SOFTWARE OF EXCELLENCE
A ◢ HENRY SCHEIN® COMPANY

User's Guide

EXACT / EVOLUTION

version 12

System Requirements

> **NOTE FOR DUTCH AUDIENCE:**
>
> Wherever you see "**EX**ACT" in this document, please take it as also applying to **EVOLUTION**.

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EXACT V12 SYSTEM REQUIREMENTS

This information describes the hardware and software requirements and recommendations for **EX**ACT version 12.

Purpose:

- It is intended primarily as a technical guide for setting up a functionally-correct IT infrastructure for **EXACT**.
- It can also be used as a troubleshooting resource, to check whether problem systems actually do meet the minimum system requirements.

Updates to these System Requirements:

See *Updates to* **EX**ACT *System Requirements* (on page 6) to track changes.

WINDOWS SERVER 2016 IS SUPPORTED FROM EXACT v12.8

WINDOWS XP AND SERVER 2003 ARE NO LONGER SUPPORTED:

In April **2014** Microsoft stopped supporting these platforms. From July 2017 Software of Excellence no longer supports EXACT and X-Ray machines running on these platforms.

The following **Warning** message now appears in the EXACT Server Setup Wizard, and you will need to tick a checkbox to continue the installation:
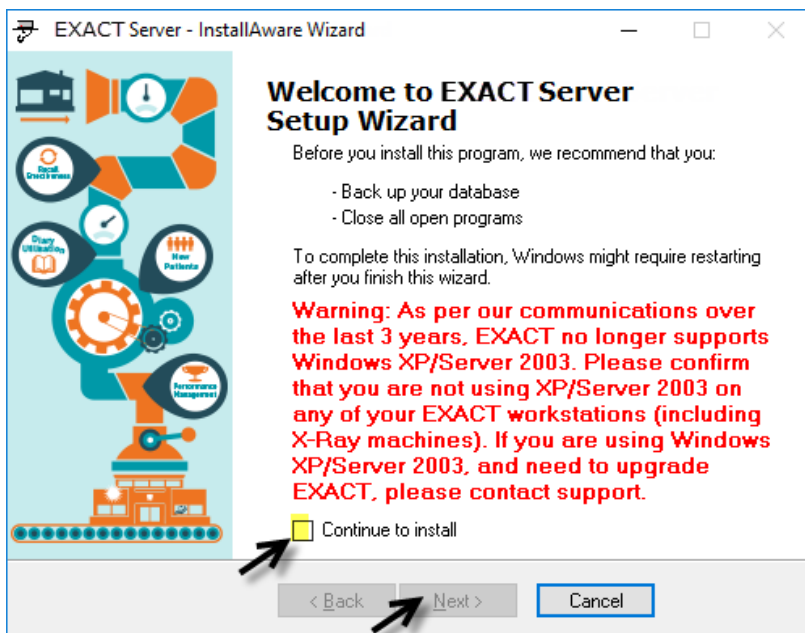
Please refer to your IT services and/or the Support Desk for further guidance.

IMPORTANT NOTES on System Requirements

● **Signature required:**

Please request that your hardware supplier sign and return the *Sign Off page* (see "*Client hardware supplier Sign Off*" on page 49) to Software of Excellence prior to your **EX**ACT software installation date.

Software of Excellence will then prepare for the **EX**ACT software installation on the understanding that the IT infrastructure is "**EX**ACT-ready".

● **Specifications are for EXACT only - additional software may have additional requirements.**

Please note the specifications in this System Requirements document only cover the requirements for EXACT and do not take into consideration any additional software you may require to run alongside EXACT. It is important that you consider the resource requirements for other software as additional to our suggested specifications.

● **Hardware setup deadline:**

All of your hardware needs to be set up before the scheduled date/time for Software of Excellence to configure your **EX**ACT software. Meeting this deadline ensures that:

- Your installation runs smoothly.
- Training starts on time.
- There are no associated costs incurred by the practice for rescheduling the installation and/or training.

● ⚠️ **End of life / no longer supported**

WINDOWS XP AND SERVER 2003 ARE NO LONGER SUPPORTED!

In April 2014 Microsoft stopped supporting these platforms. From July 2017 the following applies:

- Software of Excellence no longer supports EXACT running on these platforms.
- New EXACT builds do not install on these platforms.

WINDOWS VISTA IS NO LONGER SUPPORTED!

From April 2018 Software of Excellence no longer supports EXACT running on Vista.

Please refer to your IT services and/or the Support Desk for further guidance.

● **Database on its own drive:** For effective system performance, the **EX**ACT database should be on a separate physical drive to Windows and Program Files.

● **RAM and hard drive requirements:** At least 2 GB of RAM needs to be available for **EX**ACT.
At least 50GB of hard drive space needs to be available for the **EX**ACT database, to which you need to add anticipated X-Ray storage requirements.

- **Not officially supported, but may function:**

  - **STANDARD versions of Windows Server 2011** are not officially supported.
  - **Macintosh computers** running Windows Parallel session (either in a virtual machine such as Parallels Desktop or VMware Fusion, or installed directly) will probably run **EX**ACT, but are not supported.
  - **Virtual Machines (VMs)** are not officially supported, but if you use VMs please be aware that:
    - The virtual machine itself needs to meet the required specifications, as well as the machine that the VM is running on.
    - You need to ensure that memory swapping between multiple VMs does not occur (for example, don't have a physical machine with only 4GB memory run two VMs each assigned 3GB of memory)
    - Even in the best circumstances you may notice slightly reduced **EX**ACT performance on VMs.

- **Not supported / conditionally supported:**

  - Please consult with Software of Excellence when planning installations with more than 50 **EX**ACT Licences.
  - Wireless devices are not approved or supported, except with Clinipad (see [Clinipad Requirements](#)).
  - No Home edition of any operating system is supported.
  - Linux Operating Systems are not supported.
  - **EX**ACT running over a Virtual Private Network (VPN) is not supported.
  - WAN configurations are only supported in Microsoft Terminal Services or Citrix Metaframe environments.

- **Aim for more than the minimal requirements:** Using the *minimal* system requirements could lead to performance issues on some systems.

- **Service Packs and critical updates:** Please ensure that the latest service packs for all operating systems are installed. We cannot support operating systems that do not have all Service Packs and critical updates applied.

- **Screen resolution: EX**ACT minimum resolution is 1280 x 1024 (at lower resolutions the screen is truncated). However, some features and modules within **EX**ACT require a widescreen monitor, for which we recommend screens capable of 1920 x 1080 and above.

- **Remote operation of EX**ACT **and Secondary User Licensing**: Secondary User Licensing works on the basis of a Secondary User Licence for each connecting computer. For details of licensing and remote connection requirements see **EX**ACT *Secondary User Licences* (see "*EXACT Secondary User Licences*" on page 25).

- **EX**AMINE Pro **module:**

  - The **EX**AMINE Pro module has specific *advanced* hardware requirements affecting both server and workstations.
    See *Specific hardware requirements for* **EX**AMINE Pro (on page 46)
  - **EX**AMINE Pro digital imaging software supports 64 bit operating systems, but you will need to check with your digital imaging hardware supplier whether your hardware has drivers for 64 bit operating systems.

- **Microsoft .NET 4.6** is required for **EX**ACT, but should be included within current operating systems.

- **Folder permissions for a network share:**

  EXACT reads from and writes to these sub-folders under the Program Files folder on the SERVER: EXACTData, EXACTDemoData, EXACTResources Software of Excellence.

  All **EX**ACT *network users* require read/write access to these folders.

  The **EX**ACT *application* requires full read/write and change access to these folders.

  The following are best turned ON: Network discovery, File and printer sharing, Public folder access.

- **Printers:**
  - The dental practice is responsible for ensuring that the latest drivers are installed for the printer/s.
  - Printer drivers must be installed on all workstations that need to print.
  - Printers need to have unique names. If the same physical printer will be used for both A4 and A5 printing, two printer instances have to be configured, one for A4 and one for A5. The printer instances should be shared and clearly labelled so as to easily identify them. For example, **HP_A4** and **HP_A5**.
  - *If scheduling reports* you need to have the printers installed in **EX**ACT, and not use the default Windows printer functionality.

- **Backup strategy:**

  The dental practice is responsible for arranging, configuring, maintaining and testing a backup strategy. Software of Excellence cannot be held responsible for any backup negligence on the part of the practice, nor is Software of Excellence responsible for ensuring that backup tapes are regularly checked for functional operation – this remains the responsibility of the dental practice or its associated IT services.

- **Network backup:**

  We strongly recommend that you complete a network backup on your server at the end of each day. You will need to configure your backup software to copy the network backup data and not your live data.

  With modules such as online bookings, the **EX**ACT system needs to be accessible 24 hours a day. However, this may impact your nightly backup as some of the files may not be available for copying by your backup software. This can be remedied by ensuring that you perform a network backup from within **EX**ACT, on the Server at the end of the day. You can then set your primary backup to copy the network backup.

  See also: **EX**ACT *network backups* (on page 31)

- **Anti-Virus:**

  Software of Excellence cannot be held responsible for viruses on clients' systems or of data being lost due to malicious attacks from the Internet. We strongly recommend that you use virus protection software and if you are using broadband we recommend that you have a firewall installed.

  If Live Anti-virus file scanning within a network causes performance issues it may be advisable to add an exception to the Anti-virus programme (this could dramatically improve performance).

  Software of Excellence strongly recommends virus protection software to protect your system from the multitude of viruses on the Internet.

  Please ensure that the following exceptions have been added to your Anti Virus on all computers using EXACT, including your server (Please note the following are the default install locations, including data location, for these files, if you have changed the default location please use those locations instead):

On 32 Bit Machines:

C:\Program Files\Software of Excellence*.*

C:\Program Files\Software of Excellence\EXACT\Dental.exe

C:\Programdata\Software of Excellence*.*

C:\Program Files\SOE\Expro.exe (If you are using <examinepro>)

On 64 Bit Machines:

C:\Program Files (x86)\Software of Excellence*.*

C:\Program Files (x86)\Software of Excellence\EXACT\Dental.exe

C:\Programdata\Software of Excellence*.*

C:\Program Files (x86)\SOE\Expro.exe (If you are using <examinepro>)

Firewall Exceptions: UDP Port 6001 (If you are using <examinepro>)

NOTE that you will need to add the path of your EXACT data to the exceptions if this is not located in the default path of "C:\ProgramData\Software of Excellence"

● **Improve system performance:**

System performance is affected by many variables. Besides the standard IT strategies you can

- Base the hardware on recommended rather than minimum specifications.
- Locate the **EX**ACT database on a separate physical drive to Windows and Program Files.
- Live Anti-virus file scanning frequently causes network performance issues. In this case add an exception to the Anti-virus programme.
- Use a 1Gigabit per second network where *every* component of the network can handle 1Gb throughput. See *Network speed* (on page 43) for more details.
- Use SSDs (solid state drives) on servers, with 20% fault recovery.
- Use a graphics card with hardware acceleration if using graphics intensively (such as with ExaminePro).

● **Remote Access Software:**

Software of Excellence uses *Bomgar and VNC software* (see "*Remote Access Software - Bomgar and VNC*" on page 27) to remote-support clients via their broadband Internet connections.

Bomgar requires no software installed at the client end, but does require ports and exceptions configuration (see *Ports and Exceptions* (see "*Bomgar ports and exceptions*" on page 45)).

VNC needs to be installed on all workstations and the server prior to **EX**ACT installation. Microsoft Word 2003 and Microsoft Excel 2003 or later are required to view and create documents, reports and patient lists.

● **Device compatibility:**

Please ensure that any 3rd party devices that you intend adding to your system are on the Microsoft Windows operating system and hardware compatibility lists, which can be found at *www.microsoft.com/hcl* (*http://www.microsoft.com/hcl*)

Checklist for choosing a Hardware Supplier

Software of Excellence is committed to assisting you and your hardware vendors in the installation of your hardware. Please contact your Regional Business Manager if you need any assistance.

As you will be relying on the computerised dental system to run your business, it pays to strategize how to maximize uptime and minimize downtime. One of the first steps in this strategy is to choose your hardware supplier very carefully.

✓	**Key points to consider before contracting a hardware supplier:**
☐	Is there a service contract by means of which to correct any problems that may arise?
☐	Should the system fail, what is the response time for an engineer to arrive on site?
☐	Once the supplier has diagnosed where the fault lies, will they get it back up and running or just supply the parts?
☐	If there is a problem with the operating system or if configuration changes are needed within the network, will the supplier correct these, or only support the physical hardware on the individual PCs?
☐	If a computer fails and is removed from site, will the supplier replace it with a temporary machine?
☐	Consider what will happen to the contract in the second and subsequent years. A warranty replacement arrangement is not enough. The contract will need to be extendable.
☐	Does the contract warrant that the supplier will continue to support the *system functionality* rather than just supporting the system components?
☐	Will the supplier check the integrity of your backups on a regular basis?

Verification that your IT infrastructure conforms to at least the minimum requirements described in this document:

Please pass this document on to your hardware supplier and request that they **sign and return The Sign Off Page (see "Client hardware supplier Sign Off" on page 49)** to Software of Excellence *before* your **EXACT** software installation date.

Hardware Requirements and Recommendations

Disc selection

> **Backup** is important, and a section is dedicated to the topic on page 31.
>
> Backup is explicitly excluded from consideration here.

Operating System on separate HDD

In a typical dental practice, it is common for the EXACT server software to be installed on the same computer that serves as the Active Directory domain controller. Recommended is that write caching be disabled on the drive hosting the Active Directory database. Without caching, SSDs suffer a significantly higher performance degradation than HDDs. However, the best performance for the EXACT database can be achieved on SSDs.

Therefore it is recommended that the server operating system be installed on a separate hard disk drive (e.g. SATA), and the EXACT database on SSD.

These steps guide the selection of drives for the EXACT server computer.

1. Choose the drive technology

HDD technology is supported. One hard drive is a minimum for EXACT to run.

HDD is recommended for the OS drive (due to Active Directory mentioned above).

SSD is recommended for the EXACT database (and Images, if optionally using imaging software).

RAID is highly recommended.

Refer to your IT provider for recommendations on Resilience and Performance of drives installed on your machines.

2. Calculate the size

The capacity of the chosen drive(s) needs to cater for:

- Operating System.
- Database (read-write, random access, read often, writes to anywhere on the disk).
- Images (write once and read often, writes sequentially).

3. Estimate the growth capacity

As every practice installation is unique, the growth capacity needs to be individually estimated.

Each disk must cater for its own 5 year growth capacity (5 years is the typical lifespan of the hardware before replacement), depending on the function of the disk and the anticipated growth of the business.

In general, the Operating System remains relatively stable in size, the Database increases slowly and the Images storage can increase quickly – see the calculation example on page 12.

4. Decide on the disk configuration

Minimum configuration	Recommended configuration
OS + DB + Images	OS DB + Images
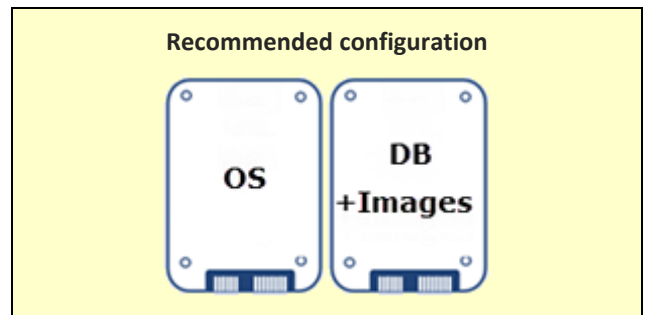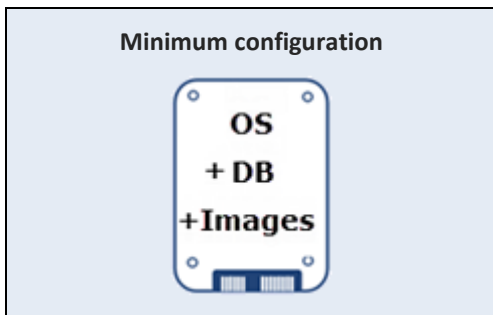
Calculation example for demonstration purposes only

Capacity:

	Operating System	Database	Images
Today:	60GB	10GB	100GB
Projected 5 years:	80GB	20GB	250GB

Disk options:

Minimum configuration	or	Recommended configuration			< Configuration
		OS **+** DB and Images			
1 x 400GB HDD		1 x 100GB HDD **+** 1 x 300GB SSD			**< No RAID**
		1 x 100GB HDD **+** 2 x 300GB SSDs			**< RAID1**
		1 x 100GB HDD **+** 3 x 300GB SSDs			**< RAID5**

Calculation template

Capacity:

	Operating System	Database	Images
Today:			
Projected 5 years:			

Separate backup solution[1]	

[1] Refer to your IT contractor for a professional backup solution.

Disk options:

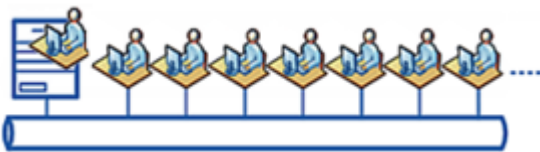| **Minimum configuration**	**or**	**Recommended configuration**	
		OS **+**	**DB and Images**

Server and Workstation Specifications

EXACT follows a client-server architecture. Each user needs their own workstation, but the server can optionally double-up as a workstation.

IMPORTANT: The EXACT server should be for EXACT *only*.

Active Directory, SQL server, SharePoint server, AV server or other server software, should be run on separate hardware.

Backup is excluded from these specifications.

Server specification – Non-dedicated Server (i.e. the Server also functions as a workstation)

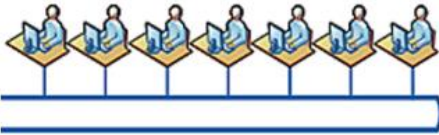| COMPONENT	MINIMUM	RECOMMENDED
Operating System	Windows 7 Professional[1]	Windows Server 2016
CPU	Intel i5 or equivalent	Intel Xeon / i7 or equivalent
RAM	8GB	16GB
Disks[2]	1 x HDD	1 HDD + 1 SSD (ideally more with RAID)
Graphics Card	Optional, but if using intensive graphics such as with **EX**AMINE Pro, a video card that supports hardware acceleration	A video card that supports hardware acceleration

Server specification - Dedicated Server
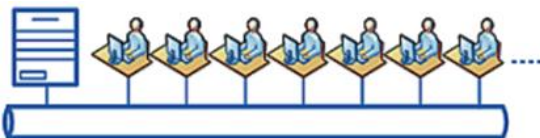
COMPONENT	MINIMUM	RECOMMENDED
Operating System	Windows 7 Professional[1]	Windows Server 2016
CPU	Intel i5 or equivalent	Intel Xeon / i7 or equivalent
RAM	4GB	16GB
Disks[2]	1 x HDD	1 HDD + 1 SSD (ideally more with RAID)

[1] Both 32-bit and 64-bit versions of Windows are supported. No Home edition of any operating system is supported.

[2] Refer to page 12 for calculating the quantity and sizes of disks.

Workstation specification

COMPONENT	MINIMUM	RECOMMENDED
Operating System	Windows 7 Professional[1]	Windows 10 Professional[1]
CPU	Dual Core	Intel i5 or equivalent
RAM	4GB	8GB
Disk	100GB HDD	100GB SSD
Graphics Card	Optional, but if using intensive graphics such as with **EX**AMINE Pro, a video card that supports hardware acceleration.	A video card that supports hardware acceleration.
Screen resolution	1280 x 1024 [2]	

[1] Both 32-bit and 64-bit versions of Windows are supported. No Home edition of any operating system is supported.

[2] Parts of the graphical user interface will be truncated at screen resolutions lower than the stated minimum.

Specifications are for **EX**ACT *only - additional software may have additional requirements.*

Please note that the specifications in this System Requirements document only cover the requirements for **EX**ACT. They do not take into consideration any additional software you may require to run alongside **EX**ACT. It is important that you consider the resource requirements for other software as additional to our suggested specifications.

Printers

See also: ■◀ *Adding a printer http://portal.softwareofexcellence.com/video/adding-printer* ⤢

Points to note on Printers:

- The dental practice is responsible for ensuring that the latest drivers are installed for the printer/s.
- Printer drivers need to be installed on all workstations that will need to print.
- If all printers are already configured to work within Windows, the printing setup will take less time during the **EX**ACT installation.
- Generally, it is not required that the network printer is 'mapped' to a local LPT port and it is not recommended.
- The printers spooling type should be set to RAW.
- If the same printer is to be used for both A4 and A5 printing, multiple printers will need to be configured, one for A4 and one for A5. The printers should be shared and clearly labelled so as to easily identify them, e.g. HP_A4 and HP_A5.

Recommended Card printer settings

From our experience, we have seen that card printers require the following settings:

- Paper Settings - Landscape
- Paper size - Label 2.25 - 3.00
- Copy Count - 1
- Graphic Resolution - 200 DPI
- Media - 3.5 ips
- Paper output - Cutter Disabled
- Print Density - 11
- Metallic spooling - ON

Sample compatible printers   and related devices

The following recommendations are only a selection of compatible devices. Due to the frequent market changes and model number changes the devices listed may no longer be available. Please refer to Software of Excellence if you wish to purchase hardware that is not listed.

(While Lexmark and Canon printers work within **EX**ACT it has been seen that these are very slow across the network.)

Peripherals		
Type	**Make**	**Model**
Colour Inkjet Printers	Hewlett Packard	6500 All in One (Printer, Scanner, Copier, Fax)
	Hewlett Packard	6000 Colour inkjet printer
Mono Laser Printers	Hewlett Packard	Laserjet 1102w
	Hewlett Packard	Laserjet 1606DN
	Hewlett Packard	Laserjet P2055DN

Colour Laser Printer	Hewlett Packard	CP1525n (Required for sites in the Republic of Ireland who need to print PRSI forms)
Appointment Card Printers	Zebra	LP2844
	Zebra	GK420 DT (Special Thermal cards required)
Scanners1	Keyscan	Keyboard Scanner
	Epson	V330
	Epson	V750

1 Scanners must be Twain compatible to work with **EX**ACT TM

A4 and A5 printing on one physical printer

If the same physical printer is to be used for both A4 and A5 printing, multiple printer instances will need to be configured, one for A4 and one for A5.

The printers should be shared and clearly labelled so as to easily identify them. e.g. **HP_A4** and **HP_A5**.

System Configuration

Good practice:

The Operating System should be configured to allow the application to function and perform well.

Best practice is that the server name should not contain any spaces or start with a number (this is not be mandatory but it sometimes causes problems elsewhere). A good example of a server name is 'SERVER'.

When **EXACT** Server installs for the first time it will automatically create the appropriate share folders for the Demonstration and Practice Databases. It is good practice and it simplifies Support if the Databases are located in the same location (this is not mandatory).

Required:

- **EXACT** reads from, and writes to, a network share on the server, so it is required that the application has full read, write and change access to the **\EXACTwin** or the **EXACT Data** folder on the server.
- All network users must have read/write access.
- Windows - latest Service Pack as recommended by Microsoft
- NTFS
- Client Usernames and Passwords configured in User Manager

Supported Operating Systems

The list below outlines the versions of operating systems that we support along with the recommended service pack and file system.

> **NOTE:** No Home edition of any operating system is officially supported by Software of Excellence.

⚠️ **End of life / no longer supported**

WINDOWS XP AND SERVER 2003 ARE NO LONGER SUPPORTED!

In April 2014 Microsoft stopped supporting these platforms. From July 2017 the following applies:

- Software of Excellence no longer supports EXACT running on these platforms.
- New EXACT builds do not install on these platforms.

ADVANCE NOTICE: WINDOWS VISTA NEARS END OF LIFE

In April 2017 Microsoft stops supporting Vista.

From April 2018 Software of Excellence no longer supports EXACT running on Vista.

Please refer to your IT services and/or the Support Desk for further guidance.

Windows 7 32 bit or 64 bit

Windows 7 Professional

Windows 7 Ultimate

Latest Service Pack as recommended by Microsoft

NTFS – Required

Client Usernames and Passwords configured in User Manager

Windows 2008 R2 32 bit or 64 bit

Latest Service Pack as recommended by Microsoft

NTFS – Required

Client Usernames and Passwords configured in User Manager

Windows 2012 32 or 64 bit

Windows 2012 Standard and R2 Standard

Latest Service Pack as recommended by Microsoft

NTFS - Required

Windows 8 or 8.1 32 or 64 bit

Windows 8 Professional or Enterprise

Latest Service Pack as recommended by Microsoft

NTFS – Required

Windows 10

Windows 10 is officially supported from **EX**ACT v11.10.

Windows Server 2016

Windows Server 2016 is officially supported from **EX**ACT v12.8.

Virtual Machine (VM) guidelines

Virtual Machines (VMs) are not **officially** supported but they are likely to function if you follow these guidelines:

- The virtual machine itself AND the machine the VM runs on need to meet the required specifications.
- You need to ensure that memory swapping between multiple VMs does not occur (for example, don't have a physical machine with only 4GB memory run two VMs each assigned 3GB of memory)
- Even in the best circumstances you may notice slightly reduced **EX**ACT performance on VMs.
- You *may* have some issues with Presentation Manager run on VM, but most likely will not.

SHA-2 Email Encryption

Overview:

EXACT Email historically employed SHA-1 Email encryption, but from v12.3 it upgrades practices to be compliant with SHA-2 Email encryption. Most practices will not notice a difference, but practices that still use Windows XP and Server 2003 need to plan carefully.

> **IMPORTANT:**
>
> Compulsory upgrade: **NHS Scotland practices** are compelled to upgrade because Scotland NHS has prescribed SHA-2 encryption as a transmission protocol for all email-based Scottish EDI Claims from 30 December 2016.
>
> Due to Microsoft's discontinued support of Windows XP and Server 2003, these systems use only SHA-1 encryption and cannot send eMails via SHA-2 Encryption, so practices that still use these systems need to consider alternative options.

Benefits:

- Increased security around eMail encryption.
- Compliance with Industry Standard Encryption standards (All major software vendors (such as Microsoft and Google) and Certificate Authorities are phasing out SHA-1 in favour of the more secure SHA-2 algorithm.
- NHS Scotland practices can continue to send Scottish NHS Claims.

Limited catering to SHA-1:

- The new eMailServer/Service (EXACT v12.3 and later) will send eMails by default with SHA-2 Encryption, but if it communicates with a non-SHA-2 Compliant eMailServer it will 'stepdown' to SHA-1 if necessary.
- EXACT installs .NET 4.5 onto practice sites during the v12.3 upgrade. However, this version of .NET cannot be installed on Microsoft Windows XP.
- When an "XP Only Site" encounters a SHA-1 rejection from an eMail Server, EXACT presents the eMail Error to the user in a readable format, informing them to contact their IT Administrator for assistance, rather than the Software of Excellence Support Desks.

Text entry - Unicode not supported

EXACT does not support Unicode text entry such as Chinese or Arabic characters.

Real Data Check

Your **EX**ACT Dataset status is monitored by **Real Data Check** software.

Real Data Check is a safety mechanism to prevent patients receiving two versions of automated SMS, Email and Easypost communications.

It only allows automated outbound patient communications from a dataset that is registered as the **Real Data** practice dataset, within protected Software of Excellence control.

To be considered **Real Data,** a dataset must meet two criteria:

- It has a valid Practice ID.

- The Practice ID is unique.

Therefore,

- If your dataset has **no Practice ID**, automated patient communications will not function with that dataset.
- If you create an active duplicate dataset with a **duplicate Practice ID**, automated patient communications will not function with the duplicate.

Example:

If you back up the practice dataset and install the backup on a new server without taking down the old server, resulting in two running servers, each with an active version of the dataset, automated patient communications will only function on the original dataset.

In performing its function, Real Data Check may pop up error or warning messages relating to your dataset.

It also provides a means for you to claim a dataset as the genuine (real, live) dataset (for example, in the situation where you have duplicated the original)

To act on an alert claiming that your dataset is not normal

When you log into the new server, **EX**ACT identifies that your logged in database does not belong to the machine, and displays a flashing Alert in the toolbar.

Click the icon to view the message:
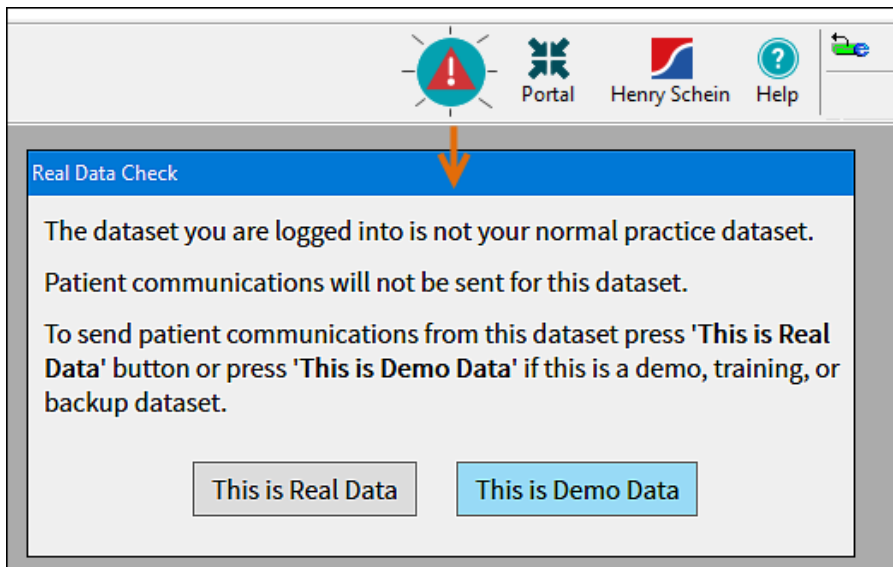
You need to establish - *are you in fact using a duplicate dataset?*

For a demo, training or backup dataset:

If **EX**ACT is correct and this is a Demo, Training or Backup dataset, simply click the button **This is Demo Data**.

You will be able to continue using the dataset, and no automated patient SMS, Email or Easypost communications will be sent from this dataset.
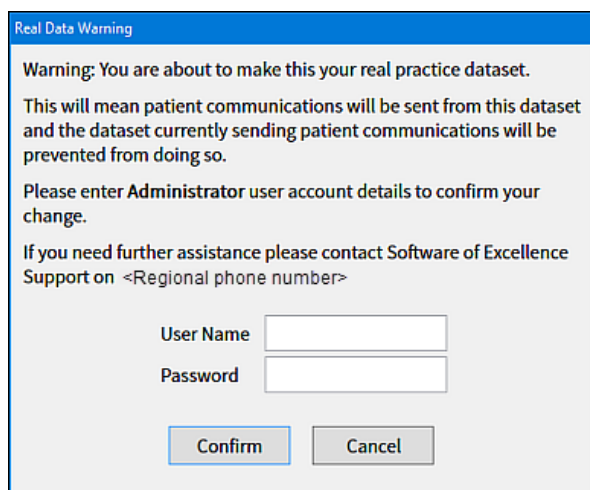
By pressing **This is Demo Data** you are confirming that the database you are logged into is not the Live database and automated communications will not be sent.

For a Real practice dataset:

If **EX**ACT is incorrect and ***this is actually the normal Live practice dataset***, you will need an Administrator-level user to *claim* it as Real Data.

If your practice ***has no*** Administrator-level user, please contact Software of Excellence Support to resolve the situation.

Otherwise, your Administrator-level user can click the button **This is Real Data** to open the following Real Data Warning screen:

Real Data Warning

Warning: You are about to make this your real practice dataset.

This will mean patient communications will be sent from this dataset and the dataset currently sending patient communications will be prevented from doing so.

Please enter **Administrator** user account details to confirm your change.

If you need further assistance please contact Software of Excellence Support on <Regional phone number>

User Name
Password

Confirm   Cancel

The Administrator enters **User Name** and **Password** and clicks the **Confirm** button.

EXACT then records the current dataset as the Real (Live) dataset and associates your Practice ID with it. You will see this message:

Real Data Confirmation

You have successfully set this as your real practice dataset.
Patient communications will now be sent.

OK

For each such successful change of ownership, **EX**ACT records an entry in the System Log.

Claiming a dataset as the Real (Live) dataset

Only **EX**ACT Administrators and Software of Excellence personnel are authorised to claim a dataset as Real Data.

Where it is necessary for practices to *migrate* their servers, practice Administrators have a means to claim (authenticate) new datasets as the real data.

Example 1:

The practice database is backed up, the old server is taken down and the backup is installed on a new server. Even though the old server is de-activated, Real Data Check blocks communications from the new server because this server is not registered as the genuine server for the practice.
An administrator-level user "claims" this new server as the genuine server", which frees communications from this new server and blocks communications from any other server - even if the old server and database is resurrected, its communications will be blocked.

Example 2:

A single server runs Practice A *and* Practice B and is identified as genuine for both.
The Practice B database is backed up and then installed on a new server, which an Administrator then claims as genuine for Practice B.
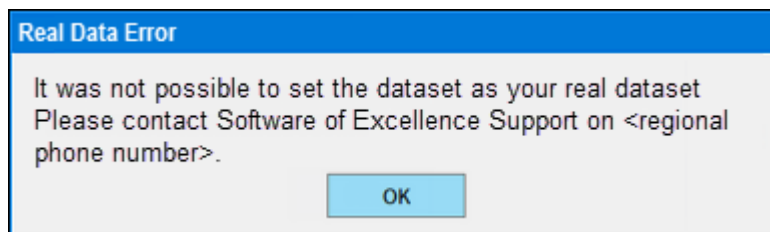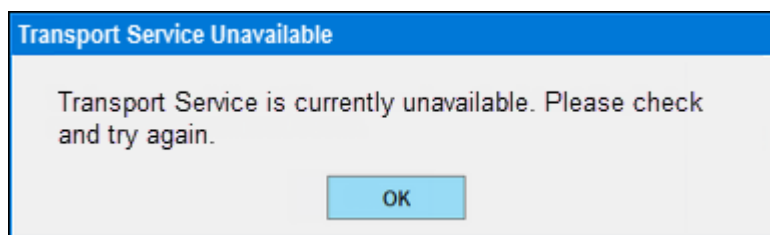The outcome is that Practice A and B are now split and each sends valid communications from its own genuine server.

To claim a dataset as Real Data (i.e. not demo, training or backup data)

Only **EX**ACT Administrators and Software of Excellence personnel are authorised to claim a dataset as Real Data.

Log into the dataset and follow the procedure described above for a Real practice dataset,

Possible error messages in the above Claiming procedure:

Transport Service Unavailable

Transport Service is currently unavailable. Please check and try again.

OK

Real Data Error

It was not possible to set the dataset as your real dataset Please contact Software of Excellence Support on <regional phone number>.

OK

EXACT Secondary User Licences

Overview

Secondary User Licences enable practitioners to connect to **EX**ACT from remote locations to perform small tasks that weren't completed during the day, such as dentists completing clinical notes or Practice Managers checking report results.

EXACT local licensing

EXACT monitors Licence usage across a network of computers, where it is normal for a practice network to have a server with no **EX**ACT Licence plus X number of workstations, each with an **EX**ACT Licence.

EXACT Secondary User Licensing

Practitioners who connect remotely to the practice are usually advised by their IT contractor / department to use **Microsoft Remote Desktop Protocol (RDP)** because it is easily manageable and can be controlled via Windows domain policy.

When a user remotely connects to the practice, **EX**ACT checks whether the local practice computer being logged into is running on a Server Operating System (such as SBS 2003, 2008, Server 2011, Server 2012), with these possible results:

- If this check returns *false* (no this is not a server but a workstation), **EX**ACT sees that workstation as consuming its own Licence normally, so no Secondary User Licence is required, and the remote user can freely perform **EX**ACT tasks (note that the physical practice computer will be locked when a user is remotely connected).

- If this check returns *true* (yes this is a server), **EX**ACT checks if it has a valid Secondary User Licence for the particular remote computer that is connecting. This is because the nature of the RDP protocol sees the computer name from the remote location passed through to **EX**ACT.

  o If it finds the Secondary User Licence for that computer it allows the remote operation and the remote user can operate the workstation, with some limitations (note also that the physical practice computer will be locked for the duration of the remote connection, so local practitioners cannot use this computer during this period).

  o If it finds no Secondary User Licence for that PC, the practitioner will see a message to the effect that there are '**No licences available, call Sales**' - if you wish to purchase Secondary User Licences please call your Sales Representative or Account Manager in this case.

IMPORTANT: The Secondary User Licensing works on the basis of a Secondary User Licence for *each* connecting computer. For example, a home Laptop and a home Desktop would *each* require a Licence, for a total of 2 Secondary User Licences.

Purchasing Secondary User Licences

Purchase Secondary User Licences from your local Sales Representative or Account Manager.

Limitations of remote operation

- Secondary User Licences are intended only for light tasks, not for full **EX**ACT operation.
- On a remote connection there may be reduced or no printer functionality, a slow refresh speed between screens, disabling of 3D Graphics, no Xray acquisition and slow image loading.
- The quality of a remote connection can vary depending on your hardware and software.

- Remote desktop connection into a practice computer is not possible if that computer is powered down, so remote users need to ensure that practitioners do not shut down their practice computers.
- Remote desktop connection from a remote computer into a practice workstation will automatically displace (log off) a concurrent local user of that workstation in the practice, and the workstation will be locked for the duration of the remote connection. This is because only one person can use a standard Windows operating system at a time. To work around this, practitioners need guidelines on when to log in remotely.

Requirements for a successful connection from remote computer to practice computer

- The practice computer must be turned on and it must not be asleep / hibernating (ensure that its settings for sleep and hibernation are set to **Never** in its power plan).
- The practice computer must have a network connection.
- The remote user requires network access to the practice computer (this could be through the Internet)
- The practice computer must be enabled for remote connections.
- Remote users require permission to connect (they must be listed as users on the practice computer).

Installing remote desktop software and configuring remote connections

Please consult with your IT installer and make the above information available.

Using the remote connection

Please ask your IT installer for instructions.

Remote Access Software - Bomgar and VNC

Software of Excellence uses Bomgar and VNC software to support clients via their broadband Internet connections.

Bomgar software

Bomgar is a remote support solution that allows support technicians to remotely connect to end-user systems through firewalls from their computer or mobile devices. Bomgar users can conduct remote support sessions without passing session details through a third-party, keeping system and data access behind the customer's own firewall and security measures.

Bomgar is a web based application that requires no software installed at the client end.

Website: *www.Bomgar.com www.Bomgar.com*

See also: *Bomgar ports and exceptions* (on page 45)

VNC software

VNC software consists of a server and client application for the Virtual Network Computing (VNC) protocol to control another computer's screen remotely.

VNC needs to be installed on all workstations *and* the server *prior to* the install and/or conversion team setting up **EX**ACT.

It is used to access the other workstations once a Bomgar connection has been established, if a workstation has no direct Internet connection.

i.e. a Support technician can "Bomgar" from a remote location into your network, and can then "VNC" to your **EX**ACT systems on that network.

Website: *www.realvnc.com www.realvnc.com*

Microsoft Remote Desktop

Use Microsoft Remote Desktop to connect remotely to practice computers in order to run **EX**ACT from a remote location. This requires Remote Licensing and appropriate configuration.
See **EX**ACT *Secondary User Licences* (see "*EXACT Secondary User Licences*" on page 25)

Clinipad Requirements

Hardware:

- Internet connection to download the App.
- At least one Clinipad device per area in which forms will be digitally signed, or a means of easily sharing the devices between areas.
- Possible Clinipad devices:
  - iPad/s: version 2, 3, 4 or iPad Air (5) running at least IOS 6.
  - Android: Samsung Galaxy Note Tab 4 10.1, Samsung Galaxy Tab E, ASUS Memopad 10, ASUS Transformer TF103CX
- Wi-Fi set up in the dental practice. and each Clinipad device must be connected to the Wi-Fi.. Routers have different interfaces so the instructions will vary, but the recommendations are:
  - Use a WPA2 secured password
  - Hide your SSID
  - Allow connection from devices with known MAC address only (if practical)
- Each CliniPad device must be able to communicate back and forth with the server.

EXACT:

- The Clinipad module is available from **EX**ACT version 11.3 SP1 or later
- The Clinipad module must be registered in **EX**ACT.
- The Patient Medical History configuration must be set to "Fixed" as this is the only configuration recognised by Clinipad:
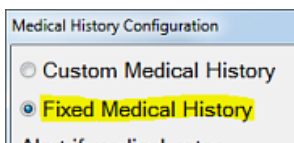
- Practitioners who use Clinipad must have access to the Clinipad.
- For ***Clinipad Signed Estimates***,
  - **EX**ACT v11.3 SP7 or later.
  - A compatible Estimate template (where the signature box has been encoded using a special PRX command) - **EX**ACT ships with default templates that can be customised.
- For Clinipad Oral Health Surveys:
  - **EX**ACT v11.3 SP7 or later.
  - Appointment arrivals workflow needs to be enabled and configured.
  - Users who will be Saving and Completing Oral Health Surveys after discussion with the patient must have the appropriate permission set in the Security settings. For example, the role of DENTIST:
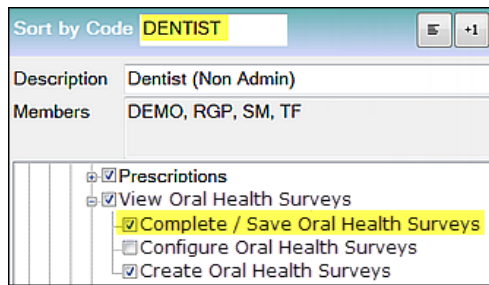
Adobe Reader:

- PDF Viewer such as the Adobe Reader on each computer from which users will view documents.
- Adobe Reader must be set as the *default PDF viewer* (this is required for verifying signed documents)

Procedures:

- By default, a responsible adult must sign on behalf of persons under 16 years of age. This default requirement can be overridden for minors who are deemed competent to sign themselves.

Additional Software

Microsoft Office applications:

Microsoft Word 2003 and Microsoft Excel 2003 or newer are required to view and create documents or to export reports and patient lists.

Anti-virus software:

Software of Excellence strongly recommends virus protection software to protect your system from the multitude of viruses on the Internet.

Firewall:

You should ensure that if you are using broadband you have a firewall installed. Your hardware supplier can recommend which system should be employed to secure and protect your system.

IMPORTANT: Software of Excellence cannot be held responsible for viruses on client systems or for data being lost due to malicious attacks from the Internet.

HTML-based browser for Help files:

By default **EX**ACT attempts to link to Web-based Help when a user requests it. This is the recommended Help format as it can be continuously updated by Software of Excellence, and the latest version is always available to users.

For users without an Internet connection, **EX**ACT will display a local version of the Help that installed with the software.

Either way, a browser is required to read the HTML based Help files. Users can either use the (required) Internet Explorer browser, or any other browser capable of reading HTML files.

See also online Using the Web Help Documentation

Notes in relation to the browser:

- Some features of the **EX**ACT user documentation depend on javascript for their operation. If your web browser security settings prohibit the use of javascript and /or ActiveX scripts, some features - such as the **Search** function - will not work. It is safe to temporarily enable these (allow blocked content to run) while using the Help documentation. If you worry about Javascript, you can optionally close any other web pages that may be open.
- If you are using Internet Explorer as your browser, and some of the text is running off the edge of the screen, click the Tools button on the IE toolbar, then choose **Compatibility View Settings** and make sure the **View all websites in Compatibility View** option checkbox is ticked.

EXACT network backups

Why are backups so important?

If your **EX**ACT system crashes, with a backup you could be up and going again within 20 minutes with minimal loss of dental practice data.

If your **EX**ACT system crashes *without* a backup you *may* be able to recover data or you may lose so much that you need to start your dental business again with no **EX**ACT database.

EXACT **backup basics**

All computers within the **EX**ACT network read from and write to the practice database, which is usually on a server computer.

Each of these networked computers, including the server itself can be configured to back up this database to a single location on its own drive or in another location that it can access.
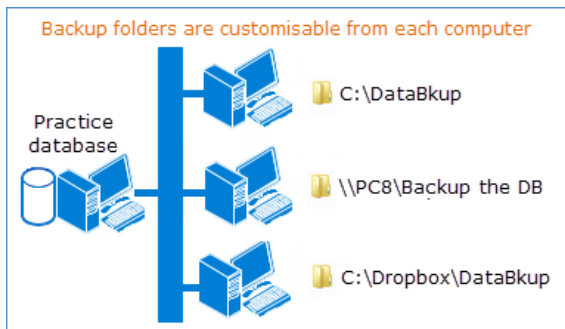
EXACT has various capabilities for backup but the dental practice can opt for additional backup strategies with IT companies, third party software, backup hardware and off site strategies.

What do you need to know to plan a backup strategy?

Please read at least these topics to gain an understanding of your backup responsibilities, **EX**ACT capabilities, options and limitations:

EXACT *backup capabilities and limitations* (on page 31)

Software of Excellence disclaimers for backup functionality (see "*SoE disclaimers for backup functionality*" on page 33)

EXACT backup capabilities and limitations

For system planning purposes be aware of **EX**ACT's backup capabilities and limitations.

Capabilities

EXACT caters for backups in the following ways:

- **One practice database, many backups.**

  EXACT can back up the practice / network database to a custom folder that is specified from each computer on the network, where the folder can be on that computer itself or in a location accessible to that computer.

- **Configure EXACT to prompt for a network (database) backup when a user exits**

  With this configuration, **EXACT** prompts each user to back up when the user exits **EXACT**. If the user selects Yes, **EXACT** backs up to the backup directory specified on the user's computer.

  See *Prompting for network backup on user system exit* (see "*Prompting for network backup on system exit*" on page 37)

- **Schedule automated network backups**

  It is possible to schedule network backups per computer by means of the Scheduler. See *Scheduling automated network backups* (on page 34)

- **Manually run a scheduled network backup**

  The Scheduler has a utility where you can run a scheduled (automated) backup with a few simple clicks.

  See *Running a scheduled backup on demand* (on page 37)

- **Identify or change the current backup directory on a computer**

  From Configure > Computer Settings... you can identify where the database is currently being backed up and you can optionally change this location.

  See *Locating or changing the* **EXACT** *backup directory* (on page 38)

- **Locate, identify and administer the Live database/s**

  EXACT installs a Server Administrator icon in the Windows toolbar. From a right-click of this icon you can locate, identify and administer the database/s in various ways. For backup purposes this is useful as it enables you to manually locate the Live database for manually copying.

  See *Locating an* **EXACT** *Live database directory* (on page 39)

- **Log in to the Backup to check backup integrity**

  EXACT makes the Backup available as a dataset (PRACTICENAME**Backup**) in the Practice dropdown menu on the Login screen, that you can log into normally to check the integrity of the data.

  Note that this backup can only be accessed from the local machine that performed the backup; it is not network accessible.

  See *Checking the Network Backup integrity* (on page 39)

Limitations

EXACT backup limitations:

- **For third party backup software, some files may fail to copy if they are being used or if they are marked as Read Only.**

  Workarounds:

  o   Ask all other users to log out before copying.

  o   If any files are marked as Read Only, right-click the filename, select Properties, and un-check the Read Only checkbox in the Attributes line.

  o   Schedule automated copies for times when all users will be logged out, and make a policy that users *must* log out before going home.

  o   For 24-hour operations such as online bookings, perform a network backup on the Server at the end of

each day from within **EXACT**, and set your primary backup software to copy this network backup rather than to copy the Live database.

- **The automated network backup overwrites itself in the backup folder**

  The network backup overwrites itself (it doesn't automatically increment the Backup name), so at any moment there is only a single network backup in the target folder. This could become problematic if the **EXACT** Live database for some reason becomes corrupted, because the next scheduled backup may then overwrite the existing backup with a corrupt version of the database, leaving no healthy version of the database in the backup folder.

  Workarounds:

  o   Institute measures (perhaps via third party software) to automatically backup the network backup.

  o   If you have multiple computers on your network, schedule them to backup on different weekdays so that within the practice network you have successive weekday backups.

- **No backup restoration by software means**

  EXACT has no software function to restore a backup.

  Recommended Workaround: The restoration procedure is best managed by an IT department or company, in consultation with Software of Excellence Support Desk.

  Workaround for the technically competent: You can manually overwrite the database (after making a copy) from backup.

  See *(CAUTION) Restoring a database from a backup* (on page 40)

SoE disclaimers for backup functionality

IMPORTANT:

The practice and / or its associated IT contractor is responsible for configuring, maintaining and testing a backup strategy.

Software of Excellence cannot be held responsible for any negligence on the part of the practice.

The Software of Excellence Support Team can possibly assist with third party backup hardware and software, but are not trained in the varied and numerous backup packages, so the responsibility for third party backup technology remains with the dental practice and / or its IT supplier.

Software of Excellence is not responsible for ensuring that backup tapes are regularly checked for functional operation – this remains the responsibility of the dental practice and / or its associated IT services.

Software of Excellence takes no responsibility for any issues arising from a manual database restoration, and it is strongly recommended that you contact the Support Desk for help if you need to restore a database from a backup.

Essential and optional backup content

Essential backups

It is essential that you backup your **EXACT** database files and folders to keep your practice down time to a minimum after a server failure.

Optional backups

The backup of any other files or folders is at the discretion of the practice, although it is highly recommended that you backup any folders in which you store data for other applications such as **EX**AMINE Pro, X-ray software (images), important Microsoft Word and Excel documents.

> *NOTE:* If you have a separate backup plan with your IT company it is advisable to contact them with regard to backups.

Recommendations for network backups

These include

- Perform network backups *on at least two computers on different days* so that you have a clone of the data copied to another hard drive for extra redundancy.
- Complete a network backup on your server at the end of each day.
- Third party backup software cannot copy some **EX**ACT files while they are in use. Either set this software to copy your network database after working hours, or, for systems that utilise 24-hour operations (such as online bookings), configure this software to copy the network *backup* data and not the *Live* database.

Scheduling automated network backups

Overview

EXACT has a Scheduler utility (**File** > **Scheduler...**) from which you can configure any computer on the network to back up the single network database to a specified folder on that computer itself or on the network.

In other words, you can optionally back up the single practice database to multiple locations on schedule.
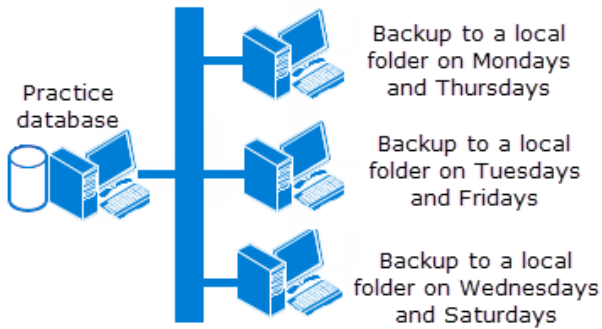
Don't just "turn everything on"

Note that

- Each backup overwrites the last backup in a folder; it does not increment.
- Each computer can only point at one backup folder.

... so if you simply set each computer to back up every day, the entire practice will only ever have one day backed up!

Option - stagger your backups so that you have multiple days backed up

If you have multiple computers you have the option to stagger your backups in many ways.

Example: the practice has configured their three computers to each only back up on two days of the week, so the practice always has three sequential days of backups:

Practice database

Backup to a local folder on Mondays and Thursdays

Backup to a local folder on Tuesdays and Fridays

Backup to a local folder on Wednesdays and Saturdays

Option – use third party software to copy and cycle the network backup through a series of folders

Setup a series of folders (for example 1 > 2 > 3 > 4 > 5). Configure the third party software to copy the **EX**ACT backup each day and cycle it sequentially through these folders so that the practice always has at least the last 5 days of backups.

See also **EX**ACT *backup capabilities and limitations* (on page 31)

To back up the network database from the local computer

Open the Scheduler (for example, **File** > **Scheduler...**)

Follow the same steps as for Creating a new Scheduler event, but the screens will differ slightly to cater for the backup requirement:

Next>

Next>

Schedule Event Setup Wizard
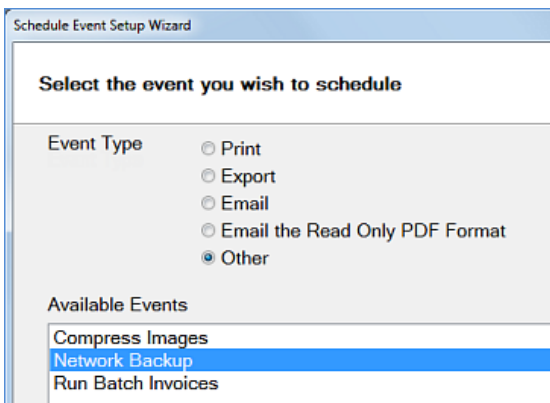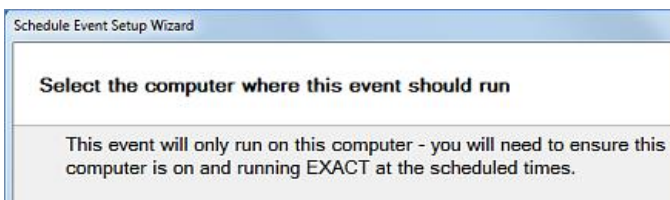
Select the repeat cycle of the event

Select the time and frequency that you wish this event to run

Time   11:40am

◉ Once Only

    Date   25/07/2013

○ Weekly

    Days   M☐ T☐ W☐ T☐ F☐ S☐ S☐

○ Monthly

    Day of the Month   1

    An entry of '30' days will execute the event on the last day of the month, irrespective of whether that is the 28th, 29th, 30th or 31st.

Finish.

Prompting for network backup on system exit

Each computer with an **EXACT** installation can be configured to prompt users for a network (**EXACT** database) backup when the users attempt to exit **EXACT**.

The backup is to the backup folder specified in **Configure > Computer Settings...**

Users can optionally decline the backup.

To prompt for network backup on system exit

Under **Configure > Computer Settings...**

1. Tick the checkbox for **Prompt for Backup on Exit.**

2. Select the **Save button**:
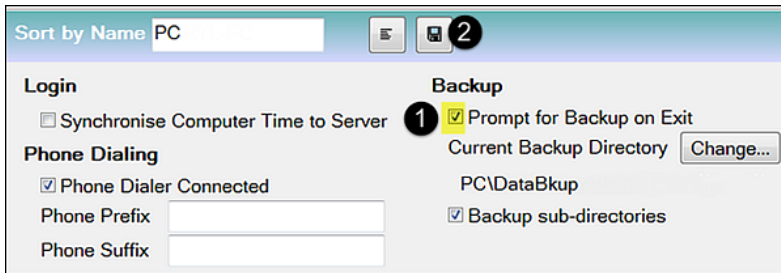
3. Repeat this procedure for each computer.

   When users attempt to exit **EXACT** they will see this message:
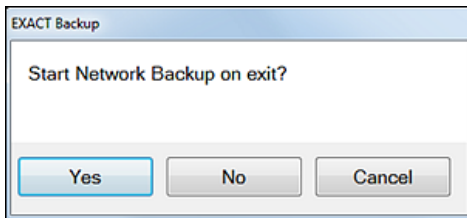
   If they select **Yes**, they will see the system running the backup:
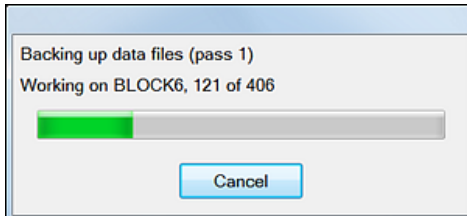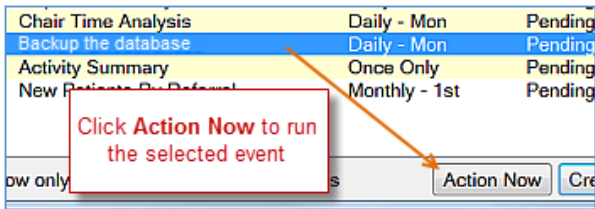


Running a scheduled backup on demand

If the *Scheduler has been configured to automatically back up the practice database* (see "*Scheduling automated network backups*" on page 34), users can optionally run the backup on demand.

To manually run a scheduled backup

1. Within **EXACT** select **File > Scheduler...**

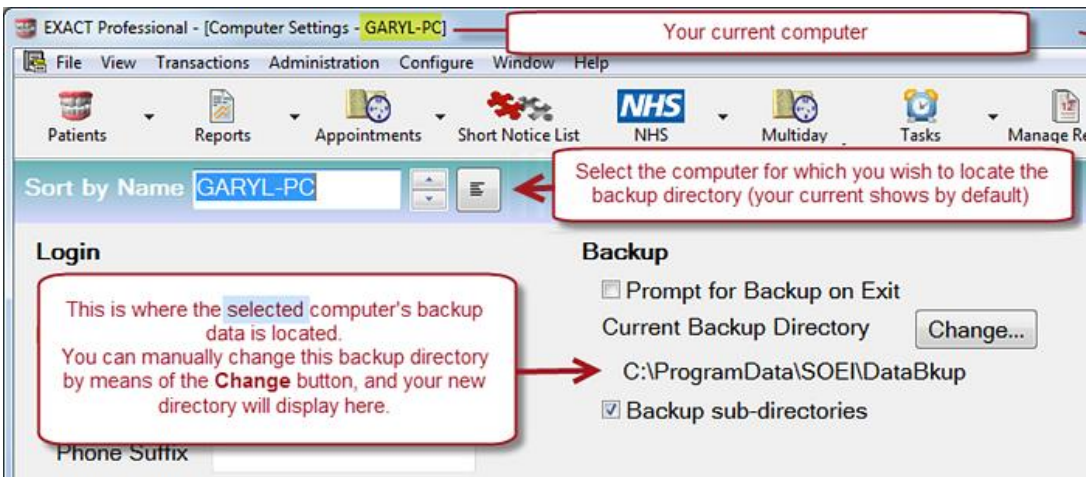2. Select the Backup Event and then select **Action Now**:

You'll see the system running the backup:
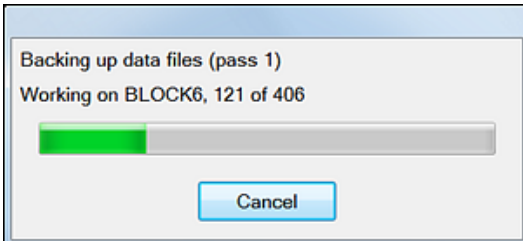
Locating or changing the EXACT backup directory

To locate or change the *EX**ACT** **Backup Directory***

1. Select **Configure** > **Computer Settings...** to display the Computer Settings screen:

2. In the Computer Settings screen, select a computer name (your current computer name displays by default)

3. The **currently configured backup path** displays.

4. You can optionally change this location by means of the **Change...** button, in which case the new backup path will then display.

Locating an EXACT Live database directory

To locate an EXACT Live database directory from the toolbar

The simplest way is to run the Server Administrator menu from your toolbar.
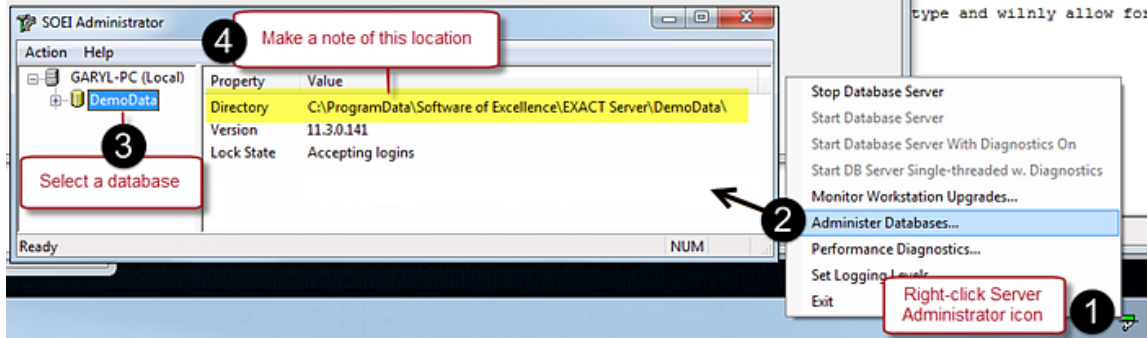
1. Right-click the Server Administrator icon ![icon] in your toolbar.

2. Select **Administer Databases** from the popup menu.

3. If you have multiple databases listed in the SOEI Administrator screen left pane, select the appropriate database.

4. Make a note of the **Directory** location that then displays in the right pane.

Checking the Network Backup integrity

EXACT makes the Backup available as a dataset (DATABASENAME**Backup**) in the Practice dropdown menu on the Login screen, that you can log into normally to check the integrity of the data.

IMPORTANT: This backup can only be accessed from the local machine that performed the backup; it is not network accessible.

To check the integrity / correctness of the Network Backup

1. Log in to the Backup dataset rather than the practice data by selecting the practice backup in the Login screen:

Across the screen you will see a clear indication that you have logged into a BACKUP:

IMPORTANT: Once you navigate away from this initial screen there is no longer any indication that you are in a Backup dataset, so you must log out of the Backup dataset as soon as possible to ensure that you don't perform Live practice procedures in the wrong dataset.

2. Choose some records that you know have been recently updated and check that they are correct.

3. Log out of this Backup dataset (do not leave it open for another user!)

4. ⚠ **CAUTION: EX**ACT recalls the last dataset that you logged into, so that when you log in it will automatically select the last dataset.

   As a safety measure to guard against you or the next user logging into the wrong (Backup) dataset, log back into your Live dataset, being sure to select **Set new default login**:


(CAUTION) Restoring a database from a backup

To restore a database from a backup

CAUTION: Only follow this procedure if you are technically competent. It is strongly recommended that you contact the Support Desk for help if you need to restore a database from a backup. Software of Excellence takes no responsibility for any issues arising from a manual database restoration!

1. *Locate your Live database* (see "*Locating an EXACT Live database directory*" on page 39) and for safety, make a copy of it.

2. Right-click the Server Administrator icon in your toolbar, and from the popup menu select **Stop Database Server**:
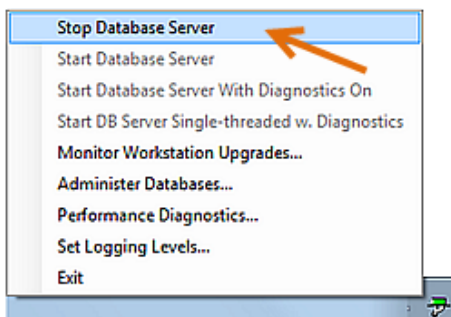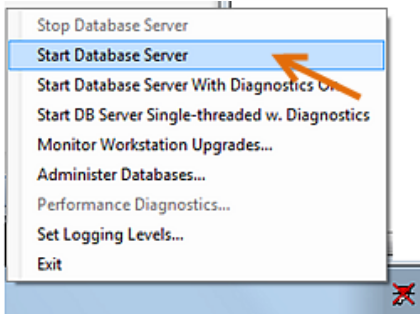

3. Confirm that the database has stopped by checking that the icon now displays a red "**X**":

4. *Locate your equivalent backup* (see "*Locating or changing the EXACT backup directory*" on page 38).

5. Check that you do indeed have a copy of the Live database, then **delete** the database content in the Live

directory .

6. Copy the backup content and paste to the now empty Live directory (do not attempt to overwrite existing content; the directory must be empty)

7. Right-click the *stopped* Server Administrator icon in the toolbar, and from the popup menu select **Start Database Server**:

```
Stop Database Server
Start Database Server
Start Database Server With Diagnostics O...
Start DB Server Single-threaded w. Diagnostics
Monitor Workstation Upgrades...
Administer Databases...
Performance Diagnostics...
Set Logging Levels...
Exit
```

8. Confirm that the database has started by checking that the icon is now green:

9. Run **EXACT** to check that the database is working.

Backup hardware devices

External USB Hard Drives:

Any external USB hard Drive can be used as a backup device.

Other:

Other primary backup devices are available, including the following tape drives:

- Sony AIT (160 Gb / 320 Gb)
- Iomega REV
- DDS/DAT (DDS3 / DDS4)
- DLT
- LTO (HP 400Gb)

Compatibility:

Please ensure that your device is on the Microsoft Windows operating system and hardware compatibility lists which can be found at ***www.microsoft.com/hcl www.microsoft.com/hcl***.

Dental Practice is responsible:

IMPORTANT:

The practice and / or its associated IT contractor is responsible for configuring, maintaining and testing a backup strategy.

The Software of Excellence Support Team can possibly assist with third party backup hardware and software, but are not trained in the varied and numerous backup packages, so the responsibility for third party backup

Acceptable Backup Media

(Please refer to your IT Supplier for all issues relating to Backup hardware and software)

Back Up Media		
• Hard Drive	• IOMEGA Rev	• DDS3
• Any USB External Hard Drive	• DLT IV?	• DDS4
• CD	• Peerless	• Travan 10/20
• CDR/W	• Travan 4/8	• Multispin 4x CD
• DVD	• Travan 20/40	• Onstream 30G
• DVDR/W	• Memory Stick	• Onstream 60G
• ZIP 100 / 250 / 750	• PD Disk	• Syquest 1.5G

Backup Software		
• Mw Backup	• Backup EXEC V4	• BackUpMyPC
• CP_Backup	• Backup EXEC 2f or lower	• Retrospect Backup
• IOMEGA Backup	• Backup EXEC 10.0 for Servers	• Avantrix Backup Plus v7 and lower
• IOMEGA One Touch	• Windows Backup for Windows 2000	• ArcServe
• IOMEGA Rev	• Windows 2003 Server Backup	• Nero 6+

Backup periods and number of tapes

Bi-weekly backups:

We recommend a two-week rotation of tapes. For example:
- For a practice working a five-day week, ten tapes are required.
- For a practice working a six-day week, twelve tapes are required.

Additional monthly backups:

In addition to this we recommend that you consider a monthly backup rotating over three months – an additional three tapes.

Tape formatting and checking

Tapes must be formatted before use, and checked on a regular basis in order to ensure they are:

- In operational order
- Backing up the relevant data
- Fully restorable

More information about backup strategies can be obtained from your hardware supplier.

Wide Area Networks

WAN configurations are only supported in the following environments:

- Microsoft Terminal Services
- Citrix Metaframe

For more information about WANs please refer to *the network diagram* (see "*Recommended Network Configuration*" on page 44) in the Hardware Configuration section.

Hardware Configuration

This section has hardware requirements and recommendations.

Network speed

Recommended network speed of 1 Gigabits per second:

We recommend that your network runs at 1 Gigabits per second speed.

If any network component cannot handle 1 Gigabits per second throughput, it will reduce network speed for associated devices and may incur performance problems for users.

If your network is slower than 1Gb:

On workstations where clients are doing less resource intensive tasks such as charting, slower network speeds should not see a performance hit. However performance problems will be noticeable when attempting more intensive operations such as generating reports.

General guide for acceptable performance:

Basic usage such as charting requires at least 100 Megabits per second network speeds.

Viewing images/xrays requires at least 200 Megabits per second network speeds.

Generating reports requires 1 Gigabits per second network speeds.

Recommended Network Configuration

This is the recommended network configuration, including internal IP ranges for devices.

The network should preferably use at least CAT5 cabling, which runs at up to 100Mbps, and we recommend the more recent CAT5e (enhanced), which can run at 1000Mbps.

IMPORTANT: Wireless networks and Virtual Private Networks (VPNs) are not approved or supported.
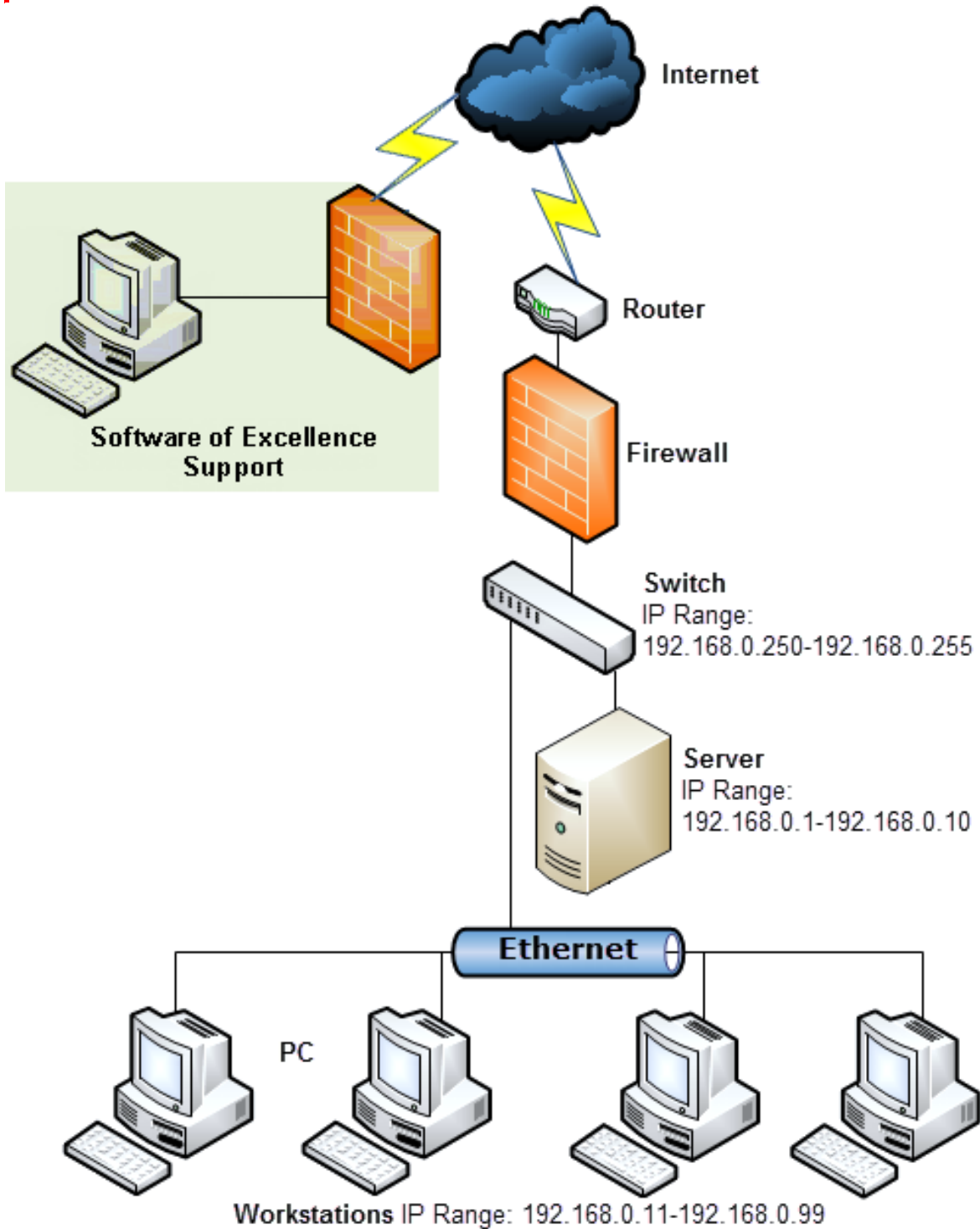
Broadband

Besides your normal operations, the broadband connection is also for supporting your **EX**ACT system by means of Bomgar software.

See also: *Remote Access Software* (see "*Remote Access Software - Bomgar and VNC*" on page 27)

> **NOTE:** In the UK the NHSBSA DSD and Central Services Agency now have in place the necessary technology to utilise Broadband and ISDN connections.

Bomgar ports and exceptions

To enable us to connect to your system using Bomgar the following ports need to be opened and the following exceptions need to be added to your firewall / antivirus.

Ports:

80
443
8200

Exceptions:

bomgar-scc-{uid}.exe
bomgar-scc.exe
bomgar-pac-{uid}.exe
bomgar-pac.exe

> **NOTE:** We do not recommend AOL if you are using The EXDOCe module.

Add-on Devices

Please ensure that any other devices you add to your system are on the Microsoft Windows operating system and hardware compatibility lists, which can be found at *www.microsoft.com/hcl* (*http://www.microsoft.com/hcl*)

Example of incompatible devices:

Some older technology ISA capture cards such as the older Trophy\Kodak capture cards are incompatible with Windows XP.

Digital Imaging

With our new **EX**AMINE Pro we can now support many Digital Imaging packages.

Please contact your Regional Business manager or the Main Office for more information on supported Imaging packages.

Specific hardware requirements for EXAMINE Pro

Please note these specific requirements if you intend installing **EX**AMINE Pro:

- Windows 2000 is not supported.
- Server RAM Requirement is minimum of 4Gb.
- Workstation RAM Requirement is minimum of 4Gb.
- If you are purchasing the XIOS Sensor or any other Xray equipment that uses the Sirona database the server should be installed with a minimum of 4 Gb RAM.
- If you are using Trophy or Kodak branded equipment, there are a number of versions of the Kodak Imaging software shipped with these products. We have tested a number of these with EXAMINE pro and we currently support the following versions:

  V6.1.7.0, V6.0.5.5, V6.3.7, V6.4.4.0, V6.8.2.0A, V6.8.4.1A, V6.8.6.0, V6.10.7.3A, V6.11.6.2A, V6.12.5.2B, V6.12.11.0A, V6.12.15.0A.

  If you are unsure about what version you have or require for your equipment please discuss with your Sales contact.
- Ideally, all X-ray/Imaging equipment should be configured and working with the manufacturer's software before Examine Pro is installed.
- Digital Images can take significant storage space; we recommend that you purchase the largest drive available from your supplier to ensure you have enough space.
- The intensive graphic usage may cause performance issues, in which case it will help to install a video card that supports hardware acceleration.
- **EX**AMINE Pro digital imaging software supports 64 bit operating systems, however you will need to check with your digital imaging hardware supplier whether your hardware has the necessary drivers for 64 bit operating systems.
- **EX**AMINE Pro requires a minimum resolution of 1280 x 1024 to operate correctly. Anything below this and you may not be able to see all of the programme.

Digital imaging storage requirements:

- **EX**AMINE Pro does not support the use of Network Storage Devices (NAS Drive); the data therefore will need to be stored on a local **Hard Drive or Solid State Drive on the Dental Server**. This can however be a separate drive from the EXACT Data. ***This is necessary to reduce the likelihood of poor software performance relating to compromised network speed***.
- Hard drive space for imaging should be 160GB or more. This will depend on the quantity of Images the practice will be taking.
- A suitable backup device will be needed. See *Backups* (see "*EXACT network backups*" on page 31).

Installation Considerations

It is *really important* that *all of* your hardware is installed and configured by the time agreed with Software of Excellence.

This will ensure that your installation runs smoothly and that the training starts on time.

Failure to do so could result in your installation and training being rescheduled and associated costs could then be incurred by the practice.

Power requirements

Sufficient power should be available and in close proximity to each workstation and the server. Typically each workstation requires three or four power sockets, which should be protected by at least a surge protector.

It is recommended that at least the server is protected by a UPS. This will protect the system in the event of a spike in the power or a total power failure giving you time to safely shutdown, helping prevent data corruption.

Devices that will need power:

- Computer
- Monitor
- Printer
- Scanner
- Router
- Network Switches
- Intra-Oral Camera
- Jet Direct Print Server
- All Xray Equipment

Installation on an existing system's infrastructure

If a company other than MicroMinder (UK) is to be involved in migrating your current dental system to **EX**ACT they should speak to Software of Excellence's support staff to confirm if **EX**ACT will run on your existing infrastructure.

You will **not** be able to run **EX**ACT on the existing infrastructure for any of these systems:

- Dental Systems Design (DSD)
- Clockwork DOS (Single or Multi)
- Advance 4
- Advance 6
- Practice Manager for Windows (PMW)

More information about this is available from our Support Desk.

> **NOTE:** It is highly recommended that your existing server remains in place as a reference system post conversion to **EX**ACT.

Dental practice owner and IT hardware supplier Sign Off

Please request your dental practice owner and your IT hardware supplier to sign and date this page, then please scan the page and email it to Software of Excellence.

Dental Practice Name:	
Practice telephone:	
Practice Postcode:	
IT Hardware Supplier Company:	
Contact Name:	
Contact Telephone :	

Signed confirmation:

I confirm that our system meets at least the minimum system requirements specified in this document.

I understand that failing to meet the *recommended* specification may result in performance-related issues.

Hardware supplier: _____ Date: _____

Practice owner: _____ Date: _____

Optional Notes:

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