

CLIENT COMPUTER REQUIREMENTS

VERSION HISTORY

<i>Version</i>	<i>Date of writing</i>	<i>Name of editor</i>	<i>Nature of modification</i>
01	07/03/2018	Kevin Lacroix	Documentation creation
02	19/02/2019	Kevin Lacroix	Addition of information on minimum configuration.
03	11/07/2019	Kevin Lacroix	Modification of graphic charter
04	26/10/2020	Kevin Lacroix	Deletion of obsolete information and addition of information on disk space required after installation.
05	04/01/2021	Kevin Lacroix	Modification of information on processors.
06	08/02/2021	Kevin Lacroix	Addition of information on SSD and Wifi
07	25/05/2021	Kevin Lacroix	Addition of information on number of beds per workstation
08	13/09/2021	Kevin Lacroix	Delete MySQL
09	10/05/2022	Kevin Lacroix	Addition of information on the decimal symbol

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1. Minimum configuration

The configuration specified below applies to all versions of DIANE.

-RAM: 4 GB minimum (8 GB recommended for recovery rooms and ICU rooms).

An additional 2 GB per additional entity on a computer must be available. For example, the minimum configuration for a computer with two beds in a recovery room is 4 GB + 2 GB, i.e. 6 GB in total.

-Processor: Processors must meet the performance criteria specified on <https://www.cpubenchmark.net/>. Processor performance is given as an overall mark, which is used to quickly identify the overall performance of a processor. Processor performance must be verified if Diane is used on computers not provided by Bow Medical.

- Primary computer (anaesthesia or ICU):
 - o Minimum *CPUBenchmark* mark required: **3700**
- Mirror computer:
 - o Minimum *CPUBenchmark* mark required: **2400**

NB: The higher the mark, the better the overall application response times.

-Hard disk space: 8 GB minimum. Given the low cost of disk space and our moderate requirements, we recommend applying a comfortable margin to the minimum requirement.

Installing Diane on an SSD hard drive has clear advantages in terms of software speed.

NB: *At least 1 GB free space is required on the hard drive where Diane is installed (after installation) so that the application can be launched.*

- Network: Ethernet connection 100 MB/s minimum, 1,000 MB/s recommended. Wifi connection is not recommended in order to prevent issues with slow/unreliable connections. If Wifi is to be used, the facility must ensure the network is equivalent to a wired connection.

- Screen resolution: 1280x800 minimum (presence of scrollbars), 1280x1024 or higher recommended

2. Software to be installed in advance

- Operating system: Windows: all versions currently supported by Microsoft.

For more information on supported versions of Windows, see the release notes of the Diane version in use.

- Software:

- Office Word (version 2000 or later)
- Office Acrobat Reader 9.0 and all other readers required for files likely to be opened on the computer (PDF, Dicom, etc. depending on the hospital).
- Antivirus recommended (with Diane file excluded from analysis).
- If the database is an **Oracle** database, installation of **Oracle** client configured with the database server:
 - TNSName = DianePRD (production database),
 - TNSName = DianeREC (recipe database),
 - TNSName = DianeFOR (for the training database),
 - TNSName = DianePPRD (for the preproduction database).

The 32-bit Oracle client version 12c (minimum) must be installed.

- Local copy of executable and help files (approx. 1 GB) made using our DiaUpdate.exe installation tool.

The installation and configuration of the Oracle client remains the responsibility of the facility and requires administrator rights for the computer.

3. Security

- *Maximum number of beds per primary computer:*

- Long ICU hospitalisation (> 7 days) = 1 bed
- Short ICU hospitalisation or critical care (</= 7 days) = 4 beds
- Operating theatre: 1 patient
- Recovery room (</= 1 day) = 8 beds

- *Unlocking workstations*

In order to facilitate the transfer of various flows required by Diane, please note the list of ports to be opened depending on your situation:

- LDAP/AD: 389
- LDAPS/AD: 636
- FTP: 21, required for updating Diane via DiaUpdate.exe
- FTPS: 990
- Webservice: 80 (or other as required)
- TCP: 2100, 2200
- VIDAL: 8011 (or other depending on set-up)
- BCB: 8080 (or other depending on set-up)
- Database: Diane applications connect directly to the database. These ports (depending on the chosen DBMS) must therefore be open:
 - Oracle: 1521
 - SQL Server: 1433
- HL7: 8000, 8001, 8002, 2550 (depending on editor).

- **Antivirus:** Antivirus protection is the responsibility of the facility. No specific guidance is given. However, we do not recommend activating Word plugins that could significantly slow the mailing process (generation of template letters via DIANE).

Please note that with the Forefront Endpoint Kapersky10 or MsMpEng antivirus programs or the addition of an automatically integrated firewall, each interaction with DIANE causes the antivirus to verify its communications and increase the CPU load, which slows DIANE. It is therefore not recommended. More generally, we recommend excluding DIANE from the list of programs to be analysed by your antivirus in order to avoid speed issues.

- **Windows Defender:** If this Windows tool is used, the folder containing DIANE executables must be excluded to avoid slowing the application.

- **User:** End users must have write permissions in the directory C:\Program Files\Diane (directory for using the DIANE software suite) or in the Diane installation directory

- **Registry:** If the final Windows users do not have write permissions in the registry (most cases), a service account with the relevant permissions must be provided on updating (via our update management tool).

- **UAC:** The Diane update tool (DiaUpdate.exe) is compatible with UAC. It can therefore be left active.

- **Standby mode:** Standby mode must be deactivated. Standby can interrupt data capture from biomedical devices connected to the computer, amongst other things.

- **Addition of "Creation of global objects" permission** This option is no longer activated by default on Windows Vista and must therefore be activated.

NB: This is carried out automatically by the automatic DIANE update (DiaUpdate.exe).

- **Windows Firewall:** In order to use DIANE remotely (DIANE ICU and Patient list), remote administration must be authorised on all relevant computers (command: **netsh firewall set service RemoteAdmin enable**).

In this context, and if the Windows firewall is activated, all DIANE executables must be added to the exceptions (command: **netsh firewall add allowedprogram program=C:\Program Files\Diane\Visual.exe name=VISUAL**) on the computers in addition to opening port 135 (command: **netsh firewall add portopening protocol=tcp port=135 name=DCOM_TCP135**).

NB: This is carried out automatically by the automatic DIANE update (DiaUpdate.exe).

- **Modification of DCOM properties:** In order to use DIANE remotely (DIANE ICU and Patient list), the DCOM properties for the computers communicating with each other must be modified (command: MMC comexp.msc /32).

Select "06578E4A-3228-4155-B35B-60F1249AD63" in the DCOM settings, right-click then Properties, and in the General tab, set the authentication level to Connect. In the Location tab, select the Run application on this computer box, and in the Identity tab, select Interactive user. In the Security tab, access authorisations must be defined as default. Launch and activation permissions must be changed in order to add the user "anonymous logon" with local launch permissions and local and remote activation permissions.

While still in Component Services, at the computer level, right-click and select Properties. In the Default properties tab, select "Enable DCOM on this computer". In the COM Security tab, edit the access permission limits to add the user "anonymous logon" to connect locally and remotely. While still in Access permissions, click Edit (or Default security depending on the OS) in order to add the user "anonymous logon" again and give it local and remote access permissions. You must also change the Launch and activation permissions for the user "anonymous logon" to have local launch permissions and local and remote activation permissions. Then click Edit (or Default security depending on the OS) in order to add the user "anonymous logon" again and give it local launch permissions only.

NB: This is carried out automatically by the automatic DIANE update (DiaUpdate.exe).

- **Time server (NTP):** In order to use DIANE remotely (DIANE ICU and Patient list), all computers must display the same date and time in order to enable communication. The NTP protocol must therefore be activated for the IT equipment.

- **Authorise internet access:** or provide a solution for simplified remote control for maintenance operations on client computers.

- **Office Word:** During installation, 'Visual Basic for Applications' must be selected from the shared modules/features. If Word is already installed, you must go to Control Panel/Programs/Microsoft Office/Change/Add or remove features then select Visual Basic in the shared features.

- **Office Word Version 2010 or later:** the option "Open e-mail attachments and other uneditable files in reading view" under Files/Options/General must not be selected.

- **PDF Creator:** We provide the PDF Creator installer on the DIANE interface server. The version supplied is 1.0.1. Automatic software updates must be disabled after installation.

- **Readability** Select the option "Small - 100% (default)" for the text size (Configuration panel - Display) so that the application is readable.

- **Decimal symbol** It is necessary to ensure that the Windows decimal symbol is positioned on ",". To do this : Control Panel\Region\Additional Settings

4. Other

DIANE is compatible with thin clients (Citrix, TSE), except for computers where the USB or RS232 ports are in use, in particular those in operating theatres or recovery rooms. See the Diane installation guide for implementing such architectures.