protel MPE

Hardware and system requirements

Table of Contents

Hardware and system requirements

What is this document about?

An appropriate hardware and system configuration will ensure that the upcoming installation process and operation of your protel hotelsoftware run smoothly.

Recommendations stated in this document are based on the specifications suggested by our software developers as well as on the experience we and our partners have made during thousands of installation processes.

Please make sure all minimum requirements are met before the installation date.

What will this document show you?

This document states and describes the requirements for protel MPE. The following components have to be taken into account:

- Data lines (band width)
- Terminal server operation
- Database and file services
- protel COM server
- Interfaces and additional protel modules

Related Information

Please find further information on protel MPE in the following documents:

- protel MPE product information
- Information on how to prepare system setup
- protel Update News
- Overview user rights
- Overview replacement codes

For more information and detailed user documentation please contact the protel Support Team.

Support

Also do not hesitate to contact us at support@protel.net if you have any questions or doubts regarding the following recommendations. We will be happy to assist you!

protel Editions

The SaaS product and service line with protel Air and bookatonce offers turnkey software solutions in the Cloud, while protel MPE, SPE, and Smart are individually installed on-site or run as a hosted application. All protel products can be operated via stationary or mobile workstations. protel provides the perfect solution for all hotel management needs.

SPE, MPE, Smart

Protel SPE, protel MPE and protel Smart are native 32-bit Windows applications that can be installed on all conventional Windows client and server platforms. Other operating systems are not supported. All on-site editions are based on a standardized C++ software core:

protel SPE: The single property edition for medium-sized businesses and individual hotels.

protel MPE: The multi-property edition for central data management in hotel chains and cooperations.

protel Smart: The edition with limited scope of functionalities for small businesses.

protel MPE

protel Multi Property Edition is a central property management system to manage several properties within a single database. The internal separation of booking data, however, allows each property commercial independence (client). Still, with protel MPE you can monitor and control activities, revenues and reports across your entire organization or for just one client. Central feature of protel MPE is a shared address data base (guest profiles) which allows tracking guest information and production data in real time at every property. Reservations, availabilities and rates of all connected properties can easily be accessed and edited from a central reservation department for instance. The transparency and access of data of all businesses is organized by an extensive user right management.

Even for small hotel chains with only a few properties, working with protel MPE achieves the highest possible increase in effectiveness and thereby considerable time and cost savings. There is no limit in regard to the number and size of locations and to the distance between them and the central system. So provided the appropriate leased lines, systems can span the globe.

Setup

The setup for all editions installed on-site is the same. A software license code is required for activation. A hardware copy protection (dongle) is not used. This means it is always possible to update from a lower edition to a higher one, without having to re-install.

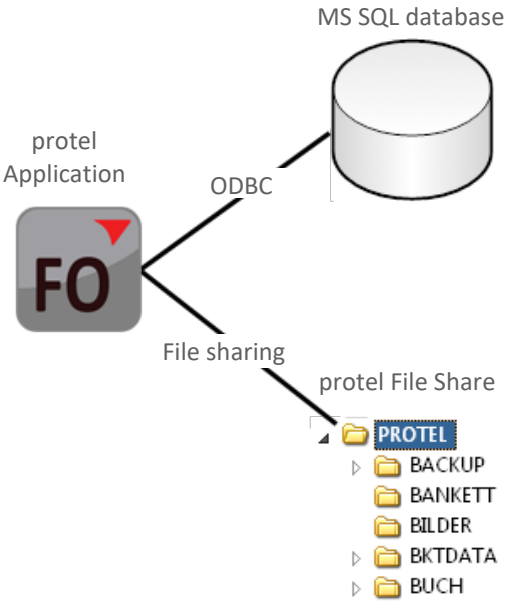
Database system

For all editions, only **Microsoft SQL Server (2012, 2014, 2016, 2017, 2019**) is used as database system. The Microsoft SQL Server must be available at least as the standard edition, all express versions are not supported. In combination with a

powerful hardware configuration, this allows high scalability from a single workstation to highly available cluster systems.

protel Application

The protel application comprises two executable files (.exe) and a configuration file (.ini), which are saved locally on a (client) PC or a terminal server where they can be executed. For the setup, you will receive an installation script on CD which has to be executed on every client or server. This will not influence the system registration. The connection to the SQL database is established via ODBC (System DSN via MDAC) with a single data base user (SQL Server authentication). To store documents and reports, a central data archive (file share) is also required. Every user needs full access to this directory.



Supported operating system

Minimum requirements

The minimum requirements described here **apply to systems on which the protel database will solely be operated**.
When working with server systems, we assume that a maximum of 20 simultaneous accesses to the database will be executed.
Please also remember the Microsoft guidelines for the SQL Server. The deployment of additional protel modules can lead to additional hardware and/or higher performance hardware being required. Please find further information in the documentation provided with the respective modules.

List of Compatible Operating Systems

This list contains operating systems which are compatible with protel MPE and *MS SQL Server 2019* (SQL Server Standard):

Compatible with MS SQL 2019

Windows Server 2019 Essentials
Windows Server 2019 Standard
Windows Server 2019 Datacenter
Windows Server 2016 Essentials
Windows Server 2016 Standard
Windows Server 2016 Datacenter
Windows 10 Pro
Windows 10 Enterprise
Windows 10 Education

Technical requirements for protel MPE

The type and scope of technical equipment required to run protel MPE depends on several factors. Not only the scope of the entire project but also the system availability requirements (redundancies) play a major role. Larger groups should consider engaging a professional company with its own computer center and appropriate safety standards to host their protel MPE.

The following should be considered when planning a central server system:

Factors influencing the system requirements

- The data lines (band width) between the properties and the location of the central server system
- Using a terminal server or a virtual desktop for an improved transmission performance
- Setting up a database and file service, to guarantee system stability
- The capacity of the protel COM server
- Additionally required protel interfaces and modules

Generally the number of users who simultaneously access the system influences the system requirements more than the size (number of rooms) of each location or the number of properties.

All these above stated requirements will now be discussed in detail.

Data lines (band width)

Generally properties within the protel MPE system are not directly connected with copper and fiber cables. For this reason it is highly advisable to use business networks from large providers such as MPLS or at least to use high-quality hardware components for a constant VPN connection via public networks. Reliable synchronized line connections are mandatory for the location of the central system.

In order to use protel MPE as a client-server application – just like in single property hotels –, a switched local network with a band width of at least 100 Mbits will be required. All other constellations absolutely require terminal sessions. The lines should solely be used to run protel MPE, as parallel traffic (such as Internet provided to guests etc.) can have a substantial negative effect on the performance of protel MPE.

Please note	Within protel MPE no replication of data between the central server and the connected properties is possible. In case of a line failure, the system is completely down and work cannot continue.

Recommended band widths

We recommend the following minimum band width:

- For the location of the central system (solely synchronized lines, exclusively for protel MPE)
  - Up to 40 simultaneous users: 4 MBit
  - Up to 100 simultaneous users: 8 MBit
- For location of the properties (stated is the download capacity for each property, exclusively for protel MPE)
  - Up to 20 simultaneous users: 2 MBit
  - Up to 50 simultaneous users: 4 MBit

Please note	These are the minimum requirements. Possible overbookings of the lines or other factors may require considerably higher band widths.

Terminal server operation

As previously mentioned, it is mandatory to operate protel MPE within terminal sessions or centrally hosted virtual desktops for locations with low bandwidth. Terminal services of Microsoft (Windows Server 2012/2016/2019) and VDI systems of Citrix (XenApp) and VMWare (VMWare View) are supported.

Full desktop

Operating with a full desktop is also highly recommended. This means apart from protel MPE, all other applications are centrally hosted: MS Office, all file and mail services, including their backups, virus protection and web browser. This has the advantage that the above mentioned line is solely used for the terminal sessions (transferred is merely the screen content by the terminal server) and protel MPE can also interact with applications perfectly.

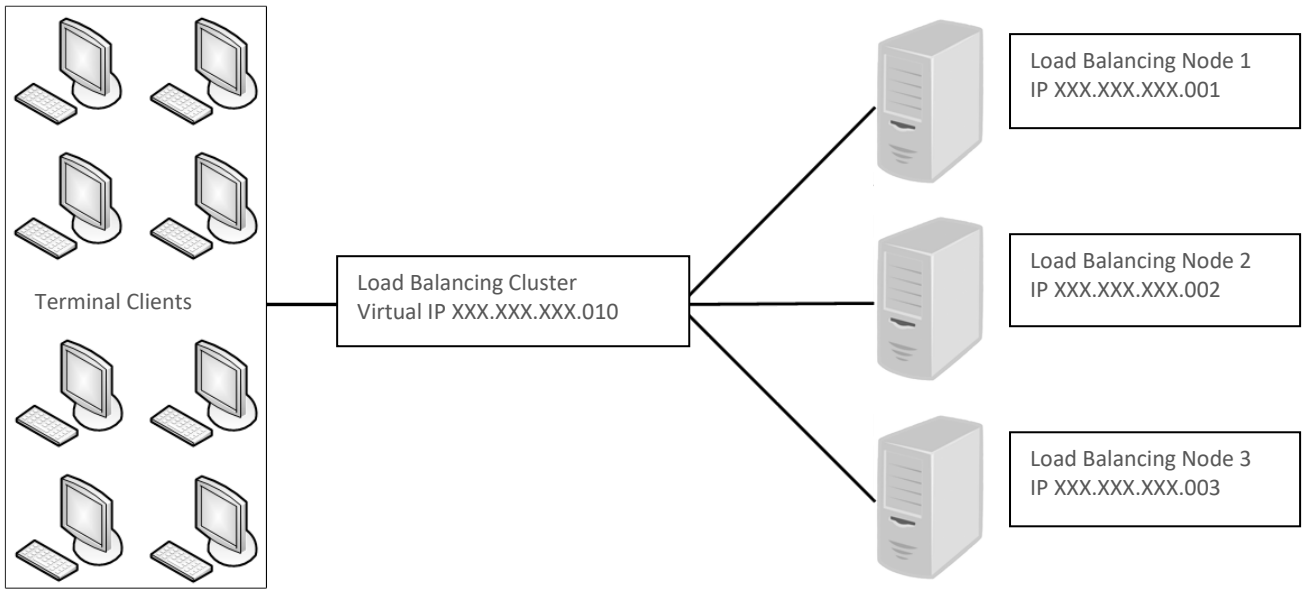
Thin clients

As the computing power shifted from the clients to the terminal server or VDI server during terminal sessions, the used hardware is essential. The so-called thin clients don't require high computing power. In any case, appropriate redundancies (hard disks, power supplies etc.) should be provided, to increase availability.

Plan reserves

It is also highly recommended to allow for reserves in case of longer down times due to hardware damages for instance. An appropriate scaling can be achieved with a so-called Load Balancing Cluster. During terminal sessions this will group any number of servers via a virtual IP address and makes them available. Virtual desktops are allocated on several servers. An equal distribution of the terminal or VDI sessions on the available servers (nodes) will be controlled by the operating system or special hardware components (Load Balancer).

Example: Load Balancing Cluster with three nodes



Hardware requirements of the terminal server

The following details are based on physical machines with Windows Server 2012/2016/2019, 64 bit.

An appropriate computing power can be achieved by various constellations and depends on the number of users. As minimum requirement we recommend:

- CPU:
  - Per 10 users: 1 Quad Core CPU
- RAM:
  - Per server for the operating system: 4 GB
  - Additionally per user: 500 MB

When using virtual terminal servers the above mentioned values should be increased by 20%.

Required resources for virtual desktops

For virtual desktops the following resources should be assigned:

- CPU:
  - 2 virtual CPU
- RAM:
  - Min. 1 GB RAM

The hardware of the host systems has to be selected referring to these requirements.

Database and file services

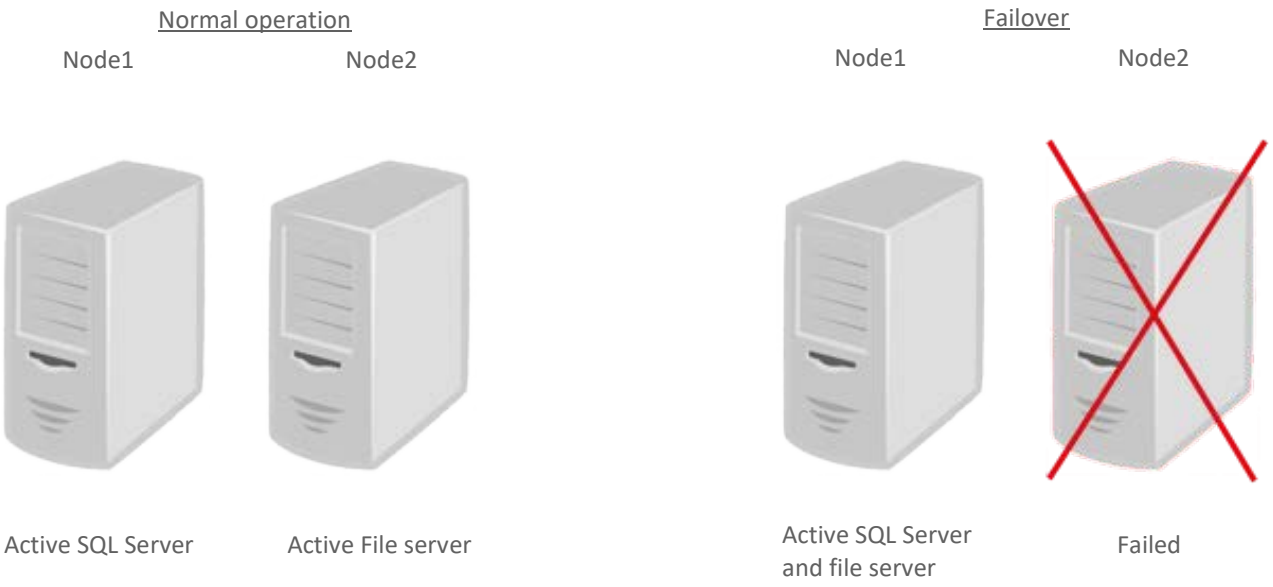
The heart of all protel Editions is the access to the MS SQL database and the fileserver. Up to a certain size both of these services can run on a server system. Alone for reasons of the redundancies bigger sized businesses (with 500 rooms and more or 40 or more users) should definitely use dedicated systems.

Create Failover Cluster

Using a Windows Failover Clusters in Active/Active mode is recommended. This means two identical servers (nodes) are interconnected to create a Failover Cluster whereas during normal operation one node runs the SQL services and the other system serves as file server. In case of the systems fails the other takes on both services according to the failover scenarios of the operating system.

Greatest system stability and reliability can be achieved by two active/passive cluster as this protects both servers with each one replacement unit.

Example: Active/Active Failover Cluster



Using a shared data storage (SAN) is mandatory whenever failover clusters are used.

Recommended hardware features for SQL and file server

The following details are based on physical machines with Windows Server 2016 / 2019 - 64 bit.

- Up to 200 rooms or 20 users: 1 Quad Core CPU, 8 GB RAM
- Up to 500 rooms or 40 users: 1 Quad Core CPU, 16 GB RAM
- Up to 1.000 rooms or 100 users: 2 Quad Core CPU, 32 GB RAM (cluster recommended)
- Up to 1,000 rooms or 100 users: At least 2 Quad Core CPU, at least 64 GB RAM (cluster recommended)

Due to the high data throughput, we strongly discourage using virtual servers for more than 500 rooms or 40 users.

protel COM server

Update of the protel sessions

The protel COM server is a specially configured session of the protel application, which ensures the notification/update of the protel sessions and connected interfaces (see chapter 5).

Recommended hardware equipment for COM server

The hardware can run in constellations up to 500 rooms on the SQL/file server.

For larger environments dedicated physical or virtual systems with the following equipment are suggested:

- Operating system: Windows 8, 8.1, Windows 10 - 64 bit, or Windows Server 2012, 2012 R2 - 64 bit, or Windows Server 2016 / 2019
- 1 Quad Core CPU
- RAM: 8 GB

Interfaces

Requirements for protel interfaces

To connect external systems such as telephone, pay-tv or card encoding systems a dedicated computer is required at each location. This computer has to be equipped with appropriate serial interfaces as needed. Communication with the central system is achieved via the leased line and the protel Com Server.

Recommended hardware equipment for interface computers

- Standard PC with client operating system and
- 4GB RAM.

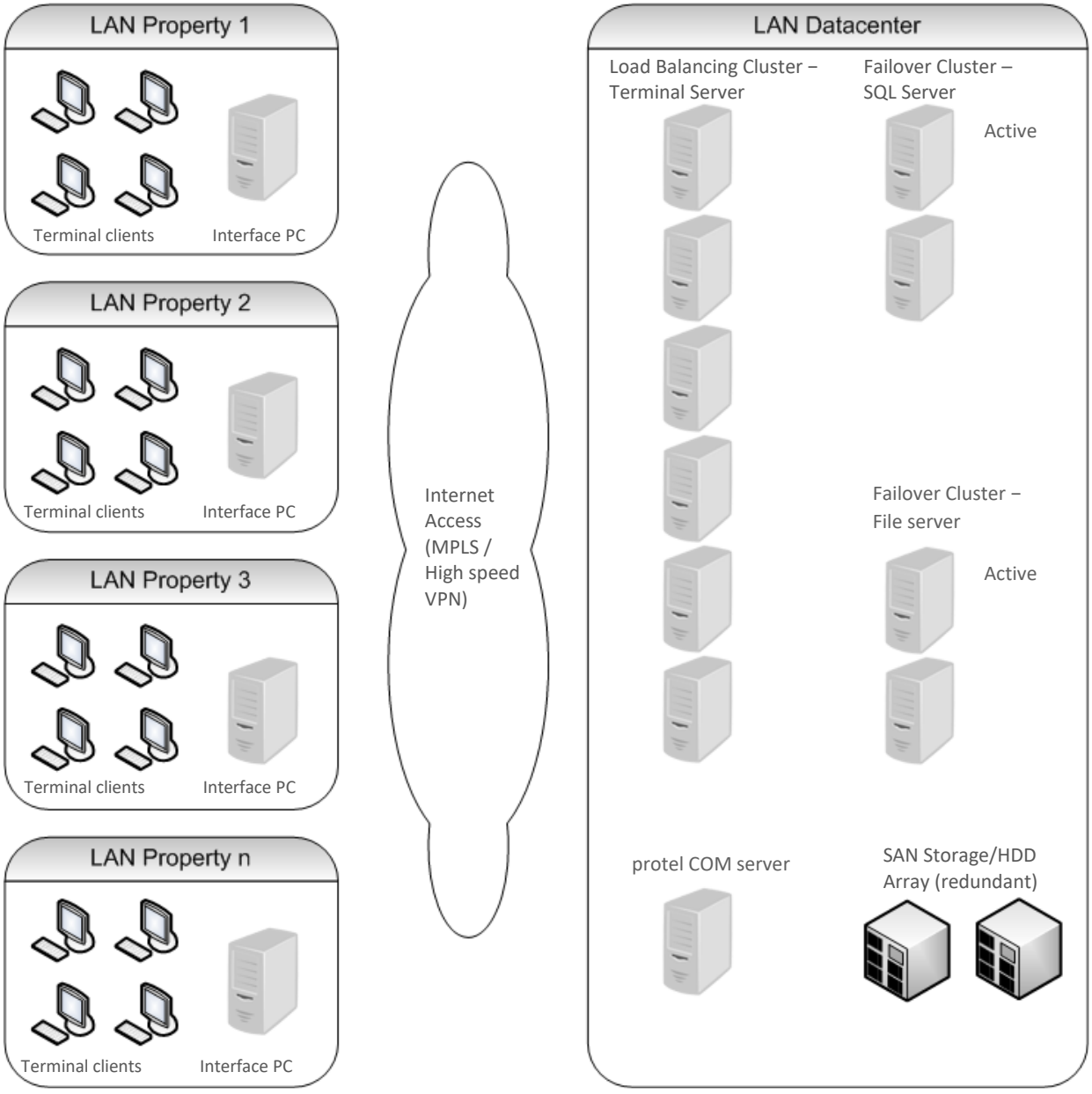
Additional protel modules

Special requirements

Running additional protel modules can require additional server systems. We'll be happy to advise you.

Configuration examples

Greatest possible redundancies



Example: protel MPE environment with greatest possible redundancies

Smallest possible server

Example: Smallest possible server configuration without redundancies (up to 200 rooms or 20 users)

About this manual

Symbols used in this documentation

- Background information and further information
- Please note: Important!

Please check: Is this the latest version?

Should you realize that certain processes described in this document seem incorrect, it is possible that you may not be using the latest version of this document.

All our documents are constantly updated in accordance with the ongoing development of the software. Should you be unsure about whether you are using the latest document, please feel free to contact us at documentation@protel.net.

Questions or suggestions are always welcome!

Feedback

If you are sure that you are using the latest version and still cannot find certain information or find the descriptions to be unclear, please write to: documentation@protel.net.

Need help?

If you need any support, please feel free to contact us at support@protel.net or +49 231 915 930.

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