



# Environment Guidelines

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tisoware.VERSION 24R1 – as of August 22, 2024

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# 1. Prologue

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In the following document, you will find our environment guidelines. Some applications are marked as *reported*, indicating that their operability has been reported to us from external or internal sources. Our intention is to always support the latest versions of databases, MS Office, operating systems, etc. This also applies to virtual servers. The relevant approvals will be released promptly.

Announcements from hardware and software providers regarding products that will no longer be supported by the provider at the release date of the latest tisoware version may result in the functionality and security of tisoware in connection with these products being compromised or insufficient.

tisoware has implemented Unicode General Availability since version 11.1a. ANSI versions will no longer be released. This means, when updating from previous versions, you will have to convert the database to Unicode and possibly also adjust custom programming (triggers, procedures, interfaces, etc.).

While the previous ASCII dataset represented one character in one byte, Unicode uses two bytes per character, which can affect the required memory space in the database, the transmitted data rate, etc.

The environment guidelines represent the requirements from tisoware. If there are other consumers that, for example, claim file storage space in the database or data volumes from the data transfer rate supported in the IT infrastructure, this should be considered accordingly and sufficiently.

The implementation of data protection aspects and legal regulations (especially GDPR and BSI) when using our products may depend on the nature of their use and configuration, and is therefore outside the responsibility of tisoware, but lies within the responsibility of the customers.

## 2. Requirements

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Please note the minimum operating system requirements.

### **Database server, application server, and web server (each)**

#### ***Recommended System requirements***

- 3.1 GHz multi-core 64-bit processor
- 8 GB RAM
- 160 GB hard drive capacity
- Network connection of at least 1 GB

### **Client**

#### ***Minimum System requirements***

- Processor: Intel Core i5 or higher, or equivalent
- 4 GB RAM
- 10 GB free hard drive capacity
- 128 MB current graphics processor

### **Time synchronization**

The customer should take appropriate measures to ensure the prevalence of correct and synchronized system time for consistent time tracking, i.e., time synchronization across the network, the system, servers, and clients/end devices.

## 3. Environment Guidelines for tisoware.VERSION 24R1

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### 3.1 Databases

- Oracle: 12c, 12c-R2, 18c, 19c
- MS SQL Server: 2016-R2, 2017, 2019, 2022, 2017 Express, 2019 Express, 2022 Express  
(The 2016 and 2017 versions have already reached their Mainstream Support End Date)  
(on Windows) Express Version Restrictions:  
Utilization of 1 CPU socket or 4 cores max., utilization of 1 GB of RAM max.,  
and a max. database size of 10 GB

The database must have a suitable 32-bit ODBC driver to connect to the tisoware database.

Database licenses are generally not included in tisoware licenses.

### 3.2 Server Operating System

(Database server, application server, web server)

- Windows Server 2016 (Mainstream Support End Date reached)
- Windows Server 2019
- Windows Server 2022

### 3.3 Client Operating System

- Windows 10 (Windows 10S not supported)
- Windows 11

### 3.4 Excel

The Excel export feature has been implemented in tisoware.ZEIT using LibXL and the generation of XLSX files. These files can be viewed both with MS Excel (Office 365) and externally with XLSX-capable free office suites.

A fully functional installation of MS Word and MS Excel for administration and process definition requires the tisoware.AKTE HR module and the Form Management transaction.

The export function to MS Excel, included in the tisoware.REPORT runtime license (viewer) for Crystal Reports 2020, is still available, but it has been implemented using conventional methods. Any associated limitations (formatting, the need for local Office installations, etc.) are beyond our control and warranty. Properly formatted Excel exports of specific reports can be examined and, if necessary, implemented by our support team as part of a commissioned service.

### 3.5 E-Mails

- tisoware.MESSAGE  
SSL configurable in Connection.Config:  
none, TLS 1.2 (min. .NET 4.7), TLS 1.3 (min. .NET 4.8)

### 3.6 Exchange Connection (External Calendar Functions)

- Exchange 2016, Exchange 2019
- Office 365
- SSL configurable in Connection.Config:
- TLS 1.2 (min. .NET 4.7), TLS 1.3 (min. .NET 4.8), OAuth2.0

### 3.7 Single Sign-On in tisoware WEB (SSO)

Support is exclusively available from version 11.3a in conjunction with Azure AD (Azure Active Directory).

### 3.8 proALPHA ERP Interface

Compatibility	pA 5.2	pA 6.x	pA 7.x	pA 8.x	pA 9.x
tw 10.9a	Limited	Compatible	Compatible	Unknown	Incompatible
tw 10.9b	Limited	Compatible	Compatible	Unknown	Incompatible
tw 10.9c	Limited	Compatible	Compatible	Unknown	Incompatible
tw 11.1a	Limited	Compatible	Compatible	Unknown	Incompatible
tw 11.1b	Limited	Compatible	Compatible	Compatible	Incompatible
tw 11.1c	Limited	Compatible	Compatible	Compatible	Incompatible
tw 11.1d1	Limited	Compatible	Compatible	Compatible	Compatible
tw 11.2a	Limited	Compatible	Compatible	Compatible	Compatible
tw 11.3a	Limited	Compatible	Compatible	Compatible	Compatible
tw 11.4a	Limited	Compatible	Compatible	Compatible	Compatible
tw 24R1	Limited	Compatible	Compatible	Compatible	Compatible

### 3.9 tisoware.WEB

tisoware.WEB is based on HTML5. The plausibility check of the page content is based on JavaScript. Various third-party components (application software, plugins) are available on the market for the different operating systems and browsers. Accordingly, it cannot be guaranteed comprehensively that all functionalities of tisoware software are compatible with these components.

#### 3.9.1 tisoware.ZUTRITTvisual

Aimetis as of version 7.6.0.7

#### 3.9.2 Browsers

While a website typically only displays static content or information, a web application focuses on interaction. In the case of tisoware.WEB, these interactions involve significant and sometimes highly sensitive business processes in human resources and other areas of the company. Therefore, the choice of browser for tisoware.WEB and tisoware.CLOUD is particularly important.

There is explicitly no support for MS Internet Explorer 11 (and its predecessors).

The respective browsers have various configuration options and security policies that can affect both the functionality and display of the tisoware application and must be appropriately configured to ensure the functioning of specific transactions.

Our final test for version 24R1 took place under the following browser versions:

- MS EDGE Chromium 127.0.2651.98
- Google Chrome 127.0.6533.100
- Mozilla Firefox 129.0

Further tests were conducted on the MacOS operating system version Ventura 14.6.1 (23G93) with the following browser version:

- Safari 17.6 (19618.3.11.11.5)

#### 3.9.3 Web Backend

- as of IIS 8.0

#### 3.9.4 Web Frontend

- Java Runtime:  
Java JDK 17.0.12.+7
- Apache Tomcat:  
Version: 10.1.28

### 3.10 tisoware.WEBmobile and Customer-Specific Intranet

For optimal performance, we recommend a 4G or 5G connection.

As part of the services to be commissioned, tisoware supports the integration of tisoware.WEB into a customer-specific intranet. The provision of tisoware.WEB in the intranet is at the sole responsibility of the customer, especially in terms of access and security.

### 3.10.1 Smartphones & Tablets

- Android operating system  
as of versions 7.0  
Latest: 14
- iOS & iPadOS operating system  
as of versions: 11.1.2  
Latest: 17

### 3.10.2 Browser Versions of Mobile Devices

#### **iOS & iPadOS:**

- Safari (pre-installed Apple browser app):  
Version: 17 (depending on iOS version)
- Google Chrome (iOS):  
Version: 117.0.55938.108

#### **Android:**

- Internet (pre-installed Samsung browser app):  
Version: 17.0.6.9 (depending on the device)
- Google Chrome (Android):  
Version: 117.0.5938.60 (depending on the device)

## 3.11 tisoware.APP

For optimal performance, we recommend a 4G or 5G connection.

(Please refer to the compatibility requirements of the required operating systems in the detailed description of the Google Play Store or Apple App Store.)

To benefit from the new features and bug fixes, we recommend installing the latest version from the respective app store.

The windows version of the tisoware.APP requires a 64-Bit operating system.

The quality assurance tests were conducted with the following devices and versions:

#### **Windows IoT**

- Edition: Windows 10 IoT Enterprise LTSCWindows IoT
- Version: 21H2
- Installed on: August 4, 2023
- Operating system build: 19044.3324
- Performance: Windows Feature Experience Pack 1000.19041.1000.0



### 3.12 Special Notes on Cloud Service

#### tisoware.APP

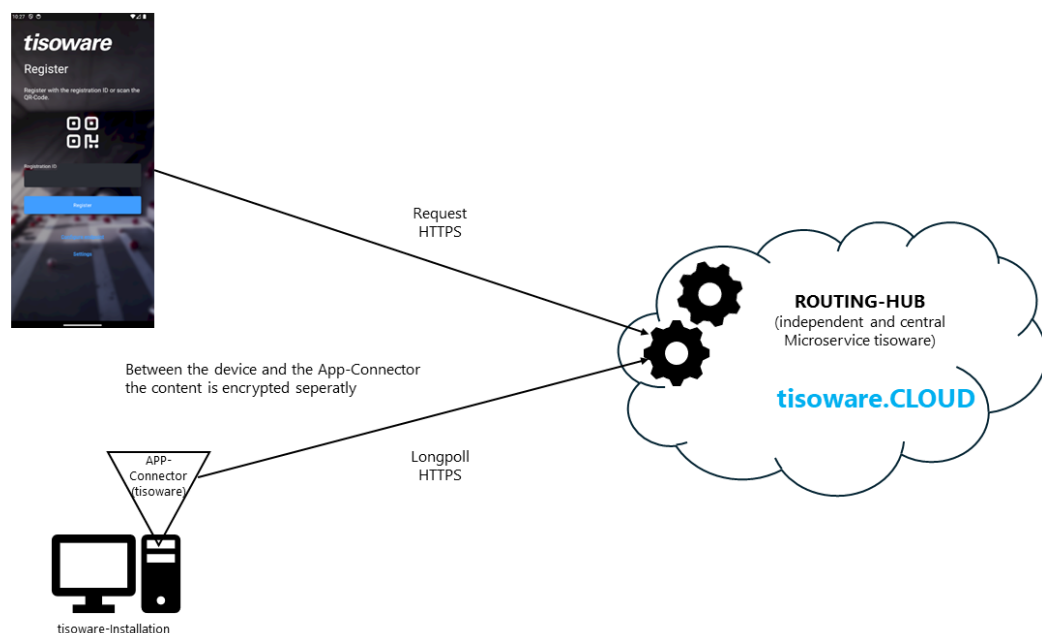
The APP Connector connects from the tisoware.Server via HTTP(S) long polls to the APP Routing HUB.

For this purpose, it requires access to the *dtac.tisocloud.de* resource on port: 443/https.

tisoware.APP HR also connects to the central cloud routing hub via HTTPS requests.

tisoware.APP HR does not require direct access to the tisoware.INSTALLATION.

Inbound firewall openings or a VPN connection are not necessary for this. However, outgoing communication should not go through a proxy (not even transparently).



#### tisoware.eAU

The connection is initiated by the tisoware REST client and actively establishes a connection to <https://dtkk.tisocloud.de>. For this, the server running the IIS process for the REST client (REST API platform) must be able to connect to the target URL (<https://dtkk.tisocloud.de> / port 443). This may need to be configured and unblocked on the customer's side (firewall/proxy, etc.).

### 3.13 Data Transfer

#### dormakaba: B-COMM:

- No further support is provided for B-COMM Win 32
- Recently tested and approved: version 5.5  
Please refer to our separate approvals.

#### PCS INTUS COM:

- Please refer to our separate approvals.

#### DATAFOX:

- Please refer to our separate approvals.

### 3.14 Reporting Engine (Crystal Report)

- Crystal Report 2020:  
32-bit  
requires .NET 4.0

### 3.15 X GANTT (32-Bit)

- Version:  
tisoware.BDE: 4.4  
tisoware.PROJEKTplus: 4.4
- Operating systems: Windows 10, Windows 11

### 3.16 Optimizer

#### **File interface (DualOpt.dll; 32-bit)**

- Version: 1502
- Operating systems: Windows 10, Windows 11

#### **Database interface (gp-c-api.dll)**

- Version: 6.4.21
- Operating systems: Windows 10, Windows 11

### 3.17 tisoware.AUSWEIS

Since version 11.1a, image capture using IDECard (including WebCams) or Canon Utility, as well as image editing using Paint.NET, has become obsolete. Contemporary image capture methods using mobile devices can be conveniently used for this purpose.

The subsequent processing in the respective transactions (e.g., badge layout) continues to function as usual. The advantages of taking and transmitting pictures using mobile devices lie in the low costs, good image quality of modern smartphone cameras, and their widespread availability.

### 3.18 .NET Frameworks (x86)

- TwMessage: .NET 4.7.2 (for TLS 1.3 min. .NET 4.8)
- TwExchange: .NET 4.7.2 (for TLS 1.3 min. .NET 4.8)
- Crystal Report 2020: .NET 4.0
- Kaba Table Reader B-web 9108: .NET 4.5
  
- twConnectService .NET 8
- twProzRest .NET 8
- TwReportRest .NET 4.8
- twClientRest .NET 4.8
- twDatevRestClient .NET 4.8

- (Windows) TWGuard .NET 8

### 3.19 Virtualization

The use of tisoware on virtual servers is generally possible. However, it must be examined on a project-specific basis whether the virtualization software used in individual cases is suitable for all application areas. A general approval of tisoware on virtual servers is therefore not possible; in any case, the performance of the virtualization environment must meet our requirements for physical machines.

Successful customer installations are known to us in conjunction with:

- VMWARE vSphere ESX/ESXi
- Hyper-V

As part of a commissioned service, we can offer an appointment to verify the functionality of tisoware with the planned virtualization software.

### 3.20 MS Terminal Server / Citrix

Some customers have successfully installed and operated tisoware with Citrix / Xen and MS Terminal Server. So far, no errors have been reported to us that could be attributed to the use of Citrix or MS Terminal Server.

### 3.21 WiFi and VPN

Operating tisoware applications in WiFi or VPN communication networks is generally possible. However, we cannot assure or warrant functionality due to the specific infrastructure as the operation may be limited or experience performance issues depending on coverage, latency, and connectivity.

We recommend using remote desktop services or Citrix solutions. tisoware.WEB applications and tisoware.APP are exceptions to this recommendation.