



Software Install Guide

PAC Access Central Ver. 5.3

and EasiNet Residential

July 2022



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Issue Record

| Issue | Date | Author | Details |
|-------|----------|----------|---|
| 5 | May 2020 | DP/GA | Major Revision for PAC Software 5.3. Reformatted; Added AD section from JC doc "AD Integration V3 - Feb2020"; Updated Windows Operating Systems; Updated Database versions; Removed deprecated software references. |
| 5.1 | Feb 2021 | DP/GA/PK | Reviewed h/w specs, reordered sections. |
| 5.2 | Oct 2021 | DP | Created date variable for consistency & added to cover and footers |
| 5.3 | Mar 2022 | DP | Rebrand |
| 5.4 | Jul 2022 | DP | Added Windows 11 to Operating Systems |

Training and Technical Support

Training and technical support services are currently available Monday to Friday, from 08:30 to 17:30 GMT, excluding UK public holidays.

Training

Training courses covering the installation and use of all PAC GDX products are regularly held at PAC GDX offices. For further information on course availability, or to discuss your specific requirements, contact the Training Administrator at the address below.

It is strongly recommended that any persons installing or commissioning PAC products attend a suitable training course beforehand.

Technical Support

This service is provided primarily for the use of trained engineers. End users of PAC GDX items should first contact their installation or maintenance company before contacting PAC GDX.

Further information is given in 17409 Technical Support and Training Information.

Knowledge database available after registration: <http://pacgdx.com/support/knowledge-centre/>

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|---|--|
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1 Pre-installation Considerations

This section describes some of the area to plan for before installation.

1.1 Who is this guide intended for?

Any personnel with responsibility for the management and maintenance of IT infrastructure, hardware and software including installation and configuration of these systems. This will typically be IT managers and support staff.

For business administration, operator instructions and user guides please refer to the context sensitive help file in Access Central:

- Press **F1** for specific help related to the system window being accessed
- Select **Help > Contents** to view open and browse or search the help file

1.2 Virtualisation

PAC Software can be run on a virtualisation environment such as Microsoft Virtual Server, Microsoft Hyper-V or VMware. The system resources allocated to the virtual machine must be equal to or better than the minimum system requirements. See ["System Requirements" on page 6](#).

2 Installation

This section provides an overview of the minimum system requirements and considerations required for installing this software.

Please note, "PAC Software" refers to both PAC Access Central and EasiNet Residential where appropriate throughout this guide.

2.1 System Requirements

! Important

You must have administrator privilege to install PAC Software.

You can use the local Administrator account or any account with administrator privilege that will not subsequently be deleted from the PC. Always use the same account to install, upgrade and uninstall the product. This avoids complications with SQL administrator roles.

We advise that the PAC Software machine requirements, listed below, for memory and processor speed, are exceeded whenever possible.

Server

! Important: A dedicated server for PAC software is required.

Minimum Server specification for SE licence software installs are:

- IBM Compatible PC with a minimum Intel i5 (7th Generation) quad-core processor with 2GHz clock speed
- 8 GB RAM
- 256 GB Hard Drive (300Mbps read / write speed)

Minimum Server specification for Pro licence software installs are:

- IBM Compatible PC with a minimum Intel i7 (7th Generation) quad-core processor with 2GHz clock speed
- 16 GB RAM
- 512 GB Hard Drive (300Mbps read / write speed)

Please note that these are the minimum specifications and for larger systems, higher specification servers will be needed.

Client

Minimum Server specification for a Client running SE/Pro licences software installs are:

- IBM Compatible PC with a minimum Intel i5 (7th Generation) quad-core processor with 2GHz clock speed
- 8 GB RAM
- 256 GB Hard Drive (300Mbps read / write speed)

Power Management Settings

The power settings on the PAC server PC listed below must be performed or communication issues to the door controllers will occur.

In Power Options / Change when the computer sleeps, make all settings = Never.

In Change advanced power settings make the following configurations:

- Hard disk / Turn off after = Never
- Sleep: Make all sleep and hibernate settings = Never
- USB settings / USB selective suspend setting = Disabled

Once an Office admin kit is added in the PAC Software software then In Device Manager / Ports (COM & LPT), locate the Office Admin Kit (COM#) and in Properties / Power Management, untick Allow the computer to turn off this device to save power.

Operating Systems

The following operating systems are supported:

- Windows 11 Professional 64-bit
- Windows 10 Professional 64-bit
- Windows Server 2019
- Windows Server 2016
- Windows Server 2012 Foundation, Essentials or Standard edition
- Windows Server 2012 R2 Foundation, Essentials or Standard edition.

Important

The following operating systems are **NOT** supported:

- Windows Server 2008, 32 or 64-bit; Windows Server 2008 R2, 32 or 64-bit. Referred to as Windows 2008
(End of life Jan 2020)
- Windows 10, Home version 32 or 64-bit;
- Any earlier versions of Windows (all variants)

Important

If using a server operating system for the PAC Software server make sure the server has the role of an Application Server if connecting PAC Software clients. See "[Setting the Application Server Role](#)" on page 16.

This is not applicable for Windows Server 2016 as it has been deprecated by Microsoft.

[https://docs.microsoft.com/en-us/previous-versions/windows/it-pro/windows-server-2012-R2-and-2012/dn303411\(v=ws.11\)?redirectedfrom=MSDN](https://docs.microsoft.com/en-us/previous-versions/windows/it-pro/windows-server-2012-R2-and-2012/dn303411(v=ws.11)?redirectedfrom=MSDN)

Databases

The following database environments are supported:

- Microsoft SQL Server 2019
- Microsoft SQL Server 2017
- Microsoft SQL Server 2016
- Microsoft SQL Server 2014 Enterprise or Standard
- Microsoft SQL Server Express 2012 R2
- Microsoft SQL Server 2012 Enterprise or Standard R2

Note: Please follow Microsoft recommendations for keeping up to date with relevant service packs.

Important

The following SQL Databases are not supported:

- Microsoft SQL Server 2008 including Express and Service Pack 2 and 3 versions
- Any earlier versions of Microsoft SQL Server

Web Application

Server

The hardware, operating system and database requirements for the Web Application server are the same as for a server installation of PAC Software.

Device

- iOS on Apple iPad or iPhone
- Optimised for web browsers on Windows Phone
- Android on Samsung tablet

Browser

- Microsoft Edge
- Safari
- Google
- Mozilla Firefox

2.2 Web Admin Reader Configuration

The PAC desktop administration reader can be configured to operate on any PC or mobile device using a PAC supported Windows Operating System with a USB port, enabling access control tokens / cards to be added using a browser. To enable this function, it is necessary to install:

- Admin Reader drivers
- Web Admin Reader application

These may be downloaded from the PAC web site at <https://pacgdx.com/products/management/pac-access-central> or from the PAC GDx Knowledgebase.

1. Install the Administration Reader Drivers first.
2. Connect the USB desktop reader to complete the installation.
3. Install the Web Admin Reader application.

Prerequisites

The web admin reader application will require the following applications to be installed onto the PC or mobile device.

- Dot Net Framework V4.7.2
- Windows Installer

These are included in the software bundle.

Application configuration

On completion of installation, the Web Admin Reader (key icon) will appear in the system tray.

Right click on this and configure:

- The Serial (USB) port that has been assigned to the Admin Reader.
- Copy key code to clip board selected.
- Card format: Typically, OneProx Smart for high frequency (MIFARE) technology devices, or PAC Proximity card for low frequency technology devices.

2.3 When to Upgrade the Database Server

Our recommendation is that you must upgrade from your currently installed version of SQL Server or if any of the following are true:

- Your system has more than 15,000 keyholders.
- Your system has multiple Organisational Units.
- The database size is greater than 4 GB.
- Refer to Microsoft.com for details on end of life support details for your SQL Server installation.

2.4 PAC Software Installation Types

There are four types of PAC software installations that can be performed:

Stand Alone Server with SQL Server Express

This is the most common installation where a full copy of PAC Software is installed with SQL Server Express, which is included on the installation media.

Stand Alone Server with Full SQL Server

For this type of installation, a full version SQL Server is pre-installed on the same PC as PAC Software. When this type of installation is performed, the PAC Software software performs a check to see if SQL Server is already installed, and will confirm with the user if they wish to install the PAC databases on the existing (installed) SQL server.

Full PAC Software with Remote SQL Server

This type of installation will install PAC Software on a PC / Server, and connect to a remote SQL Server where the PAC databases are already installed. This is useful for companies that run SQL server farms and do not

allow SQL server to be installed on an application server. This installation uses a switch in the setup.exe in windows command prompt, which is fully covered in the document 'Configuring Remote SQL Server with PAC Software', available from PAC technical support.

! Important

When installing PAC Software with a remote SQL server you must be fully conversant with SQL administration and Microsoft Server technologies and have domain and local administrator rights, this cannot be completed without referring to the technical document 'Configuring Remote SQL Server with PAC Software' and as such there is limited technical support for this type of installation.

PAC Client Software Installation

The client software installation is intended for client machines that will connect to a PAC Server already on the network having the full PAC software and SQL installation. A machine with client software installed cannot operate without a connection to a machine having the full software installation.

! Important

It is not possible to connect PAC door controllers directly to a client machine.

2.5 PAC Software Server

We recommend the use of a dedicated PC / Server for the PAC Access Software Server which should be running 24/7 for reliable door controller communication, so therefore a server class or virtual machine is the preferred option, and will benefit from the following server class features:

- Designed for 24/7 365 use
- UPS power fail backup
- Multiple power supplies
- RAID configuration of the hard drives

! Important

The PAC Software backups MUST always be stored in a separate location off the host PAC machine to protect the system in case of disk failure. See ["Installing Microsoft Message Queuing \(MSMQ\)" on page 16](#).

If running PAC Software on a desktop operating system, make sure the power settings are modified as explained here, See ["Power Management Settings" on page 6](#). or communication issues to door controllers can occur

Prerequisites

Windows Message Queuing

This is a component of Microsoft Windows, and is installed as part of the PAC Software installation process on Microsoft desktop operating systems. However, it must be installed manually on Microsoft Server operating systems through the Server Manager application.

See ["Setting the Application Server Role" on page 16](#).

Microsoft .NET Framework

Microsoft .NET Framework Version 4.7.2 is installed as part of the PAC Software installation process.

Installation Directories

The software is by default installed into the **%ProgramFiles%\PAC Software** folder on a 32-bit PC or the **%ProgramFiles(x86)%\PAC Software** folder on a 64-bit PC. The installation procedure also creates folders for storing database backups and event archives. The defaults can be changed during or after the installation process.

Important

If you have modified server properties within SQL Management Studio to specify directories to hold the data and log files, the installation process maintains this setting and uses the specified directories, if they exist.

This does not affect upgrades where the current database is preserved.

This enables you to choose which disk to install the database on, or to keep data and log files on separate disks in order to maximize performance.

Databases

If you are installing a PAC Software Server and no existing Microsoft SQL Server database instance is found, the setup program requires you to install SQL Server Express which is provided on the installation media and will be installed automatically.

If you have an existing SQL Server database, See ["Databases" on page 7](#).

User Accounts and Start-up Tasks

The following account is added to your system. You should not modify or delete it, or PAC Software will fail to work:

- Example **PAC_EKA_COMPUTER NAME**. Computer Name is the name of the computer on which PAC Software is installed. (This may become truncated depending on the length of PAC_[COMPUTER_NAME].)
- This is a user account that is used to access the database and run some of the PAC Services.
- The password for this account is randomly generated and must not be changed.

The following local group is added to your system:

- **PAC_DBA**. This group allows you to make a user a database administrator for the database without giving him/her any other privilege.
- A user does not need to be an operator to be a member of this group.

The following scheduled tasks are added to your system:

- PACClockSync. By default, this task runs at boot time and every day thereafter at 23:00 to synchronise all access controllers with the system clock.
- PACEventArchive. By default, this task runs at 18:00 every day to archive events in the event log, providing there are enough old events to archive.
- PACStartup. This task runs at boot time to start the PAC services (e.g. Engine) if they are set to be auto started — via the Service Manager.
- PACWeeklyBackup. By default, this task runs at 15:30 every Tuesday to back up the PAC Software database according to the path set in PAC Software.
To change the backup directory location, modify the system settings from within PAC Software\ Set Organisation Options\ Default backup directory.

Notes on SQL Server Express Databases

- Integrated Security (windows authentication) is used to access the database.
- Access is granted to the **PAC_EKA_computer** account, which is created during installation. **PAC_EKA_computer** has rights to read and write the data in the PAC Software tables and perform backups of these tables.
- DBA access to the SQL Server Express instance is granted to any Windows user allocated the **PAC_DBA** user group created during installation. Placing a non-administrative user into the **PAC_DBA** group will allow them to restore database backups.
- By default, any user allocated a standard Administrator account in Microsoft Windows will also have full DBA access to the SQL Server Express instance.

No Manual Editing of MSSQL

Manual editing or modification of the PAC Software MSSQL tables or data contained within, must not be attempted, as this bypasses the PAC User Interface and does not update the door controllers. This can also cause the PAC Software system software to become unstable and may involve a re-install of the PAC software with a full PAC database restore.

2.6 PAC Software Clients

The PAC Software client can be easily operated alongside other applications, there is no need for a PAC client to run on a dedicated PC.

Prerequisites

The following Microsoft.NET Framework versions are required:

- Microsoft .NET Framework Version 3.5 is a prerequisite of Crystal Reports and is required on client machines.
- Microsoft .NET Framework Version 4.7.2 is installed as part of the PAC Software installation process.

Installation Directories

The software is by default installed into the **%ProgramFiles(x86)%\PAC Software** folder. You may change the folders from the defaults during the installation process.

Connectivity

The client PC must be in the same workgroup or domain as the PAC Software Server to which it is connected. The name of the PAC Software Server to which the client is connecting must be specified in the installation process. This can be modified later in the client login screen.

Network Address Translation

PAC Software Client machines cannot exist behind a NAT Router, otherwise connection issues to the PAC server will be seen.

2.7 Regional Options and Time Zone

Ensure that the correct regional options and time zone for the country or region is specified on the server and client operating system. Once the Server / Client has been set, check that the correct time zone is set in PAC Software.

2.8 Web Application Server

This section details the installation and configuration of the Web Application Server for PAC Software.

Prerequisites

The following prerequisites must be met:

- The hardware and operating system must meet the minimum system requirements for the Web Application server. See "[Web Application](#)" on page 7.
- The installer must have local administrator privileges.
- The PAC Web application must be hosted on the same PC as the full PAC Software server installation.
- The installed PAC Software application must be the same version as the web application you are installing.
- Internet Information Services (IIS) 7 or later must be installed on the PC. See "[Installing IIS](#)" below.

Installing IIS

Please use this Microsoft link to identify your operating installation for further instructions on installing IIS:

<https://www.microsoft.com/en-gb/search?q=Internet+Information+Server+Install>

Installation Tasks

The installer performs the following tasks when the web application is installed:

- Registers .NET 4.0 with IIS.
- Installs Microsoft Web Deploy. 32-bit and 64-bit versions are included on the installation disk.
- Creates an application pool called `PacAccessCentralPool` and a web application called `PacAccessCentral`.

2.9 PAC Client Software Network\Firewall settings

This section details useful information for configuring firewalls for use with PAC Client Software.

Important Information - VPN

If using PAC Client software to connect remotely to a PAC Server and data is being transmitted over an insecure network i.e. the internet then a VPN must be used to encrypt the data.

Required Ports

DCOM is short for Distributed Component Object Model and allows the PAC Client machine and PAC Host Sever to communicate. The table below lists the ports that are required to allow a PAC Client to communicate through external firewall .

| | |
|-------------|--------------------------------------|
| DCOM | Start Port: 49152 End Port: 65535 |
| RPC | Port: 135 |
| Port | 8089 |

| Application | Location | Protocol / Direction | Source Port | Destination Port |
|-------------------------|-----------------------|----------------------|----------------------|---------------------|
| PAC Client Manager | PAC Software Server | TCP / Out | Dynamically assigned | 8085 (configurable) |
| PAC Event Manager | PAC Software Server | TCP / Out | Dynamically assigned | 8086 (configurable) |
| PAC Database Manager | PAC Software Server | TCP / Out | Dynamically assigned | 8087 (configurable) |
| COM+/DLLHost.exe | N/A – Into PAC server | UDP / Out | N/A | 8086–8096 |
| COM+/DLLHost.exe (DCOM) | PAC Software Server | TCP / In-Out | DCOM assigned | 5020–5040 |

Important

DCOM ports are dynamic and can be modified if required. Clients cannot exist behind a NAT Router.

The range of DCOM ports used in Windows 2008 Server below is taken from:

<http://support.microsoft.com/kb/832017>.

VPN – Virtual Private Network

VPN or Virtual Private Network is a technology that creates an encrypted connection over insecure networks i.e. the internet. A VPN must be used between PAC Server and PAC Client if data is going over any insecure network.

NAT – Network Address Translation

Client machines cannot exist behind a NAT Router.

External Firewall Settings

By default when the PAC Client software is installed it will automatically modify the firewall settings on that machine, if there is an external firewall between the PAC Client machine and the PAC Host Server then issues can be seen if the external firewall is not modified to allow data from the PAC Client to reach the PAC Host Server.

RPC

RPC is short for Remote Procedure Call and is a simple request – response protocol that is used by the PAC software the following port should be opened:

| | |
|-----------------|-------------|
| Port 135 | TCP and UDP |
|-----------------|-------------|

Sample Port Connections

Please see the information below, this contains a working PAC client's connections to a PAC Host server and the ports that are open. This information can be obtained by using the command prompt and running a `netstat -a` command on the PAC client machine while performing a dialup to a remote 512 site.

This shows the three states of dialling from a PAC Software client to a PAC Host Server.

Important

This does not show any internal (loopback) connections on the PAC Client.

The PAC Client machine is 192.168.1.2 and the PAC Server is P1CN1C02

Normal - Non Dialing State

| Remote Computer | Remote IP Addr | Remote Port | Local IP Addr | Local Port | Status |
|-----------------|----------------|-------------|---------------|------------|-------------|
| P1CN1C02 | 192.168.1.1 | 49186 | 192.168.1.2 | 49683 | established |
| P1CN1C02 | 192.168.1.1 | 49187 | 192.168.1.2 | 49690 | established |
| P1CN1C02 | 192.168.1.1 | 8085 | 192.168.1.2 | 49707 | established |
| P1CN1C02 | 192.168.1.1 | 8085 | 192.168.1.2 | 49708 | established |
| P1CN1C02 | 192.168.1.1 | 49187 | 192.168.1.2 | 49709 | established |
| P1CN1C02 | 192.168.1.1 | 49186 | 192.168.1.2 | 49718 | established |
| P1CN1C02 | 192.168.1.1 | Loc-Srv | 192.168.1.2 | 49839 | time wait |
| P1CN1C02 | 192.168.1.1 | Loc-Srv | 192.168.1.2 | 49840 | time wait |
| P1CN1C02 | 192.168.1.1 | Loc-Srv | 192.168.1.2 | 49841 | time wait |
| P1CN1C02 | 192.168.1.1 | Loc-Srv | 192.168.1.2 | 49842 | time wait |
| P1CN1C02 | 192.168.1.1 | Loc-Srv | 192.168.1.2 | 49843 | time wait |
| P1CN1C02 | 192.168.1.1 | Loc-Srv | 192.168.1.2 | 49844 | time wait |
| P1CN1C02 | 192.168.1.1 | Loc-Srv | 192.168.1.2 | 49845 | established |

Dialing Remote site

| Remote Computer | Remote IP Addr | Remote Port | Local IP Addr | Local Port | Status |
|-----------------|----------------|-------------|---------------|------------|-------------|
| P1CN1C02 | 192.168.1.1 | 49238 | 192.168.1.2 | Loc-Srv | established |
| P1CN1C02 | 192.168.1.1 | 49239 | 192.168.1.2 | Loc-Srv | time wait |
| P1CN1C02 | 192.168.1.1 | 49240 | 192.168.1.2 | Loc-Srv | established |
| P1CN1C02 | 192.168.1.1 | 49186 | 192.168.1.2 | 49683 | established |
| P1CN1C02 | 192.168.1.1 | 49187 | 192.168.1.2 | 49690 | established |
| P1CN1C02 | 192.168.1.1 | 49241 | 192.168.1.2 | 49691 | established |
| P1CN1C02 | 192.168.1.1 | 8085 | 192.168.1.2 | 49707 | established |
| P1CN1C02 | 192.168.1.1 | 8085 | 192.168.1.2 | 49708 | established |
| P1CN1C02 | 192.168.1.1 | 49187 | 192.168.1.2 | 49709 | established |
| P1CN1C02 | 192.168.1.1 | 49186 | 192.168.1.2 | 49718 | established |
| P1CN1C02 | 192.168.1.1 | Loc-Srv | 192.168.1.2 | 49841 | time wait |
| P1CN1C02 | 192.168.1.1 | Loc-Srv | 192.168.1.2 | 49842 | time wait |
| P1CN1C02 | 192.168.1.1 | Loc-Srv | 192.168.1.2 | 49843 | time wait |
| P1CN1C02 | 192.168.1.1 | Loc-Srv | 192.168.1.2 | 49844 | time wait |
| P1CN1C02 | 192.168.1.1 | Loc-Srv | 192.168.1.2 | 49845 | time wait |
| P1CN1C02 | 192.168.1.1 | Loc-Srv | 192.168.1.2 | 49846 | time wait |
| P1CN1C02 | 192.168.1.1 | Loc-Srv | 192.168.1.2 | 49847 | time wait |
| P1CN1C02 | 192.168.1.1 | Loc-Srv | 192.168.1.2 | 49848 | established |

Connected to Remote site (512 door controller)

| Remote Computer | Remote IP Addr | Remote Port | Local IP Addr | Local Port | Status |
|-----------------|----------------|-------------|---------------|------------|-------------|
| P1CN1C02 | 192.168.1.1 | 49239 | 192.168.1.2 | Loc-Srv | time wait |
| P1CN1C02 | 192.168.1.1 | 49186 | 192.168.1.2 | 49683 | established |
| P1CN1C02 | 192.168.1.1 | 49187 | 192.168.1.2 | 49690 | established |
| P1CN1C02 | 192.168.1.1 | 49241 | 192.168.1.2 | 49691 | established |
| P1CN1C02 | 192.168.1.1 | 8085 | 192.168.1.2 | 49707 | established |
| P1CN1C02 | 192.168.1.1 | 8085 | 192.168.1.2 | 49708 | established |
| P1CN1C02 | 192.168.1.1 | 49187 | 192.168.1.2 | 49709 | established |
| P1CN1C02 | 192.168.1.1 | 49186 | 192.168.1.2 | 49718 | established |
| P1CN1C02 | 192.168.1.1 | Loc-Srv | 192.168.1.2 | 49843 | time wait |
| P1CN1C02 | 192.168.1.1 | Loc-Srv | 192.168.1.2 | 49844 | time wait |
| P1CN1C02 | 192.168.1.1 | Loc-Srv | 192.168.1.2 | 49845 | time wait |
| P1CN1C02 | 192.168.1.1 | Loc-Srv | 192.168.1.2 | 49846 | time wait |
| P1CN1C02 | 192.168.1.1 | Loc-Srv | 192.168.1.2 | 49847 | time wait |
| P1CN1C02 | 192.168.1.1 | Loc-Srv | 192.168.1.2 | 49848 | established |

2.10 Database Backup \ Restore

Important

By default PAC Software will perform a backup of its main database at 15:30 hrs every Tuesday.

It is recommended that database backups are made on a regular basis using the backup tools provided with PAC Software. It is also advisable to store the database away from the PAC Software server, on a reliable backup source. i.e. a Network drive.

When a full backup is performed, two files are created; Backupname . ekb and Backupname . ekl as shown:

| | | | |
|--|------------------|-----------------------------|----------|
|  Full Backup 0900 21082017'.ekb | 21/08/2017 10:41 | PAC SecureNet backup | 7,008 KB |
|  Full Backup 0900 21082017'_Log.ekl | 21/08/2017 10:41 | PAC SecureNet events backup | 9,376 KB |

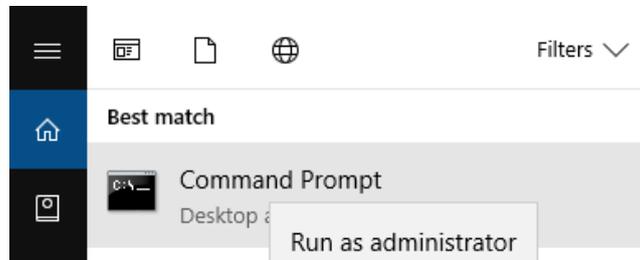
Only the Backupname . ekb is created if the main database is backed up without the 'Backup Events Table' selected. The various methods for performing backups are listed below.

The Backup and Restore tools are not available if using a remote SQL server, where backups must be performed through SQL management studio, with PAC Software installed on the application server (not covered in this guide).

Command Line Backups

If you cannot access the backup application within PAC Software, or you wish to setup a scheduled task, this may be performed using command line. (Note: The instructions below relate to 64 bit PC's)

1. Log into the PAC Server machine using the Local Administrator account
2. Click on the Windows icon and type 'cmd' to open the command prompt.
3. Right click on this and select 'Run as Administrator'.
4. In the command prompt type: 'cd\' and press enter.



5. Type: 'cd program files (x86)\[name of PAC Access Software e.g. PAC Access Central]\bin\bin.net' and press enter.
6. Type: 'pacui.exe /backup' – This will backup the main PAC database.
7. Type: 'pacui.exe /backupall' – This will backup the main PAC database and the events database.
8. This will perform a backup which is written to the default backup folder (usually **C:\PAC Software Backups**) and the file name is auto-generated to include date and time of backup.

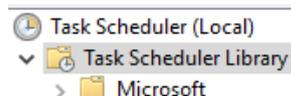
Full Automated Backups

By default PAC Software will automatically backup the main database at 15:30 hrs every Tuesday to the location selected within the PAC Software \Options section. This can be modified to also backup the events database at the same time:

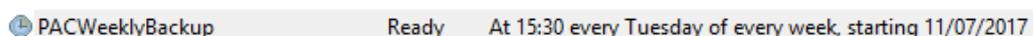
Important

When backing up the events database as well as the main database this can (depending on the size) take up considerable disk space, so the PAC Software Backups folder must be checked frequently to make sure you do not exceed the disk capacity.

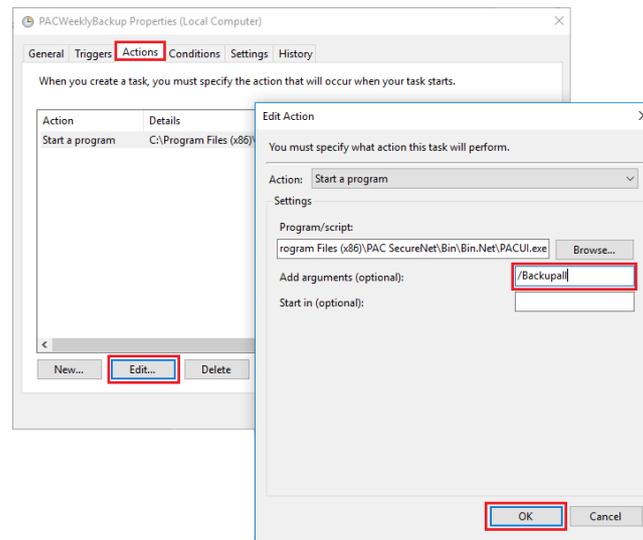
1. Using the windows search type: 'task scheduler' press enter.
2. Expand the selection by clicking on the 'Task Scheduler Library'.



3. Select the 'PACWeeklyBackup' by double left clicking it.



4. Select the 'Actions' tab and then select 'Edit...'. Modify the add arguments (optional) section by adding 'all' to the '/backup' as shown and click 'OK'.



5. Task Scheduler will now ask the question below. Click 'Yes' and 'OK'
6. You can confirm whether the changes have been implemented correctly by right clicking on the 'PACWeeklybackup' and selecting 'Run'. This will run the task and on success there will be both a .ekb and .ekl backup folder that was created when the task ran.
7. Close Task Scheduler

Backing up to a Network Drive

To enable backups to a network drive in PAC Software, both the SQL Server service and the PAC Software Database Manager Service must have a domain account with access to the network location and underlying partition. The process is as follows:

Create a domain user account and verify that the account specified has write access on the Windows Network share to which you are backing up to, as well as the underlying partition (if the partition is formatted as NTFS).

To do this, perform the following steps:

1. Right-click the share name in Windows Explorer.
2. Click Sharing on the shortcut menu.
3. On the Security tab, click Permissions.
4. Confirm the user account created earlier has read\ write access.

PAC Software Database Manager

1. Open services on the PAC Software PC by typing `services.msc` in the run command box.
2. Open the PAC Software Database Manager service and click on the Log on tab.
3. Change the Log on options for the service and verify that 'This Account' is selected and that a valid domain account is supplied in the form `Domain_Name\Domain_account` and associated password.

SQL Server Service

1. The SQL Server service must be started using a domain user account to access any resources on a remote computer. Verify that the MSSQLServer service is started under a domain account that has write access to both the Windows Server share and its underlying partition.
2. Select the MSSQLServer service and then click Log on.
3. Change the login options for the service verifying that 'This Account' is selected and that a valid domain account is supplied in the form `Domain_Name\Domain_account` and associated password.
4. Once the above is complete, set the backup path as a UNC structured path.
E.g. `\\MyServer\C$\Backups\Stockport`

Important

If you changed the services to run under a domain account, you must stop and restart the services.

Database Restore

PAC Software's database restore utility allows restoral of:

- Main Database alone
 - Main Database and Event Log Database
1. The restore is started by double clicking the .ekb backup file in the PAC Software Database Backup directory.
If the backups are stored in a remote location, they must be copied to this directory for a restoral to complete.
 2. The system will look to see if a matching event backup exists in the same folder. If so, the system will automatically tick the 'Restore Event Log' box.
 3. Once the relevant backups are restored the system will provide a confirmation message. Click 'OK'.

Important

After a restore has been performed, all the door controllers connected to the PAC Server will be marked unloaded in the hardware screen. This will not cause the doors controlled by PAC access to stop working or accepting existing (pre-downloaded) credentials, but no more keyholders can be administered until a full download is performed to all channels\ controllers on the system.

Installing Microsoft Message Queuing (MSMQ)

One of the pre-requisites required to allow PAC Software to run is Microsoft Message Queuing (MSMQ). This is normally installed automatically during the installation of PAC Software. On some Server, and Desktop operating systems that are controlled by a domain and have certain group polices in effect, the PAC installer program can be denied installation of MSMQ and give the message 'Not all Pre-requisites Installed'.

As MSMQ is part of the Microsoft Windows Operating system please refer to the Microsoft website for details regarding your operating system.

Important

To perform a manual backup refer to the built-in help within PAC Software.

2.11 Setting the Application Server Role

By default, Windows Server blocks PAC Software clients connections due to two reasons:

1. The Windows Server does not have the role of Application Server installed by default.
2. By default the Windows Server firewall blocks the ports required by PAC Software clients to communicate.

For further details refer to [https://docs.microsoft.com/en-us/previous-versions/windows/it-pro/windows-server-2012-r2-and-2012/hh831530\(v=ws.11\)](https://docs.microsoft.com/en-us/previous-versions/windows/it-pro/windows-server-2012-r2-and-2012/hh831530(v=ws.11)).

Important

Microsoft have deprecated the Application Server role in Windows Server 2016.

To find which ports to allow through on the firewall, see "[PAC Access Central Alarm Viewer Clients](#)" on page 1.

If you are using the Application Interface, see "[Application Interface TCP Ports](#)" on page 1.

Installing PAC on Microsoft Server 2016

May 2018

The following describes how to install PAC on a Microsoft Server 2016 based computer.

These editions are supported:

- Microsoft Server 2016 Datacenter Edition
- Microsoft Server 2016 Standard Edition

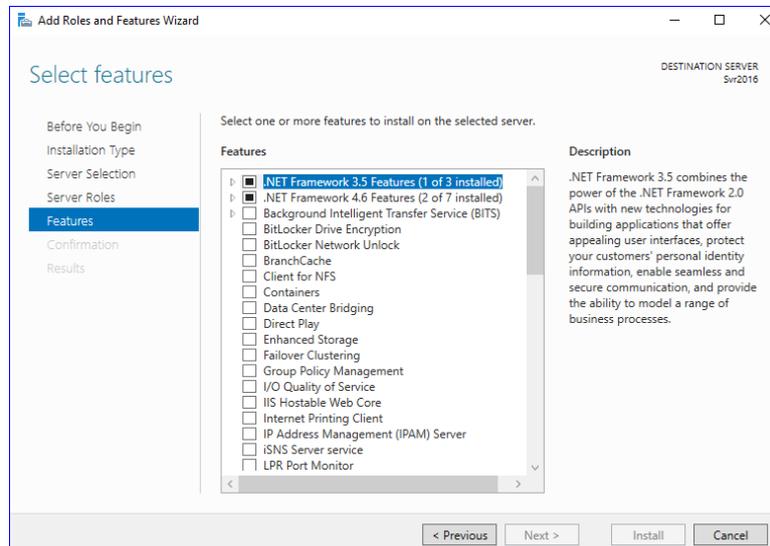
Important

Microsoft Server 2016 Essentials is not supported.

Before installing PAC

The .NET framework v3.5, required by PAC, must be installed through the Server Manager. Ensure this option is selected by checking the box in the Add Roles and Features Wizard:

1. Installation Type is Role-based or feature-based installation.
2. Server Selection will be the local server from the server pool.
3. No changes are required in Server Roles.



4. Check the .NET Framework 3.5 Features box.
5. At the Confirmation window, click Install.
6. Once this is complete PAC can be installed as usual.

Install PAC

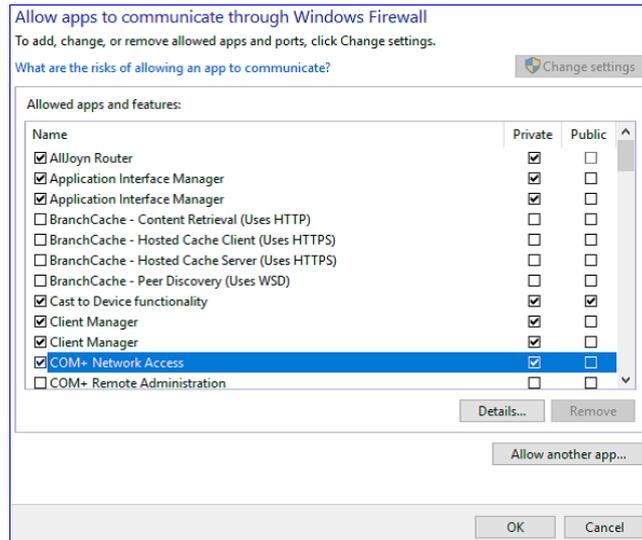
Install PAC as usual. At this point the application will operate on the server but no client connections to the server can be established until the following steps are completed:

Set Windows Firewall

1. Allow incoming client connections get a COM+ client connection to work.
2. Set the Windows Firewall in **Control Panel >Windows Firewall**.
3. Select 'Allow an app or feature through Windows Firewall' on the left.



4. Check COM+ Network Access and check the Private box.



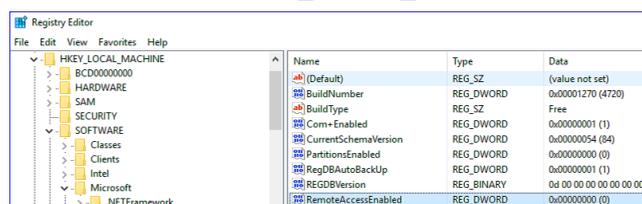
5. Click OK.

Allow incoming client connections

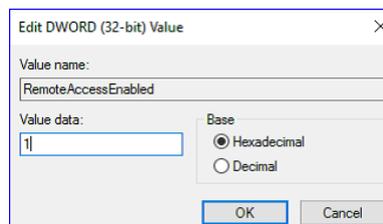
Registry change to enable remote access

6. The second setting is in the registry:

7. Find the Key RemoteAccessEnabled in HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\COM3.



8. Double-click the item and change the value from 0 to 1:



9. Click OK and close the registry editor.

10. Once these changes are made the client will connect and be able to perform all the expected functions.

2.12 PC Transfer

This section gives directions for transferring PAC Software to a new administration PC.

To backup settings on the old PAC SoftwareHost

1. In PAC Software, choose Tools › Database Backup. In the Backup window, enter a name for the backup, select Backup Events Table, and choose Backup.

The backup database and events log are stored in the database backup location — by default, e.g. for PAC Access Central: **C:\PAC Access Central Database Backups**.

2. Copy the backup database and events log from the database backup location to a USB stick or temporary network location. In addition copy the contents of the PAC Software Archives folder to the same location.

3. Choose Tools › Upgrade Licence and make a note of the current fingerprint and licence key. PAC will require this to issue a new licence.

To install PAC Software on the new PC

1. Be sure to observe the minimum operating system and hardware requirements for the new PC. See ["System Requirements" on page 6.](#)
2. If controllers are connected on a network via Ethernet, it is recommended that you set the new PC up with the same static I/P address and subnet mask as your old PC. Take the old PC off the network prior to adding the new PC.
3. Before you begin the install, activate the administrator account on the PC.
4. Obtain the latest version of PAC Software. It is available from the customer services team on request. Alternatively, download an upgrade version from the website <http://pacgdx.com/support/knowledge-centre/>. You will need to register with the site if you have not done so before, before you can access the downloads section.
5. Install the PAC Software software and login for the first time with the user name `installer` and no password. You will then be prompted to create a new password.

To restore the backup on the new PC

1. Close PAC Software, if running.
2. Copy the `.ekb` file and the `.ekl` file from the last backup you made to the database backup folder on the new PC — by default, **C:\PAC Software Database Backups** and copy the archives data previously saved, to the current PAC Software folder.
3. Double click on the `.ekb` file. In the PAC Software Database Restore window, select Restore Main Database and Restore Event Log, then choose the Restore button. Once the backup is restored, you will need to download to all channels in the Hardware module to ensure that the database is synchronised.

To configure the administration reader on the new PC

1. If your administration reader connects to your old PC via a serial port and your new PC only has USB ports, we recommend you purchase the PAC GDX approved variant (Part # 480130000 USB-RS232 Converter Lead).
2. Connect the USB to serial converter cable to the PC, then install the drivers from the USB Drivers folder in the PAC Software installation media.
3. If your administration reader is connected directly by a USB lead, install the drivers for the reader from the same location.
4. Log in to PAC Software with your old login name and password.
5. Choose **Tools > Configure Peripherals** to configure your administration reader.
6. Check the correct COM port is selected, then choose Click to test, and present a credential to the administration reader. The keycode will be displayed. Once communication is established credentials can be enrolled in the Keyholders module.

2.13 Best practices

Recommendations for improving visual experience of using PAC Access Software.

Screen Resolution

A screen resolution of at least 1024 × 768 pixels is recommended when using PAC Software.

If you are using the PAC Software **Alarm Viewer** a resolution of 1280 × 1024 is recommended.

Multiple Monitors

If you are using PAC Software on one PC for multiple functions, the use of two monitors is recommended. E.g. Using the Event Viewer in its undocked form on one monitor and position the **Alarm Viewer** on the other monitor.

3 Configure E-mail in Access Central

PAC Software connects to an SMTP server using port 25. Depending on the configuration of your network, port 25 may be blocked by anti-virus software, a corporate firewall, or your ISP. If PAC Software is failing to send e-mail messages, reconfigure your anti-virus software or firewall to unblock port 25 or ask your ISP to resolve the issue.

If PAC Software is not able to resolve the name of the SMTP server to an IP address, it will not be able to send e-mail. If PAC Software is failing to send e-mail messages, try configuring PAC Software with the IP address of the SMTP server, rather than the SMTP server name.

4 Uninstallation

PAC Software can be removed from your system using the Add or Remove Programs item in the Control Panel, or running the Setup program from the installation media. The prerequisite software, i.e. the .NET framework, service packs, SQL Server 2012 SP2 Express, etc., are not uninstalled by this process, but can be uninstalled separately if required.

After uninstallation, the following files are retained on your system:

- The MSSQL database files.
- The PAC Software backups directory and the files contained within.
- The PAC Software archives directory and files contained within.

These files can be manually deleted if no longer required after removal of the PAC software.