

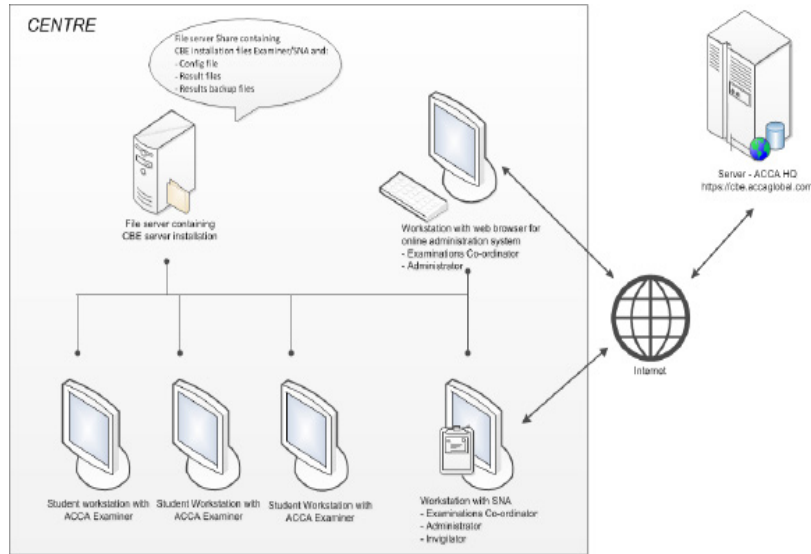


On-Demand CBE's Architectural Overview

ARCHITECTURAL OVERVIEW

ARCHITECTURAL OVERVIEW – EXAMPLE OF CBE SOFTWARE INSTALLATION

The following diagram shows the users, programs in use and the link between these for the operation of ACCA Computer Based Exams (CBEs).



APPLICATION COMPONENTS

The following terms describe the elements in the above diagram:

ACCA Examiner – Application that is installed on each student workstation that enables students to sit exams. This component needs to be able to communicate with the Secure Network Administrator (SNA) machine and File Server (Share).

Secure Network Administrator (SNA) – SNA enables you to both manage student access to exams and upload exam results. This component communicates between the student's Examiner PC, the File Server (Share) and the website cbe.accaglobal.com. Typically this is installed on a PC in the exam room for the exam invigilator to use during exams.

File Server (Share) – Server hosting results and configuration files. Files will be read from and written to this share during the exam therefore the user logged on to the SNA and Examiner PCs must have the required permissions to the share. (See installation instructions for full details).

The file server should be a native Windows file share. Performance and reliability cannot be guaranteed on NAS, SAN, Linux or other file sharing types.

Online Administration System – ACCA CBE website used for downloading installation files, managing exams, student administration including registering students and creating access tokens, reports and accessing the troubleshooting guide.

Local Network – While exams are in progress communication takes place between the various elements of the system. Any disruption to the local network or ability to connect to any of the components can result in errors or disruption to exams.

ACCESSING THE ONLINE ADMINISTRATION SYSTEM WEBSITE

The Online Administration System is accessed via a standard web browser (Microsoft Internet Explorer Version 11, Microsoft Edge, or Chrome Version 80).

This workstation requires fast, permanent Internet access through port 443 (SSL) to establish <https://> connections to cbe.accaglobal.com.

Once authenticated against the website you will be able to download the installation software. The download is zipped to save space and you will be required to unzip the files before installing. You must therefore have one of the following programs:

- Winzip 8.0 or above; or
- Windows 7, Windows 8.1 or Windows 10 compression facility
- Or similar compatible application.

SECURITY

Adequate firewall and virus protection must be in place for all components. Signature updates must be applied within one working day of vendor release.

PRINTERS

Students require printer access via the network to allow them to print provisional results notifications immediately after the exams. The results notifications will be printed to the default printer as set up on the PC with Examiner installed. Please note the default paper size of the document is A4.

SNA

You are permitted only one installation of the Secure Network Administrator program (SNA). You must therefore consider this carefully when choosing the location of the SNA PC.

BROADBAND UPLOAD SPEED

The Examiner application does not rely on the Internet in any way while students are answering exam questions.

The upload speed to the Internet must be at least 2KB/sec per student at the times when exams are started and exams are finished. To calculate the required speed (in KB/sec), use the following formula:

$$\text{Upload speed} = 2 \times \text{number of students}$$

Example: Five students are starting or finishing exams simultaneously. Upload speed must be at least 10KB/sec

Example: 20 students are starting or finishing exams simultaneously. Upload speed must be at least 40KB/sec.

It is recommended that you check your Internet upload speed using one of the many online services for this purpose before agreeing that your setup meets the minimum requirements.

As an example, a 1Mbps broadband connection typically provides 1Mbit/s download and 125Kbit/s upload which equals approximately seven students.

SYSTEM REQUIREMENTS

The following table summarises the supported operating systems for each component of the CBE system.

You should refer to the subsequent pages for detailed requirements relevant to your operating system(s).

	File Server (Share)	Secure Network Administrator (SNA)	Examiner
Windows 7 (Business, Enterprise and Ultimate editions)	✓ See page 4	✓ See page 9	✓ See page 15
Windows 8.1 (Pro and Enterprise editions)	✓ See page 5	✓ See page 11	✓ See page 16
Windows 10 (Pro and Enterprise, Enterprise LTSB and Education editions)	✓ See page 6	✓ See page 13	✓ See page 17
Server 2012 and 2012 R2	✓ See page 7	✗	✗
Server 2016, 2019	✓ See page 8	✗	✗

FILE SERVER (SHARE) ON WINDOWS 7 (BUSINESS, ENTERPRISE & ULTIMATE EDITIONS)

The following are the hardware and operating system requirements for running the File Server (Share) component on Microsoft Windows 7.

Item	Description
OS patch level	SP1 Please note: From January 2020, Microsoft no longer support Windows 7. ACCA would recommend upgrading to Windows 10 in order to maintain security on your machines.
CPU	2Ghz up to 10 clients
Memory	2Gb up to 10 clients Please note: Windows 7 only natively supports 20 concurrent connections. As some of these connections may be used for items such as printers and media sharing the number of available connections will vary depending on the local setup. Therefore it is recommended that Windows 7 is not used for more than 15 clients maximum.
Hard Disk	1Gb Free at the start of the exam session
Graphics	A Graphics Adapter that supports DirectX 9c or newer. A Graphics Adapter that has at least 128MB of Video RAM. A Graphics Adapter that supports 1024 x 768 resolution in 32 bit colour Please note: These requirements are supplied by Microsoft for the running of the operating system and not as part of the functionality of the application.
Network	A 100Mb LAN between SNA, clients and File Share. All devices should be on the same VLAN if used and be on the same subnet. A wired network is recommended. IPv6 is not supported at this time. Examiner and SNA must be able to communicate across the network using TCP-IP on port 19284. This port must be open and available in the network. All communication between workstations over this port is encrypted. Note: In the unlikely event that you cannot use port 19284 on your network, ACCA must be notified when you submit your licence application. Network latency of no greater than 16ms Please note: Access to the file share uses the UNC path and requires DNS to resolve as well as the correct user permission to access. (See Installation Guide for full details of user permissions).
Power	UPS is recommended Power settings should be set NOT TO sleep or Hibernate while in operation of exam delivery
General	The use of virtualised machines is prohibited
Internet	No specific requirements
Regional	No specific requirements

FILE SERVER (SHARE) ON WINDOWS 8.1 RUNNING IN DESKTOP MODE (PRO & ENTERPRISE EDITIONS)

The following are the hardware and operating system requirements for running the File Server (Share) component on Microsoft Windows 8.1.

Item	Description
OS patch level	8.1 running in desktop mode Microsoft regularly release software and security updates. You must ensure that the latest updates are installed. Please note: Windows 8.1 is a free upgrade available from Microsoft to upgrade from Windows 8.0.
CPU	2Ghz up to 10 clients 2 x 2Ghz 11–20 clients 4 x 2Ghz 20+ clients
Memory	2Gb up to 10 clients 4Gb 11–20 clients 8Gb 20+ clients Please note: 32 Bit operating systems can only address 4Gb of memory. It may also be necessary to enable the additional address space on 64 Bit operating systems. Please consult your hardware manufacturer for type and support for memory upgrades. Please note: Windows 8.1 does not have the restrictions of the previous version on the number of concurrent connections however there is still a limit on the number of open files that are supported. This could lead to intermittent connections if large volumes of connections are present. Should you regularly plan to hold exam session of 20 or more students you should consider moving the share to a server platform.
Hard Disk	1Gb free at the start of the exam session
Graphics	A Graphics Adapter that supports DirectX 9c or newer. A Graphics Adapter that has at least 128MB of Video RAM. A Graphics Adapter that supports 1024 x 768 resolution in 32 bit colour. Please note: These requirements are supplied by Microsoft for the running of the operating system and not as part of the functionality of the application.
Network	A 100Mb LAN between SNA, clients and File Share. All devices should be on the same VLAN if used and be on the same subnet. A wired network is recommended. IPv6 is not supported at this time. Examiner and SNA must be able to communicate across the network using TCP-IP on port 19284. This port must be open and available in the network. All communication between workstations over this port is encrypted. Note: In the unlikely event that you cannot use port 19284 on your network, ACCA must be notified when you submit your licence application. Network latency of no greater than 16ms. Please note: Access to the file share uses the UNC path and requires DNS to resolve as well as the correct user permission to access. (See Installation Guide for full details of user permissions).
Power	UPS is recommended Power settings should be set NOT TO sleep or Hibernate while in operation of exam delivery
General	The use of virtualised machines is prohibited
Internet	No specific requirements
Regional	No specific requirements

FILE SERVER (SHARE) ON WINDOWS 10 (PRO, ENTERPRISE, ENTERPRISE LTSB & EDUCATION EDITIONS)

The following are the hardware and operating system requirements for running the File Server (Share) component on Microsoft Windows 10.

Item	Description
OS patch level	Win 10 Microsoft regularly release software and security updates. You must ensure that the latest updates are installed.
CPU	2Ghz up to 10 clients 2 x 2Ghz 11–20 clients 4 x 2Ghz 20+ clients
Memory	2Gb up to 10 clients 4Gb 11–20 clients 8Gb 20+ clients Please note: 32 Bit operating systems can only address 4Gb of memory. It may also be necessary to enable the additional address space on 64 Bit operating systems. Please consult your hardware manufacturer for type and support for memory upgrades. Please note: Windows 10 does not have the restrictions of the previous versions on the number of concurrent connections however there is still a limit on the number of open files that are supported. This could lead to intermittent connections if large volumes of connections are present. Should you regularly plan to hold exam session of 20 or more students you should consider moving the share to a server platform.
Hard Disk	1Gb free at the start of the exam session
Graphics	A Graphics Adapter that supports DirectX 9c or newer. A Graphics Adapter that has at least 128MB of Video RAM. A Graphics Adapter that supports 1024 x 768 resolution in 32 bit colour. Please note: These requirements are supplied by Microsoft for the running of the operating system and not as part of the functionality of the application.
Network	A 100Mb LAN between SNA, clients and File Share. All devices should be on the same VLAN if used and be on the same subnet. A wired network is recommended. IPv6 is not supported at this time. Examiner and SNA must be able to communicate across the network using TCP-IP on port 19284. This port must be open and available in the network. All communication between workstations over this port is encrypted. Note: In the unlikely event that you cannot use port 19284 on your network, ACCA must be notified when you submit your licence application. Network latency of no greater than 16ms Please note: Access to the file share uses the UNC path and requires DNS to resolve as well as the correct user permission to access. (See Installation Guide for full details of user permissions).
Power	UPS is recommended Power settings should be set NOT TO sleep or Hibernate while in operation of exam delivery
General	The use of virtualised machines is prohibited
Internet	No specific requirements
Regional	No specific requirements

FILE SERVER (SHARE) ON WINDOWS SERVER 2012, 2012 R2

The following are the hardware and operating system requirements for running the File Server (Share) component on Microsoft server environments.

Item	Description
OS patch level	Win 2012 Win 2012 R2 Microsoft regularly release software and security updates. You must ensure that the latest updates are installed.
CPU	2Ghz up to 10 clients 2 x 2Ghz 11–30 clients 4 x 2Ghz 30+ clients
Memory	2Gb up to 10 clients 4Gb 11–30 clients 8Gb 30+ clients
Hard Disk	1Gb free at the start of the exam session
Graphics	A Graphics Adapter that has at least 128MB of Video RAM. A Graphics Adapter that supports 1024 x 768 resolution in 32 bit colour Please note: These requirements are supplied by Microsoft for the running of the operating system and not as part of the functionality of the application.
Network	A 100Mb LAN between SNA, clients and File Share. All devices should be on the same VLAN if used and be on the same subnet. A wired network is recommended. IPv6 is not supported at this time. Examiner and SNA must be able to communicate across the network using TCP-IP on port 19284. This port must be open and available in the network. All communication between workstations over this port is encrypted. Note: In the unlikely event that you cannot use port 19284 on your network, ACCA must be notified when you submit your licence application. Network latency of no greater than 16ms Please note: Access to the file share uses the UNC path and requires DNS to resolve as well as the correct user permission to access. (See Installation Guide for full details of user permissions).
Power	UPS is recommended Power settings should be set NOT TO sleep or Hibernate while in operation of exam delivery (this is normally the default for server installations)
General	The use of virtualised machines is prohibited
Internet	No specific requirements
Regional	No specific requirements

FILE SERVER (SHARE) ON WINDOWS SERVER 2016, 2019

The following are the hardware and operating system requirements for running the File Server (Share) component on Microsoft server environments.

Item	Description
OS patch level	Win 2016, Win 2019 Microsoft regularly release software and security updates. You must ensure that the latest updates are installed.
CPU	1.4 GHz 64 Bit processor with following capabilities: <ul style="list-style-type: none">- Compatible with x64 instruction set- Supports NX and DEP- Supports CMPXCHG16b, LAHF/SAHF, and PrefetchW- Supports Second Level Address Translation (EPT or NPT)
Memory	2Gb up to 10 clients 4Gb 11–30 clients 8Gb 30+ clients
Hard Disk	1Gb free at the start of the exam session
Graphics	A Graphics Adapter that has at least 128MB of Video RAM. A Graphics Adapter that supports 1024 x 768 resolution in 32 Bit colour. Please note: These requirements are supplied by Microsoft for the running of the operating system and not as part of the functionality of the application.
Network	A 100Mb LAN between SNA, clients and File Share. All devices should be on the same VLAN if used and be on the same subnet. A wired network is recommended. IPv6 is not supported at this time. Examiner and SNA must be able to communicate across the network using TCP-IP on port 19284. This port must be open and available in the network. All communication between workstations over this port is encrypted. Note: In the unlikely event that you cannot use port 19284 on your network, ACCA must be notified when you submit your licence application. Network latency of no greater than 16ms Please note: Access to the file share uses the UNC path and requires DNS to resolve as well as the correct user permission to access. (See Installation Guide for full details of user permissions).
Power	UPS is recommended. Power settings should be set NOT TO sleep or Hibernate while in operation of exam delivery (this is normally the default for server installations).
General	The use of virtualised machines is prohibited.
Internet	No specific requirements
Regional	No specific requirements

SNA ON WINDOWS 7 (BUSINESS, ENTERPRISE & ULTIMATE EDITIONS)

The following are the hardware and operating system requirements for running the SNA component on Microsoft Windows 7.

Item	Description
OS patch level	SP1 Microsoft regularly release software and security update. You must ensure that the latest updates are installed. Please note: From January 2020, Microsoft no longer support Windows 7. ACCA would recommend upgrading to Windows 10 in order to maintain security on your machines.
CPU	2Ghz up to 15 clients 2 x 2Ghz 15–30 clients 4 x 2Ghz 30+ clients
Memory	2Gb up to 15 clients 4Gb 15–30 clients 8Gb 30+ clients Please note: 32 Bit operating systems can only address 4Gb of memory. It may also be necessary to enable the additional address space on 64 Bit operating systems. Please consult your hardware manufacturer for type and support for memory upgrades.
Hard Disk	40 GB
Graphics	A Graphics Adapter that supports DirectX 9c or newer. A Graphics Adapter that has at least 128MB of Video RAM. A Graphics Adapter that supports 1024 x 768 resolution in 32 bit colour
Network	A 100Mb LAN between SNA, clients and File Share. All devices should be on the same VLAN if used and be on the same subnet. A wired network is recommended. IPv6 is not supported at this time. Examiner and SNA must be able to communicate across the network using TCP-IP on port 19284. This port must be open and available in the network. All communication between workstations over this port is encrypted. Note: In the unlikely event that you cannot use port 19284 on your network, ACCA must be notified when you submit your licence application. Please note: Access to the file share uses the UNC path and requires DNS to resolve as well as the correct user permission to access. (See Installation Guide for full details of user permissions).
Power	UPS is recommended. Power settings should be set NOT TO sleep or Hibernate while in operation of exam delivery.
General	The use of virtualised machines is prohibited.
Internet	SNA requires an internet connection. Internet connection requires to support HTTPS connections on port 443 and also support TLS 1.2 at the transport layer. Internet Explorer 11, Microsoft Edge Chrome Version 80 Please note: cbe.accaglobal.com should be whitelisted on firewalls and proxy servers.
Regional	Regional settings on all workstations used for ACCA CBEs (including SNA) must be as follows: Regional settings must be set to "English (United Kingdom)" Decimal Separator must be set to "." Thousand Separator must be set to "," Date Separator must be set to "/" Time Separator must be set to ":" Short Date Format must be set to "dd/MM/yyyy" Long Date Format must be set to "dd MMMM yyyy" List Separator must be set to "," English must be the active keyboard. An English language must be installed on the PC (Normally any version of English will be sufficient).

Please note: Settings can be checked and changed via the control panel on the PC or via group policy.

Regional settings are user specific and need to be considered for the user account accessing the device.

GPO policy can also override any manual settings if configured via Active Directory GPOUpdate service (default every 90 minutes).

Please note: Some OEM supplied machines have an initial local regional setting but this has not been set in the registry. In this case it may be necessary to manually set these for the registry to be permanently updated.

SNA ON WINDOWS 8.1 RUNNING IN DESKTOP MODE (PRO & ENTERPRISE EDITIONS)

The following are the hardware and operating system requirements for running the SNA component on Microsoft Windows 8.1.

Item	Description
OS patch level	<p>Windows 8.1 running in desktop mode</p> <p>Microsoft regularly release software and security updates. You must ensure that the latest updates are installed.</p> <p>RT is currently not supported</p> <p>Surface devices are not currently supported</p> <p>Please note: Windows 8.1 is a free upgrade available from Microsoft to upgrade from Windows 8.0.</p>
CPU	<p>2Ghz up to 15 clients</p> <p>2 x 2Ghz 15–30 clients</p> <p>4 x 2Ghz 30+ clients</p>
Memory	<p>2Gb up to 15 clients</p> <p>4Gb 15–30 clients</p> <p>8Gb 30+ clients</p> <p>Please note: 32 Bit operating systems can only address 4Gb of memory. It may also be necessary to enable the additional address space on 64 Bit operating systems. Please consult your hardware manufacturer for type and support for memory upgrades.</p>
Hard Disk	40Gb
Graphics	<p>A Graphics Adapter that supports DirectX 9c or newer.</p> <p>A Graphics Adapter that has at least 128MB of Video RAM.</p> <p>A Graphics Adapter that supports 1024 x 768 resolution in 32 bit colour</p>
Network	<p>A 100mb LAN between SNA, clients and File Share.</p> <p>All devices should be on the same VLAN if used and be on the same subnet.</p> <p>A wired network is recommended.</p> <p>IPv6 is not supported at this time.</p> <p>Examiner and SNA must be able to communicate across the network using TCP-IP on port 19284. This port must be open and available in the network. All communication between workstations over this port is encrypted. Note: In the unlikely event that you cannot use port 19284 on your network, ACCA must be notified when you submit your licence application.</p> <p>Please note: Access to the file share uses the UNC path and requires DNS to resolve as well as the correct user permission to access. (See Installation Guide for full details of user permissions).</p>
Power	<p>UPS is recommended</p> <p>Power settings should be set NOT TO sleep or Hibernate while in operation of exam delivery</p>
General	The use of virtualised machines is prohibited
Internet	<p>SNA requires an internet connection.</p> <p>Internet connection requires to support HTTPS connections on port 443 and also support TLS 1.2 at the transport layer.</p> <p>Internet Explorer 11, Microsoft Edge</p> <p>Chrome Version 80</p> <p>Please note: cbe.accaglobal.com should be whitelisted on firewalls and proxy servers.</p>
Regional	<p>Regional settings on all workstations used for ACCA CBEs (including SNA) must be as follows:</p> <p>Regional settings must be set to "English (United Kingdom)"</p> <p>Decimal Separator must be set to "."</p> <p>Thousand Separator must be set to ","</p> <p>Date Separator must be set to "/"</p> <p>Time Separator must be set to ":"</p> <p>Short Date Format must be set to "dd/MM/yyyy"</p> <p>Long Date Format must be set to "dd MMMM yyyy"</p> <p>List Separator must be set to ";"</p> <p>English must be the active keyboard.</p>

An English language must be installed on the PC (Normally any version of English will be sufficient).

Please note: Settings can be checked and changed via the control panel on the PC or via group policy.

Regional settings are user specific and need to be considered for the user account accessing the device.

GPO policy can also override any manual settings if configured via Active Directory GPOupdate service (default every 90 minutes).

Please note: Some OEM supplied machines have an initial local regional setting but this has not been set in the registry. In this case it may be necessary to manually set these for the registry to be permanently updated.

SNA ON WINDOWS 10 (PRO, ENTERPRISE, ENTERPRISE LTSB & EDUCATION EDITIONS)

The following are the hardware and operating system requirements for running the File Server (Share) component on Microsoft Windows 10.

Item	Description
OS patch level	Windows 10 RT is currently not supported. Surface devices are not currently supported.
CPU	2Ghz up to 15 clients 2 x 2Ghz 15–30 clients 4 x 2Ghz 30+ clients
Memory	2Gb up to 15 clients 4Gb 15–30 clients 8Gb 30+ clients Please note: 32 Bit operating systems can only address 4Gb of memory. It may also be necessary to enable the additional address space on 64 Bit operating systems. Please consult your hardware manufacturer for type and support for memory upgrades.
Hard Disk	40Gb
Graphics	A Graphics Adapter that supports DirectX 9c or newer. A Graphics Adapter that has at least 128MB of Video RAM. A Graphics Adapter that supports 1024 x 768 resolution in 32 bit colour.
Network	A 100Mb LAN between SNA, clients and File Share. All devices should be on the same VLAN if used and be on the same subnet. A wired network is recommended. IPv6 is not supported at this time. Examiner and SNA must be able to communicate across the network using TCP-IP on port 19284. This port must be open and available in the network. All communication between workstations over this port is encrypted. Note: In the unlikely event that you cannot use port 19284 on your network, ACCA must be notified when you submit your licence application. Please note: Access to the file share uses the UNC path and requires DNS to resolve as well as the correct user permission to access. (See Installation Guide for full details of user permissions).
Power	UPS is recommended. Power settings should be set NOT TO sleep or Hibernate while in operation of exam delivery.
General	The use of virtualised machines is prohibited
Internet	SNA requires an internet connection. Internet connection requires to support HTTPS connections on port 443 and also support TLS 1.2 at the transport layer. Internet Explorer 11, Microsoft Edge Chrome Version 80 Please note: cbe.accaglobal.com should be whitelisted on firewalls and proxy servers.
Regional	Regional settings on all workstations used for ACCA CBEs must be as follows: Regional settings must be set to "English (United Kingdom)" Decimal Separator must be set to "." Thousand Separator must be set to "," Date Separator must be set to "/" Time Separator must be set to ":" Short Date Format must be set to "dd/MM/yyyy" Long Date Format must be set to "dd MMMM yyyy"

List Separator must be set to “”

English must be the active keyboard

An English language must be installed on the PC (Normally any version of English will be sufficient)

Please note: Settings can be checked and changed via the control panel on the PC or via group policy.

Regional settings are user specific and need to be considered for the user account accessing the device.

GPO policy can also override any manual settings if configured via Active Directory GPOUpdate service (default every 90 minutes)

Please note: Some OEM supplied machines have an initial local regional setting but this has not been set in the

ACCA EXAMINER ON WINDOWS 7 (BUSINESS, ENTERPRISE & ULTIMATE EDITIONS)

The following are the hardware and operating system requirements for running the Examiner component on Microsoft Windows 7.

Item	Description
OS patch level	SP1 Microsoft regularly release software and security updates. You must ensure that the latest updates are installed. Please note: From January 2020, Microsoft no longer support Windows 7. ACCA would recommend upgrading to Windows 10 in order to maintain security on your machines.
CPU	2Ghz
Memory	2Gb 200Mb free at the time of starting the exam
Hard Disk	As per Microsoft OS requirements 100Mb free at the time of starting the exam
Graphics	A Graphics Adapter that supports DirectX 9c or newer. A Graphics Adapter that has at least 128MB of Video RAM. A Graphics Adapter that supports 1024 x 768 resolution in 32 bit colour. Please note: Use of dual monitors is prohibited.
Network	A 100Mb LAN between SNA, clients and File Share. All devices should be on the same VLAN if used and be on the same subnet. A wired network is recommended. IPv6 is not supported at this time. Examiner and SNA must be able to communicate across the network using TCP-IP on port 19284. This port must be open and available in the network. All communication between workstations over this port is encrypted. Note: In the unlikely event that you cannot use port 19284 on your network, ACCA must be notified when you submit your licence application. Please note: Access to the file share uses the UNC path and requires DNS to resolve as well as the correct user permission to access. (See Installation Guide for full details of user permissions).
Power	UPS is recommended. Power settings should be set NOT TO sleep or Hibernate while in operation of exam delivery.
General	The use of virtualised machines is prohibited.
Internet	No specific requirements
Regional	Regional settings on all workstations used for ACCA CBEs must be as follows: Regional settings must be set to "English (United Kingdom)" Decimal Separator must be set to "." Thousand Separator must be set to "," Date Separator must be set to "/" Time Separator must be set to ":" Short Date Format must be set to "dd/MM/yyyy" Long Date Format must be set to "dd MMMM yyyy" List Separator must be set to ";" English must be the active keyboard. An English language must be installed on the PC (Normally any version of English will be sufficient). Please note: Settings can be checked and changed via the control panel on the PC or via group policy. Regional settings are user specific and need to be considered for the user account accessing the device. GPO policy can also override any manual settings if configured via Active Directory GPOUpdate service (default every 90 minutes). Please note: Some OEM supplied machines have an initial local regional setting but this has not been set in the registry. In this case it may be necessary to manually set these for the registry to be permanently updated. Please see Page 18 for further requirements regarding workstations running ACCA Examiner.

ACCA EXAMINER ON WINDOWS 8.1 RUNNING IN DESKTOP MODE (PRO & ENTERPRISE EDITIONS)

The following are the hardware and operating system requirements for running the Examiner component on Microsoft Windows 8.1.

Item	Description
OS patch level	<p>Windows 8.1 running in desktop mode.</p> <p>Microsoft regularly release software and security updates. You must ensure that the updates are pack installed.</p> <p>RT is currently not supported.</p> <p>Surface devices are not currently supported.</p> <p>Please note: Windows 8.1 is a free upgrade available from Microsoft to upgrade from Windows 8.0.</p>
CPU	2Ghz
Memory	4Gb 200Mb free at the time of starting the exam
Hard Disk	As per Microsoft OS requirements 100Mb free at the time of starting the exam
Graphics	<p>A Graphics Adapter that supports DirectX 9c or newer.</p> <p>A Graphics Adapter that has at least 128MB of Video RAM.</p> <p>A Graphics Adapter that supports 1024 x 768 resolution in 32 bit colour.</p> <p>Please note: Use of dual monitors is prohibited.</p>
Network	<p>A 100Mb LAN between SNA, clients and File Share.</p> <p>All devices should be on the same VLAN if used and be on the same subnet.</p> <p>A wired network is recommended.</p> <p>IPv6 is not supported at this time.</p> <p>Examiner and SNA must be able to communicate across the network using TCP-IP on port 19284. This port must be open and available in the network. All communication between workstations over this port is encrypted. Note: In the unlikely event that you cannot use port 19284 on your network, ACCA must be notified when you submit your licence application.</p> <p>Please note: Access to the file share uses the UNC path and requires DNS to resolve as well as the correct user permission to access. (See Installation Guide for full details of user permissions).</p>
Power	<p>UPS is recommended.</p> <p>Power settings should be set NOT TO sleep or Hibernate while in operation of exam delivery.</p>
General	The use of virtualised machines is prohibited.
Internet	No specific requirements
Regional	<p>Regional settings on all workstations used for ACCA CBEs must be as follows:</p> <p>Regional settings must be set to "English (United Kingdom)"</p> <p>Decimal Separator must be set to "."</p> <p>Thousand Separator must be set to ","</p> <p>Date Separator must be set to "/"</p> <p>Time Separator must be set to ":"</p> <p>Short Date Format must be set to "dd/MM/yyyy"</p> <p>Long Date Format must be set to "dd MMMM yyyy"</p> <p>List Separator must be set to ";"</p> <p>English must be the active keyboard</p> <p>An English language must be installed on the PC (Normally any version of English will be sufficient)</p> <p>Please note: Settings can be checked and changed via the control panel on the PC or via group policy.</p> <p>Regional settings are user specific and need to be considered for the user account accessing the device.</p> <p>GPO policy can also override any manual settings if configured via Active Directory GPOUpdate service (default every 90 minutes).</p> <p>Please see page 18 for further requirements for workstations running ACCA Examiner.</p>

The following are the hardware and operating system requirements for running the Examiner component on Microsoft Windows 10.

Item	Description
OS patch level	Windows 10 RT is currently not supported. Surface devices are not currently supported. Cortana is not currently supported.
CPU	2Ghz
Memory	4Gb 200Mb free at the time of starting the exam
Hard Disk	As per Microsoft OS requirements 100Mb free at the time of starting the exam
Graphics	A Graphics Adapter that supports DirectX 9c or newer. A Graphics Adapter that has at least 128MB of Video RAM. A Graphics Adapter that supports 1024 x 768 resolution in 32 bit colour. Please note: Use of dual monitors is prohibited.
Network	A 100Mb LAN between SNA, clients and File Share. All devices should be on the same VLAN if used and be on the same subnet. A wired network is recommended. IPv6 is not supported at this time. Examiner and SNA must be able to communicate across the network using TCP-IP on port 19284. This port must be open and available in the network. All communication between workstations over this port is encrypted. Note: In the unlikely event that you cannot use port 19284 on your network, ACCA must be notified when you submit your licence application. Please note: Access to the file share uses the UNC path and requires DNS to resolve as well as the correct user permission to access (See Installation Guide for full details of user permissions).
Power	UPS is recommended. Power settings should be set NOT TO sleep or Hibernate while in operation of exam delivery.
General	The use of virtualised machines is prohibited.
Internet	No specific requirements
Regional	Regional settings on all workstations used for ACCA CBEs must be as follows: Regional settings must be set to "English (United Kingdom)" Decimal Separator must be set to "." Thousand Separator must be set to "," Date Separator must be set to "/" Time Separator must be set to ":" Short Date Format must be set to "dd/MM/yyyy" Long Date Format must be set to "dd MMMM yyyy" List Separator must be set to ";" English must be the active keyboard An English language must be installed on the PC (Normally any version of English will be sufficient) Please note: Settings can be checked and changed via the control panel on the PC or via group policy. Regional settings are user specific and need to be considered for the user account accessing the device. GPO policy can also override any manual settings if configured via Active Directory GPOUpdate service (default every 90 minutes). Please see page 18 for further requirements for workstations running ACCA Examiner.

REQUIREMENTS FOR ALL WORKSTATIONS RUNNING ACCA EXAMINER

Exams must only be run on desktop PCs or full size laptop computers.

Recommended minimum screen size is 17".

Use of dual monitors is prohibited.

Use of touchscreen is prohibited.

Additional requirements pertaining to the use of laptop computers are as follows:

- The above hardware and software requirements are adhered to.
- Any laptop is the property of the CBE centre/named CBE site and subject to the same strict schedule of maintenance and updates as a desktop PC.
- The network is secure, stable, and free from interruptions. Unstable networks will cause problems during ACCA's CBEs and the Licensed Centre therefore must take all measures to ensure that the network is secure, robust and stable. It is strongly recommended that a wired network is used.
- Laptops are connected to a mains power supply and must not be powered from battery alone to conduct CBEs.
- It is strongly recommended that a laptop is only used with docking station, mouse, and monitor.
- The laptops used for ACCA's CBEs must not be portable by using security devices to lock them to the desk.
- The laptops containing ACCA's software must be stored securely at the centre when not in use.
- If the Licensed Centre becomes aware that any laptop containing ACCA's CBE software is missing, the CBE team must be informed immediately.
- If the Licensed Centre becomes aware of any laptop containing ACCA's CBE software being stolen, the police must be notified and full details of the incident provided to the CBE team along with the police incident reference number.