EXACT v11
System Requirements

Version 3.6, Updated December 2014
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## IMPORTANT NOTES

- **Signature required:**
  Please request that your hardware supplier sign and return page 33 (CLIENT HARDWARE SUPPLIER SIGN OFF) to Software of Excellence prior to your EXACT software installation date. Software of Excellence will then prepare for the EXACT software installation on the understanding that the IT infrastructure is “EXACT-ready”.

- **Hardware setup deadline:**
  All of your hardware needs to be installed and configured by the time agreed with Software of Excellence for EXACT software installation and configuration. This will ensure that
  - Your installation runs smoothly,
  - The training starts on time, and
  - There are no associated costs incurred by the practice for rescheduling the installation and/or training.

- **Database on its own drive:** For effective system performance, the EXACT database should be on a separate physical drive to Windows and the program files on the EXACT server, unless you use a SSD (Solid State Drive).

- **Not officially supported, but may function:**
  - STANDARD versions of Windows Server 2011 and 2012 are not officially supported.
  - MAC machines running Windows Parallel session will probably run EXACT, but are not supported.
  - Microsoft XP users are urged to update their operating system as Microsoft has formally ended support for Windows XP from 8 April 2014 and the consequences include a lack of patches for Windows security vulnerabilities.

- **Not supported / supported with conditions:**
  - Please consult with Software of Excellence when planning installations with more than 50 EXACT licenses.
  - Wireless devices are not approved or supported.
  - No Home edition of any operating system is supported.
  - Linux Operating Systems are not supported.
  - EXACT 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. Although we support the older Windows XP, Vista, and Server 2003 software, we do not include them in our recommendations, which are based on best performance and future support.

- **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.
EXACT system minimum requirements, recommendations and configuration

- **Screen resolution**: EXACT minimum resolution is 1024 x 768 but some features and modules within EXACT require a widescreen monitor, for which we recommend screens capable of 1280 x 1024 and above.

- **Examine Pro module**:  
  - The Examine Pro module has specific advanced hardware requirements affecting both server and workstations.  
  - Examine 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** is required for EXACT, 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 EXACT network users require read/write access to these folders.  
  - The EXACT 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 EXACT, 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 EXACT 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 EXACT, on the Server at the end of the day. You can then set your primary backup to copy the network backup.

- **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).
EXACT system minimum requirements, recommendations and configuration

- 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 EXACT database on a separate physical drive to Windows and the program files on the EXACT server, unless you use SSDs.
  - Live Anti-virus file scanning frequently causes network performance issues. In this case add an exception to the Anti-virus programme.
  - Use a 1Gb network where every component of the network can handle 1Gb throughput.
  - Use SSDs (solid state drives) on servers, with 20% fault recovery.
  - If using intensive graphics such as with ExaminePro use a graphics card with hardware acceleration.

- Remote-access software:
  Software of Excellence uses Bomgar (www.Bomgar.com) and VNC to remote-support our clients via clients’ broadband Internet connection.
  Bomgar requires no software installed at the client end, but does require ports and exceptions configuration (see Ports and Exceptions on page 30).
  VNC needs to be installed on all workstations and the server prior to EXACT installation and/or conversion to EXACT. Microsoft Word 2003 and Microsoft Excel 2003 or newer 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

- Examine Pro has specific hardware requirements (see page 30) affecting both server and workstations.

1. YOUR HARDWARE SUPPLIER

Choosing your hardware and hardware vendor for your computerised dental system is very important. This document outlines our recommendations for the hardware you need to ensure that your system operates correctly and efficiently.

When selecting your hardware vendor you will require a service contract to correct any problems that may arise. You will be relying on this system to run your business so downtime for any reason must be avoided at all cost. Key points that you may wish to consider before deciding which company to contract are:
  - Should the system fail, what is the response time for an engineer to arrive on site?
  - Once they have 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 they correct these, or only support the physical hardware of the individual PC’s?
  - If your computer failed, and has been removed from site, would they replace it with a temporary machine?
  - Consider what will happen to this agreement in the second and subsequent years, a warranty replacement arrangement is not enough. The contract will need to be extendable, and should continue to support the system and all its functions while the system is to be relied upon rather than just supporting its components.
  - Will they check your backups on a regular basis?

Software of Excellence is committed to assisting you and your hardware vendors in installing your hardware.
Please contact your Regional Business manager for any assistance.

1.1. IT Infrastructure Verification before installation

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 page 33 (CLIENT HARDWARE SUPPLIER SIGN OFF) to Software of Excellence prior to your EXACT software installation date.

2. HARDWARE RECOMMENDATIONS

This section outlines hardware that has been tested and approved by Software of Excellence. Devices not on the approved list will not be guaranteed to work with EXACT Dental.

Software of Excellence can test devices for you, but there will be a charge for any testing (please contact SOE Support for current charges).

Please note that any courier charges related to the collection or delivery of your device will be for your account.

The recommendations below are for use with EXACT Version 11. If you are running a higher version of EXACT please contact the support team for an updated version of this document.

2.1. Important notes about Hardware requirements

- Please ensure the latest service packs for all operating systems are installed.
- EXACT minimum resolution is 1024 x 768 (at lower resolutions the screen is truncated). However, some features within EXACT will require a Widescreen monitor, for which we recommend screens capable of 1280 x 1024 and above.
- Examine 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 drivers for 64 bit operating systems.
- Wireless devices are not approved or officially supported.
- Virtual Private Networks (VPNs) are not approved or officially supported.
- No Home edition of any operating system is supported by Software of Excellence.
- Although we support Windows XP, Vista, and Server 2003, we do not include them in our recommendations, which are based on best performance and future support. Microsoft XP users are urged to update their operating system as Microsoft has formally ended support for Windows XP from 8 April 2014 and the consequences include a lack of patches for Windows security vulnerabilities.
- For effective system performance, the EXACT database should be on a separate physical drive to Windows and the program files on the EXACT server.
2.2. PC Specifications

2.2.1. Specifications for a non-dedicated server, max 5 workstations

The requirements below are for a system that has a NON-Dedicated server.

Specifications are affected by whether you have an environment with or without an imaging system.

These recommendations are for a non-dedicated Server with digital imaging with a maximum of 4 workstations,

-or-

For a non-dedicated Server without digital imaging with a maximum of 5 workstations.

### Requirements for Non-dedicated Server

<table>
<thead>
<tr>
<th>Component</th>
<th>MINIMUM</th>
<th>RECOMMENDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System</td>
<td>Windows 7¹ 32 bit or 64 bit²</td>
<td>Windows Server 2008 64 bit²</td>
</tr>
<tr>
<td>CPU</td>
<td>Intel Dual Core 1.8 GHz</td>
<td>i7 or equivalent processor</td>
</tr>
<tr>
<td>RAM</td>
<td>4GB</td>
<td>8GB</td>
</tr>
<tr>
<td>HDD</td>
<td>320GB with secondary HDD to store regular database backups</td>
<td>SSD Pro 250GB to 500GB with 20% fault recovery</td>
</tr>
<tr>
<td>Graphics Card</td>
<td>Optional, but if using intensive graphics such as with ExaminePro, a video card that supports hardware acceleration.</td>
<td>A video card that supports hardware acceleration.</td>
</tr>
<tr>
<td>CD/DVD DRIVE</td>
<td>8x Speed or above</td>
<td>Optional</td>
</tr>
</tbody>
</table>

### Requirements for Workstations

<table>
<thead>
<tr>
<th>Component</th>
<th>MINIMUM</th>
<th>RECOMMENDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System</td>
<td>Windows 7¹ 32 bit or 64 bit²</td>
<td>Windows 7 64 bit²</td>
</tr>
<tr>
<td>CPU</td>
<td>Intel Dual Core 1.8 GHz</td>
<td>i5 or equivalent processor</td>
</tr>
<tr>
<td>RAM</td>
<td>4GB</td>
<td>4GB</td>
</tr>
<tr>
<td>HDD</td>
<td>320GB</td>
<td>SSD 250GB with 20% fault recovery</td>
</tr>
<tr>
<td>Graphics Card</td>
<td>Optional, but if using intensive graphics such as with ExaminePro, a video card that supports hardware acceleration.</td>
<td>A video card that supports hardware acceleration.</td>
</tr>
<tr>
<td>CD/DVD DRIVE</td>
<td>8x Speed or above</td>
<td>Optional</td>
</tr>
</tbody>
</table>

¹ We also support Windows XP, Vista, Server 2003 however our recommendations are based on best performance and future support.

² No Home edition of any operating system is supported by Software of Excellence.
2.2.2. Specifications for a dedicated server, max 7 workstations

Dedicated Server (with or without digital imaging)

The specifications below are for a system that has a dedicated server with a maximum of 7 workstations whether you have digital imaging or not.

<table>
<thead>
<tr>
<th>Component</th>
<th>MINIMUM</th>
<th>RECOMMENDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System</td>
<td>Windows 7(^1) 32 bit or 64 bit(^2)</td>
<td>Windows Server 2008 64 bit(^2)</td>
</tr>
<tr>
<td>CPU</td>
<td>Intel i5 core or AMD Phenom 2 X4 (Black Editions)</td>
<td>i7 or above equivalent processor</td>
</tr>
<tr>
<td>RAM</td>
<td>3GB (4GB if 64 bit operating system)</td>
<td>8GB to 16GB</td>
</tr>
<tr>
<td>HDD</td>
<td>320GB with secondary HDD to store regular database backups</td>
<td>SSD 500GB with 20% fault recovery.</td>
</tr>
<tr>
<td>Graphics Card</td>
<td>Optional, but if using intensive graphics such as with ExaminePro, a video card that supports hardware acceleration.</td>
<td>A video card that supports hardware acceleration.</td>
</tr>
<tr>
<td>CD/DVD DRIVE</td>
<td>8x Speed or above</td>
<td>Optional</td>
</tr>
</tbody>
</table>

Requirements for Workstations

<table>
<thead>
<tr>
<th>Component</th>
<th>MINIMUM</th>
<th>RECOMMENDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System</td>
<td>Windows 7(^1) 32 bit or 64 bit(^2)</td>
<td>Windows 7 64 bit(^2)</td>
</tr>
<tr>
<td>CPU</td>
<td>Intel Dual Core 2.6 GHz</td>
<td>i5 or equivalent processor</td>
</tr>
<tr>
<td>RAM</td>
<td>4GB</td>
<td>4GB</td>
</tr>
<tr>
<td>HDD</td>
<td>320GB</td>
<td>SSD 250GB with 20% fault recovery</td>
</tr>
<tr>
<td>Graphics Card</td>
<td>Optional, but if using intensive graphics such as with ExaminePro, a video card that supports hardware acceleration.</td>
<td>A video card that supports hardware acceleration.</td>
</tr>
<tr>
<td>CD/DVD DRIVE</td>
<td>8x Speed or above</td>
<td>Optional</td>
</tr>
</tbody>
</table>

\(^1\) We also support Windows XP, Vista, Server 2003 however our recommendations are based on best performance and future support.

\(^2\) No Home edition of any operating system is supported by Software of Excellence.
2.2.3. Specifications for a dedicated server with 8 or more Workstations

**NOTE:** Please consult with Software of Excellence when planning installations with more than 50 EXACT licenses.

### Dedicated Server (with or without digital imaging)

**8+ Workstations**

<table>
<thead>
<tr>
<th>Component</th>
<th>MINIMUM</th>
<th>RECOMMENDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System</td>
<td>Windows Server 2008 R2 ¹ 64 bit</td>
<td>Windows Server 2012 64 bit²</td>
</tr>
<tr>
<td>CPU</td>
<td>Intel Xeon or i7</td>
<td>i7 or above equivalent processor</td>
</tr>
<tr>
<td>RAM</td>
<td>4GB</td>
<td>16GB</td>
</tr>
<tr>
<td>HDD</td>
<td>320GB with secondary HDD to store regular database backups</td>
<td>SSD 500GB with 20% fault recovery.</td>
</tr>
<tr>
<td>Graphics Card</td>
<td>Optional, but if using intensive graphics such as with ExaminePro, a video card that supports hardware acceleration.</td>
<td>A video card that supports hardware acceleration.</td>
</tr>
<tr>
<td>CD/DVD DRIVE</td>
<td>8x Speed or above</td>
<td>Optional</td>
</tr>
</tbody>
</table>

### Requirements for Workstations

<table>
<thead>
<tr>
<th>Component</th>
<th>MINIMUM</th>
<th>RECOMMENDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System</td>
<td>Windows 7² 32 bit or 64 bit²</td>
<td>Windows 7 64 bit²</td>
</tr>
<tr>
<td>CPU</td>
<td>Intel Dual Core 2.6 GHz</td>
<td>i5 or equivalent processor</td>
</tr>
<tr>
<td>RAM</td>
<td>4GB</td>
<td>4GB</td>
</tr>
<tr>
<td>HDD</td>
<td>320GB</td>
<td>SSD 250GB with 20% fault recovery.</td>
</tr>
<tr>
<td>Graphics Card</td>
<td>Optional, but if using intensive graphics such as with ExaminePro, a video card that supports hardware acceleration.</td>
<td>A video card that supports hardware acceleration.</td>
</tr>
<tr>
<td>CD/DVD DRIVE</td>
<td>8x Speed or above</td>
<td>Optional</td>
</tr>
</tbody>
</table>

¹ We also support Windows XP, Vista, Server 2003 however our recommendations are based on best performance and future support.

² No Home edition of any operating system is supported by Software of Excellence.
2.3. Printers and Additional Hardware

While Lexmark and Canon printers work within EXACT it has been seen that these are very slow across the network.

Printer drivers should be installed on all workstations that will need to print. It is your responsibility to ensure that you have the latest drivers installed for your printer. 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.

If the printers work within Windows then during the install of EXACT the printing setup will take less time.

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

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.

<table>
<thead>
<tr>
<th>Peripherals</th>
<th>Type</th>
<th>Make</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour Inkjet Printers</td>
<td>Hewlett Packard</td>
<td>6500 All in One (Printer, Scanner, Copier, Fax)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hewlett Packard</td>
<td>6000 Colour inkjet printer</td>
<td></td>
</tr>
<tr>
<td>Mono Laser Printers</td>
<td>Hewlett Packard</td>
<td>Laserjet 1102w</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hewlett Packard</td>
<td>Laserjet 1606DN</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hewlett Packard</td>
<td>Laserjet P2055DN</td>
<td></td>
</tr>
<tr>
<td>Colour Laser Printer</td>
<td>Hewlett Packard</td>
<td>CP1525n (Required for sites in the Republic of Ireland who need to print PRSI forms)</td>
<td></td>
</tr>
<tr>
<td>Appointment Card Printers</td>
<td>Zebra</td>
<td>LP2844</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Zebra</td>
<td>GK420 DT (Special Thermal cards required)</td>
<td></td>
</tr>
<tr>
<td>Scanners¹</td>
<td>Keyscan</td>
<td>Keyboard Scanner</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Epson</td>
<td>V330</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Epson</td>
<td>V750</td>
<td></td>
</tr>
</tbody>
</table>

¹ Scanners must be Twain compatible to work with EXACT TM
3. SYSTEM CONFIGURATION

As with all applications 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 mandatory but it sometimes causes problems elsewhere). A good example of a server name is ‘SERVER’.

EXACT reads from, and writes to, a network share on the server. It is therefore 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 also have read/write access.

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).

3.1. 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.

**Windows XP Professional SP3**

Microsoft XP users are urged to update their operating system as Microsoft has formally ended support for Windows XP from 8 April 2014 and the consequences include a lack of patches for Windows security vulnerabilities.

Latest Service Pack as recommended by Microsoft

NTFS – Required

Client Usernames and Passwords Configured in User Manager

**Windows Vista 32 bit or 64 bit**

Vista Business

Vista Ultimate

NTFS – Required

Client Usernames and Passwords Configured in User Manager

**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
EXACT system minimum requirements, recommendations and configuration

**Windows 2003 Server \ 2003 Small Business Server 32 bit or 64 bit**
- 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
4. BACKUPS

Why are backups so important?

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

If your EXACT 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 EXACT database.

EXACT backup basics

All computers within the EXACT 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.

Backup folders are customisable from each computer

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, EXACT capabilities, options and limitations:

EXACT backup capabilities and limitations (on page 15)

Software of Excellence disclaimers for backup functionality (see "SoE disclaimers for backup functionality" on page 16)
4.1. EXACT backup capabilities and limitations

For system planning purposes be aware of EXACT’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 page 20)

- 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 17)

- 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 21)

- 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 21)

- 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 22)

- Log in to the Backup to check backup integrity
  EXACT makes the Backup available as a dataset (DATABASENAMEBackup) in the Practice dropdown menu on the Login screen, that you can log into normally to check the integrity of the data. Note that it can only be accessed from the local machine that performed the Backup; it is not accessible from the network.
  See "Checking the Network Backup integrity" (on page 23)

Limitations

EXACT has the following 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:
EXACT system minimum requirements, recommendations and configuration

- Ask all users to log out before copying the database.
- 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.
- Schedule automated copies for times when all users will be logged out, and make a policy that users must log out before going home.
- 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 anytime 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:
- Institute measures (perhaps via third party software) to automatically backup the network backup.
- 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 24)

4.2. 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, nor for restoration from these files – 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.
4.3. 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 EXAMINE 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.

4.4. Network backup recommendations

- 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 EXACT 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.

4.5. 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:
In this example the practice has spread their backups across three computers, and those computers only back up on two days of the week each, so the practice always has three sequential days of backups:

![Backup diagram]

**Option – use third party software to cycle the 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 EXACT 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 EXACT *backup capabilities and limitations* (on page 15)

*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:

![Scheduler setup wizard]

**NOTE:** From v11 the network backup can run with EXACT closed.
Select the repeat cycle of the event

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

- **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.
4.6. 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, and
2. Select the Save button:

![Backup Setting](image)

When users attempt to exit EXACT they will see this message:

![Backup Confirmation](image)

If they select Yes, they will see the system running the backup:

![Backup Progress](image)
4.7. 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 17), 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:

   ![Click Action Now to run the selected event]

   You will see the system running the backup:

   ![Backup process in progress]

4.8. Locating or changing the EXACT backup directory

To locate or change the EXACT Backup Directory
1. Select Configure > Computer Settings... to display the Computer Settings screen:

   ![Computer Settings screen]

   This is where the selected computer's backup data is located. You can manually change this backup directory by means of the Change button, and your new directory will display here.

2. In the Computer Settings screen, select a computer name (your current computer name displays by default)
3. The current local backup path displays.
4. You can optionally change this location by means of the Change... button, in which case the new directory path will then display.
4.9. Locating an EXACT Live database directory

To locate an EXACT Live database directory

The simplest way is to run the Server Administrator menu from your toolbar.

1. Right-click the Server Administrator 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.
4.10. Checking the Network Backup integrity

EXACT makes the Backup available as a dataset (DATABASENAMEBackup) so that you can log into it normally.

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

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:

   ![Login Screenshots]

   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:** EXACT 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:
4.11. (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 22) 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 21).

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

6. Copy and paste the backup content 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:

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.
4.12. 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.

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 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, nor for restoration from these files – this remains the responsibility of the dental practice and / or its associated IT services.

Software of Excellence cannot be held responsible for any negligence on the part of the practice.
4.12.1. Acceptable Backup Media

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

<table>
<thead>
<tr>
<th>Back Up Media</th>
<th>IOMEGA Rev</th>
<th>DDS3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any USB External Hard Drive</td>
<td>DLT IV?</td>
<td>DLT IV?</td>
</tr>
<tr>
<td>CD</td>
<td>Peerless</td>
<td>Peerless</td>
</tr>
<tr>
<td>CDR/W</td>
<td>Travan 4/8</td>
<td>Travan 20/40</td>
</tr>
<tr>
<td>DVD</td>
<td>Travan 20/40</td>
<td>Hard Drive</td>
</tr>
<tr>
<td>DVDR/W</td>
<td>Memory Stick</td>
<td>Onstream 30G</td>
</tr>
<tr>
<td>ZIP 100</td>
<td>PD Disk</td>
<td>Onstream 60G</td>
</tr>
<tr>
<td>ZIP 250</td>
<td>Syquest 1.5G</td>
<td></td>
</tr>
<tr>
<td>ZIP 750</td>
<td></td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Backup Software</th>
<th>Backup EXEC V4</th>
<th>Backup EXEC 2f or lower</th>
<th>Backup EXEC 10.0 for Servers</th>
<th>BackupUpMyPC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mw Backup</td>
<td>Backup EXEC 2f or lower</td>
<td>Backup EXEC 10.0 for Servers</td>
<td>BackupUpMyPC</td>
<td>Retrospect Backup</td>
</tr>
<tr>
<td>CP_Backup</td>
<td>Windows Backup for Windows 2000</td>
<td></td>
<td></td>
<td>Avantrix Backup Plus v7 and lower</td>
</tr>
<tr>
<td>IOMEGA Backup</td>
<td>Windows 2003 Server Backup</td>
<td></td>
<td></td>
<td>ArcServe</td>
</tr>
<tr>
<td>IOMEGA One Touch</td>
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<td></td>
</tr>
<tr>
<td>IOMEGA Rev</td>
<td></td>
<td></td>
<td></td>
<td>Nero 6+</td>
</tr>
</tbody>
</table>

4.12.2. 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.

4.12.3. Tape formatting and checking

Tapes must be formatted before use, and checked on a regular basis in order to ensure they are:
EXACT system minimum requirements, recommendations and configuration

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

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

5. REMOTE ACCESS

Software of Excellence uses Bomgar ([www.Bomgar.com](http://www.Bomgar.com)) and VNC to support our clients via your broadband Internet connection.

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

VNC needs to be installed on all workstations and the server prior to the install and/or conversion team uploading your conversion. It is used to access the other workstations once a Bomgar connection has been established.

6. ADDITIONAL SOFTWARE

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

Software of Excellence strongly recommends virus protection software to protect your system from the vast number of viruses on the Internet. In addition, 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 the client’s system or data being lost due to malicious attacks from the Internet.

6.1. HTML-based browser for Help files:

By default EXACT 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, EXACT 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 use any other browser that is capable of reading HTML files.

**Notes in relation to the browser:**

Some features of the EXACT 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.
7. 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 on page 29.

8. HARDWARE CONFIGURATION

8.1. Network speed

Recommended network speed of 1Gb:

We recommend that your network speed runs at 1Gb speed.
If any network component cannot handle 1Gb 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 50Mb network speeds.
Viewing images/xrays requires at least 100Mb speeds.
Generating reports requires 1Gb speeds.
8.1. Network configuration

See the Network Diagram below for the recommended network configuration. This includes internal IP ranges for various devices.

It is preferred that your network uses at least CAT5 cabling, which runs at up to 100Mbps, but 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.
8.2. Broadband

The NHSBSA DSD and Central Services Agency now have in place the necessary technology to utilise Broadband and ISDN connections. In addition, this connection is used for supporting your EXACT Dental software using Bomgar.

8.2.1. 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.**

8.3. Digital Imaging

With our new Examine Pro we can now support many Digital Imaging packages.

Please contact your Regional Business manager or the Main Office on 0845 3455767 for more information on supported Imaging packages.

8.3.1. Specific hardware requirements for Examine Pro

Where EXAMINE Pro is to be installed there are some specific requirements that need to be noted:

- 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 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   V6.5.4.1B   V6.6.3.0C
V6.8.2.0A  V6.8.4.1A  V6.8.6.0  V6.10.7.3A  V6.10.8.3A  V6.11.5.2C
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 a lot of 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.

### 8.3.2. Digital imaging storage requirements:

- 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 section 4.0 Backups, on page 14)

### 8.4. Add-on Devices

Please ensure that any other devices you add, or will need to 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)

NOTE: We have seen some older technology ISA capture cards which are incompatible with Windows XP. For example, older Trophy\Kodak capture cards.
9. INSTALLATION CONSIDERATIONS

It is imperative that all 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 be incurred by the practice.

9.1. Power Supply

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
- Intra-Oral Camera
- Jet Direct Print Server
- All Xray Equipment
- Network Switches

9.2. Installation on existing system’s infrastructure

If a company other than MicroMinder is to be involved in migrating your current dental system to EXACT they should speak to Software of Excellence’s support staff to confirm if EXACT will run on your existing infrastructure. Should you be running any of the following systems you will not be able to run EXACT on the existing infrastructure:
- 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 team on 0845 3455767.

NOTE: It is highly recommended that your existing server remains in place as a reference system post conversion to EXACT.
# CLIENT HARDWARE SUPPLIER SIGN OFF

Please can your hardware supplier sign, scan and email this to Software of Excellence to confirm that the minimum specifications described in this document have been met.

For:

<table>
<thead>
<tr>
<th>Dental Practice Name:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Practice telephone:</td>
<td>Practice Postcode:</td>
</tr>
</tbody>
</table>

By:

<table>
<thead>
<tr>
<th>Hardware Supplier Company:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact Name:</td>
<td>Contact Telephone:</td>
</tr>
</tbody>
</table>

Signed: ________________________________ Date: ____________

Notes: ________________________________