< Remote Desktop		
① About	Windows specifications	
	Edition Winclows 10 Pro Version 1005 Notaffer de 9,277/2019 OS baud 10343.4350 Change protect level or upgade groue edition of Windows Read the Microsoft Services Agreement that applies to our services	
# # 9 9 0	- Beack the a Vienee th Calibrate Vienee Toure	^ ¢0) ₩ ENG 1.56 PM

• I open settings



Security and Maintenance

へ (1)) 💭 ENG 200 PM

- here I am joining the Domain I created above
- I have joined the MyDomain.local, using the domain admin account dtroke when prompted
- after joining the domain, the computer has rebooted, and I can now log in with the dtroke account

Security and installation of antivirus software

Screenshots:



• I browse for antivirus software on the web

Screenshots:



• I select the free download



• I download the installer

di d		
	NG AntiVirus Free	8
	You're protected	
	* · · * +	
	You've now got the worldh largest thread-detection network on your side. Now that's comething to brea about commune • •	
4 8 9 5		∧ q0 172 1946 128 PM ↓

• Antivirus software is now installed



Antivirus software is now installed 'Thank you' message from AVG

a	H all 192.196.013 - 0 [°] ×	
Recyclic Bar		
SE		
0	NUC Antilifere Frag	
2000 Secure Mental		
	Browser threads Vinaes & other makers Advanced issues	
	No because the sets found	
	Feel free to browse awayt	
	NEXT	
4 8 9 9 1		∧ 48 1⊐ BNG 154PM □

I run a virus scan to check for viruses

Screenshots:

Settings	.ett af 192.163.613 _ € * ×	– ø ×
	Windows Update	
Find a setting	Restart required	Looking for info on the latest
Update & Security	2020-11 Cumulative Update Preview for .NET Framework 3.5 and 4.8 for Windows 10 Version 1909 for x64 (KB4586676)	updates? Learn more
C Windows Update	Status: Pending restart	
出 Delivery Optimization	Restart now Schedule the restart	Related links Check Storage
Windows Security	Adjust active hours to reduce disruptions	OS build info
→ Backup	We noticed you regularly use your device between 9:00 PM and 9:00 AM. Would you like Windows to automatically update your active hours to match your activity? We won't restant for updates during this time.	
Troubleshoot	Turn on	
A Recovery	(a). Pause unclates for 7 days	
Activation	Visit Advanced options to change the pause period	
A Find my device	Change active hours Currently 800 AM to 500 PM	
1 For developers	O View update history See update initialed on your device	
Windows Insider Program	C Advanced options	
	Addritional update controls and settings	
H 🛤 🌍 🤤 🜣		^ 40 1⊒ BNG ^{165 8M} □
Settings	192.192.013 - 0 ×	
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• I check for Windows updates

Configuring backups

Screenshots:



Client software

The following software was requested for installation:

- office software
- project management software
- instant messaging client software

As per the network installation specification, I will install Microsoft Office 2019 which included Microsoft Project and Microsoft Teams.

Screenshots:

Setting up email



• I go to the Microsoft website

Microsoft Office Home X	🖪 My account 🛛 🗙 🎦 Use the Office offline inst	aler-0 × +	- Ø ×
← → C ● portal office.com	/account		û 🔚 🛊 🎄 i
III My account			8 ? 🌉
 My account Personal info Subscriptions 		Subscriptions Verify what products and licenses you have.	
💊 Security & privacy	View apps & devices	View subscriptions	
Apos & devices Costs & add-ins	Security & privacy Protect your account and adjust important privacy settings to your preference.	App permissions Apps with access to your data: 16 Manage which apps have access to your data. You can revole permission whenever you want.	
	Manage security & privacy	Change app permissions	
# A 🖪 🧿			1414 05/01/2021

• I search for what I need and set up the email

Screenshots:



• I have set the customer email up on the client PC using the provided email configuration settings. The screenshots show I can now send and receive email

Mobile phone set-up

Connecting to wireless network

Photos:



I open settings and scan for the company network I want



• I select the network and add the password



• I join the mobile phone to the office network

Implementing screen lock, fingerprint and Find My Phone

Photos:



• I open settings and go to security



• I select password for the type of security



I create a password/pin number for security



• To improve security of the mobile device I have added a screen lock with a PIN number of 8330

Photos:

04:18 🖬 🖉 💿 🛯 🛱 🖏 😋	ñ,ıll €2,ıll 11% I				
← find my phone	Q &				
Google Find My Device Google LLC	Open				
4.4★ 100M+ 867K reviews Downloads	PEGI 3 O				
<text></text>	ck, erase w a message				
Ads Related to your search					
PHONE LOCATOR					

• I search the app store and open Find My Phone



I install it



• I log in



- I can see my mobile phone's location
- In case of loss or theft of the mobile phone, I have added the Find My Phone app to help

Task 2(c) (see Appendix 1 - Workbook - DSS-007-01 Assignment 1 pass)

Examiner commentary

The student has achieved the required standard for the following reasons:

This project overall meets the requirement of the brief, however, did not fully provide all of the details that could have been included.

- there was a basic business understanding taking into consideration legislation such as GDPR
- the student has taken basic health and safety and security considerations such as signs to prevent access to dangerous areas, but they could have done more to identify risks and mitigate them
- where practical tasks are part of the assignment, they have achieved the required outcomes of the task (installing Windows server, setting up Active Directory, installing Windows 10) but has not looked deeper. This is seen in the document by specifying a 100+ port server and not considering internet access as it is not explicitly requested
- where commentary is given it is generalised and does not use many technical terms. They demonstrate general understanding of concepts but have not shown detailed knowledge of the technical terminology used in the sector
- where technical understanding of concepts is required, some detail is seen (for instance when looking at IP addressing the student has identified appropriate IP addresses but not considered subnet mask)

Grade descriptors

The performance outcomes form the basis of the overall grading descriptors for pass and distinction grades.

These grading descriptors have been developed to reflect the appropriate level of demand for students of other level 3 qualifications, the threshold competence requirements of the role and have been validated with employers within the sector to describe achievement appropriate to the role.

Grade	Demonstration of attainment				
Distinction	The evidence is logical and provides an excellent response to the demands of the brief				
	Makes use of relevant knowledge and is well informed by the practices of the sector				
	Demonstrates an understanding of the different perspectives/approaches associated within the sector				
	Makes excellent use of facts/theories/approaches/concepts				
	Demonstrates comprehensive use of breadth and depth of knowledge and understanding				
	Consistently selects appropriate skills/techniques/methods				
	Identifies information from a range of suitable sources and makes use of appropriate information/appraises relevancy of information				
	Combines information to make accurate and appropriate decisions				
	Makes sound judgements/takes appropriate action/seeks clarification and guidance				
	Successfully tackles both routine and non-routine problems that reflect real life situations in the sector				
	Effectively demonstrates skills and knowledge of the relevant concepts and techniques reflected in the sector and is applied across a variety of contexts				
	Tackles unstructured problems that have not been seen before, using their knowledge to analyse and find suitable solutions to the problems				
	Analyses data/information in context and applies appropriate analysis in confirming or refuting conclusions and carrying out further work to evaluate conclusions				
	Justifies strategies for solving problems, giving clear explanations for their reasoning				
Pass	The evidence is logical and a good response to the demands of the brief				
	Makes use of relevant knowledge and is generally informed by the practices of the sector				
	Demonstrates an understanding of some perspectives or approaches associated within the sector				

Ν	Makes good use of facts/theories/approaches/concepts		
C	Demonstrates breadth and depth of knowledge and understanding		
C	Generally selects appropriate skills/techniques/methods		
l	dentifies information from appropriate sources		
Ν	Makes use of appropriate information/appraises relevancy of information		
C	Combines information to make accurate decisions		
Ν	Makes generally sound judgements/takes appropriate action/seeks clarification and guidance		
Д р	Able to successfully tackle routine problems and make some progress on solving non-routine problems in real life situations		
E	Demonstrates most skills and knowledge of the relevant concepts and techniques reflected in the sector and is applied across different contexts		
¢ k	Able to make some progress on unstructured problems that have not been seen before, using their knowledge to find solutions to problems		
Ν	Makes some justification for strategies for solving problems, giving explanations for their reasoning		

- * "Threshold competence" refers to a level of competence that:
- signifies that a student is well placed to develop full occupational competence, with further support and development, once in employment
- is as close to full occupational competence as can be reasonably expected of a student studying the TQ in a classroom-based setting (for example, in the classroom, workshops, simulated working and (where appropriate) supervised working environments)
- signifies that a student has achieved the level for a pass in relation to the relevant occupational specialism component

U grades

• if a student is not successful in reaching the minimum threshold for the core and/or occupational specialism component, they will be issued with a U grade

Document information

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Change History Record

Version	Description of change	Approval	Date of Issue
v1.0	Published final version.		May 2021
v1.1	NCFE rebrand		September 2021