Technical description of PROJEKTA Version 6.5 Datum: 14.03.2019

Architecture of PROJEKTA

Worldwide acces via the browser on desktop computers or smartphones (SSL encrypted)

Web server

Easy-to-handle authorization system creates security

The web server accesses the data via the application server

App server

Encrypts the position of the database

Interfaces to upstream or downstream applications

Database server

Integration of various external database systems possible. Default is IBM Informix.

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Fundamental to the structure of the system

PROJEKTA is a fully World Wide Web-based application based on the latest browser technology. This ensures that the application works without installation effort on the client. All that is required is a modern browser being available on the client.

Key advantages of modern web technology:

- No installation effort due to being browser-based
- Location independence - data availability everywhere through internet technology
- Usability of the application on Internet-enabled devices, such as:
  - PC
  - Tablet
  - Smartphone
- Ensuring the highest security requirements for data protection, according to the European General Data Protection Regulation

In addition, the application includes the technology for centralizing updates and / or upgrades over time without having to run client-side update work.

The high quality standard of the software is ensured by the use of modern versioning software, even with a distribution of updates / upgrades. This saves costs throughout the lifecycle of the software over many years.

Client / server communication

The communication from the client to the data in the database server takes place in the two product variants:

1. PROJEKTA ENTERPRISE
   via an internal company intranet
2. PROJEKTA Relax
   over the Internet as a "Software as a Service" application (SaaS)
   Organizations can access, evaluate, change or enter new data from any location and at any time.

For both product variants, the client accesses the data in the database server via the web server

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/ web service. For parts of the application, an additional "application server" is used. Thus, the client accesses the data of the database server exclusively indirectly via the browser after SSL encryption by means of a verified encryption certificate.

Both the database server incl. web server and the application server are housed exclusively in German data centers. These data centers are certified for the safe handling of data in accordance with DIN standards and also confirm this security procedure in writing. Both the "application server" and the "database server" are located in a so-called demilitarized zone, which means behind a specific firewall, in the respective data center.

System requirements - client side

For the use of the system on the client side, different input devices can optionally be used:

- Desktop computers
- Tablets
- Smartphones
- Terminal server with browser access

For PCs, the following minimum requirements apply:

- Processor with 1,5 GHz/core
  2,4 GHz or more recommended
- 2 GB RAM
  4 GB or more recommended
- Client Operating Systems
  here applies in principle: current operating system versions are recommended
  - Windows® 10
  - Windows® 8
  - Windows® 7 in 32bit/64Bit
  - Suse Linux or Ubuntu in 32bit/64Bit
  - MacOSX®
- the following browsers are released for the PCs:
  - MS Internet Explorer® from Vers. 11.0 or Edge
  - Mozilla® Firefox® Vers. 35 or higher
  - Google® Chrome® 42.x or higher
  - Apple® Safari® Vers. 9.x for MacOS or higher

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- If other browsers are used, please contact us.
  Please ensure that the browser of the client may execute JavaScript.
- incl. PDF Reader, either by the browser manufacturer or the Acrobat® PDF Reader

The following minimum requirements apply to smartphones & tablets:

- Apple devices:
  - iOS : Safari® (default browser) incl. PDF Reader
  - Google® Chrome® for iOS incl. PDF Reader
  - Mozilla® Firefox® incl. PDF Reader
- Android devices:
  - Google® Chrome® incl. PDF Reader
  - Mozilla® Firefox® incl. PDF Reader

Access to the Internet must be available and set up on each device.

Data security

The data security of the system is a crucial feature for use via the Internet.
The integrated SSL encryption via browser and "https: //" guarantees technical security. PROJEKTA is subject to the strictest security requirements with regard to the encryption of the entire database access and is constantly being further developed in this regard. All data access is protected by a dedicated database port and is therefore protected on the internet.

The user's client communicates with the database exclusively through the web server while working with PROJEKTA in order to ensure optimal operational security. Different security mechanisms are used to protect data from unauthorized access (malicious attempts to steal data may include SQL injection, cross-site scripting, clickjacking or phishing).

If PROJEKTA is operated in an ENTERPRISE-setup (on premise) using an installed SSL / HTTPS certificate is recommended. This safety feature is always given in the hosted PROJEKTA Relax version. In this case, a secure connection between the client and server is established, which transmits all data streams only in encrypted form. Thus, a state-of-the-art maximum secure communication is guaranteed. In addition, the number of ports involved in the communication between client and server is minimized.

The customizable rights management of PROJEKTA guarantees an additional maximum of security in the handling and use of the data. The administrator users are eligible to define

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different user roles and / or user permissions. Thus the user controls the respective access authorities.

The passwords of a user are additionally encrypted via a special security algorithm by the application in order to make the access to PROJEKTA even more secure.

In addition, a split encryption to two right holders according to the "four-eyes-principle" is possible for the particularly protective role of the customer administrator.
Please contact us.

Integrated system components from 3rd parties

The system uses the following system components from different manufacturers:

- IBM® Database DB2 IDS 11.7
  (incl. Informix® - Client for the ODBC interface)
- Apache Webserver Version 2.4 or higher
- Apache Tomcat Applicationserver Version 7.0 or higher
- PHP Version 5.3.5
- BBL-Software PROJEKTA Modular system in its current version.

Interfaces to and from other systems

PROJEKTA can be integrated via interfaces according to defined requirements of the IT infrastructure. Depending on the requirements, both import and export functions are available for:

- Customer and HR master data
- Structured project data
- Cost center and cost unit accounting
- Financial accounting data

In addition, there are other interfaces to:

- Microsoft Office®
- free Office products (e.g. OpenOffice.org®)
- Accounting systems:
  - FibuNet®
  - SAP®

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    - Datev®
    - Sage/KHK®
    - MS Dynamics® (Navision®)
- Communication solutions like:
    - MS Outlook®
    - Lotus Notes®
    - Mozilla®Thunderbird®
- CRM Software like:
    - Oracle®
    - Salesforce
    - Sage
- ERP systems
- IBM® AS/400® or i-Series data connection

Thanks to the available database technology from IBM, interfaces can always be adapted to individual needs, upgradeable or newly created. As a "German software manufacturer" with 100% ownership of the source code, we are here for further inquiries and requests.
Please contact us.

System requirement - server side

If PROJEKTA ENTERPRISE is to be used as an OnPremise (on-site) solution, the following requirements are placed on the server as the minimum configuration for the system:

- Quad core processor with at least 2.26 GHz / core
- at least 8 GB RAM
  (16 GB RAM or higher recommended)
- at least 500 GB free hard disk space
    - plus at least 50 GB on external drive for backups
- free communication port
    - individually selectable between port 1526 - 1538
- following communication ports:
    - 80, 8080 and 8081 must be available for app servers
    - additional use of port 443 in SSL / HTTPS operation
- operating system:
    - Ubuntu 14.04.2 LTS (64 Bit) or higher
- IBM® databse DB2 IDS 11.7 or higher

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(incl. Informix® - client for the ODBC interface)
- web server: Apache 2.4 or higher
- application server: Apache Tomcat 7.0 or higher

Database, web and application servers can optionally be installed on a common or separate hardware device, as required.
For the use of PROJEKTA we recommend an appropriately configured hardware on which both the database, the web and application server are installed in such a way that PROJEKTA can be used fully operationally.

For further questions regarding the use as an in-house solution or in your own data center, please contact us.

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