

## Service Description

Lywand Software GmbH is a cybersecurity company based in Austria with the mission to rethink IT security and make it easier than ever before.

To this end, an automated security audit platform has been developed that provides MSPs with an efficient tool to regularly review and sustainably improve the IT security situation of SMEs.



# 1. Security Check

## External Check

Lywand carries out a comprehensive check of the external infrastructure (e.g. web servers, VPN gateways, mail servers, web applications, etc.) for security vulnerabilities and possible gateways from the perspective of a potential attacker. A check is also carried out to determine whether there are any stolen company data records in circulation on the darknet.

Lywand operates a scan cluster that is based on a broad foundation. Scanners developed in-house and adapted open source tools are used for this purpose. In the background is a database with over 150,000 vulnerabilities.

### Check Scope



The test area for the external security check is created on the basis of the second level domain (SLD) by using a variety of techniques and methods to capture the entire associated attack surface.

- + **Subdomain discovery:** All subdomains that exist under the SLD are identified. This is done using techniques such as brute force, the use of subdomain dictionaries and queries of DNS zone transfers (AXFR).
- + **Email discovery:** The content of the identified websites is crawled on the basis of the SLD and associated e-mail addresses are searched for.
- + **IP Addresses:** IP addresses for which no specific domain or subdomain is stored can be added manually in the check area.

### Check Methods



- + **Known security gaps:** A daily updated CVE vulnerability database helps to quickly identify new gaps in security.
- + **Configuration and encryption:** "Best practice" standards are reviewed and any deviations are reported as weaknesses.
- + **Web security:** Web applications are checked for the OWASP Top 10 security risks.
- + **Password leaks:** Data leaks are detected by a connection to the HIBP database

### Frequency



Checks of the external infrastructure are carried out automatically on a monthly basis as standard. The interval of the ongoing checks can be configured at any time. An additional check can also be triggered manually as required.

### Duration



The duration of the security check can vary and depends on the size of the scope of the check. For a small or medium-sized infrastructure, the check takes approx. 1-3 hours; for a large infrastructure, it may take several hours.

### Setup



For the external scan, it is important that the IP addresses are enabled on the company's firewall to prevent the scan from being blocked. The IP addresses that must be enabled are: 52.58.126.186, 18.158.3.134 and 3.74.19.219.

## Agent Check

Our specially developed lywand Agent is responsible for checking internal end devices such as client or server systems. This is installed on compatible Windows devices and checks the system for known vulnerabilities (CVEs), best practice configurations and current patch statuses.

In addition, basic security mechanisms such as the Windows firewall, up-to-date anti-virus software and the use of Office macros are also checked. The results of the check are updated daily in the platform.

## Check Scope



The internal infrastructure, consisting of client and server end devices, is checked daily using the lywand agent. This runs imperceptibly in the background and is always up to date thanks to auto-updates. The following operating systems are supported: Windows 11, 10, 8.1, 7 and Microsoft Server 2022, 2019, 2016, 2012R2.

The Agent is available in two formats: MSI and EXE. The MSI format is used as standard by software distribution tools. There is an automatic update mechanism that ensures that the installed Agent on the end devices is always up to date.

## Check Methods



- + System hardening
- + Known security vulnerabilities (CVE)

## Products



The following products are tested:

Products	Platform
.Net core	Windows
7Zip	Windows
AIMP	Windows
AOL Instant Messenger	Windows
Activeperl	Windows
Adobe AIR	Windows
Adobe Acrobat DC Classic	Windows
Adobe Acrobat DC continuous	Windows
Adobe Animate	Windows
Adobe Brackets	Windows
Adobe Bridge	Windows
Adobe Captivate	Windows
Adobe Creative Cloud	Windows
Adobe Digital Editions	Windows
Adobe Dreamweaver	Windows
Adobe Flash Media Server	Windows
Adobe Flash Player ActiveX	Windows
Adobe Flash Player Npapi	Windows
Adobe Flash Player Ppapi	Windows
Adobe Illustrator	Windows
Adobe Indesign	Windows
Adobe Media Encoder	Windows
Adobe Photoshop	Windows
Adobe Reader	Windows

Adobe Reader DC classic	Windows
Adobe Reader DC continous	Windows
Adobe Shockwave Player	Windows
Adobe presenter	Windows
AnyDesk	Windows
Apache HTTP Server	Windows
Apache Tomcat	Windows
Apple QuickTime	Windows
Apple Safari	Windows
Apple iCloud	Windows
Apple iTunes	Windows
Audacity	Windows
Cacti	Windows
Calibre	Windows
Ccleaner	Windows
Cisco Anyconnect	Windows
Cisco Network Assistant	Windows
Cisco Security Device Manager	Windows
Citrix Receiver	Windows
Comodo Antivirus	Windows
Confluence server	Windows
Cygwin	Windows
Dell SupportAssist	Windows
Dropbox	Windows
Evernote	Windows
FlashGet	Windows
Foxit Reader	Windows
GPG4Win	Windows
Ghostscript	Windows
Git	Windows
Google Chrome	Windows
Google Earth	Windows
Google Picasa	Windows
Google Sketchup	Windows
Inkscape	Windows
Jenkins	Windows
JetBrains YouTrack	Windows
K-meleon	Windows
Lan Messenger	Windows

Lenovo System Update	Windows
LibreOffice	Windows
Malwarebytes	Windows
Mozilla FireFox	Windows
Mozilla Firefox ESR	Windows
Mozilla SeaMonkey	Windows
Mozilla Thunderbird	Windows
Mozilla Thunderbird ESR	Windows
MySQL	Windows
MySQL Connector/Net	Windows
Notepad++	Windows
OpenOffice	Windows
OpenSSH	Windows
OpenSSL	Windows
OpenVPN Client	Windows
Opera	Windows
Oracle Java JDK	Windows
Oracle Java JRE	Windows
Oracle Mapviewer	Windows
Oracle VirtualBox	Windows
PGP Desktop	Windows
PaleMoon	Windows
PaloAlto Networks GlobalProtect Agent	Windows
Pidgin	Windows
PostgreSQL	Windows
PowerZip	Windows
Powershell	Windows
Putty	Windows
Python	Windows
RealPlayer	Windows
RealVNC	Windows
Skype	Windows
Sumatra PDF	Windows
TeamViewer	Windows
TightVNC	Windows
Trillian	Windows
UltraVNC	Windows
VLC MediaPlayer	Windows
Vmware Movie Decoder	Windows

Vmware Player	Windows
Vmware Tools	Windows
Vmware Workstation	Windows
Vsphere Client	Windows
WinRar	Windows
WinSCP	Windows
Winamp	Windows
Winzip	Windows
Wireshark	Windows
Adobe ColdFusion	Windows
Cisco WebEx Meetings	Windows
Zoom Client	Windows
Symantec Endpoint Protection	Windows
JetBrains PyCharm	Windows
JetBrains PhpStorm	Windows
JetBrains TeamCity	Windows
JetBrains IntelliJ	Windows
JetBrains WebStorm	Windows
Microsoft .NET Framework 1.0	Windows
Microsoft .NET Framework 1.1	Windows
Microsoft .NET Framework 2.0	Windows
Microsoft .NET Framework 3.0	Windows
Microsoft .NET Framework 3.5	Windows
Microsoft .NET Framework 3.5.1	Windows
Microsoft .NET Framework 4	Windows
Microsoft .NET Framework 4.0	Windows
Microsoft .NET Framework 4.5	Windows
Microsoft .NET Framework 4.5 SP1	Windows
Microsoft .NET Framework 4.5 SP2	Windows
Microsoft .NET Framework 4.5.1	Windows
Microsoft .NET Framework 4.5.2	Windows
Microsoft .NET Framework 4.6	Windows
Microsoft .NET Framework 4.6.1	Windows
Microsoft .NET Framework 4.6.2	Windows
Microsoft .NET Framework 4.7	Windows
Microsoft .NET Framework 4.7.1	Windows
Microsoft .NET Framework 4.7.2	Windows
Microsoft .NET Framework 4.8	Windows
Microsoft .NET core runtime 1.0	Windows

Microsoft .NET core runtime 1.1	Windows
Microsoft .NET core runtime 2.0	Windows
Microsoft .NET core runtime 2.1	Windows
Microsoft .NET core runtime 2.2	Windows
Microsoft .NET core runtime 3.0	Windows
Microsoft .NET core runtime 3.1	Windows
Microsoft .Net Framework 3.5	Windows
Microsoft .Net Framework 4.0	Windows
Microsoft 3D Viewer	Windows
Microsoft ASN.1 Library	Windows
Microsoft ASP .NET MVC 2.0	Windows
Microsoft ASP .NET MVC 3.0	Windows
Microsoft ASP .NET MVC 4.0	Windows
Microsoft ASP .NET core 1.0	Windows
Microsoft ASP .NET core 1.1	Windows
Microsoft ASP .NET core 2.0	Windows
Microsoft ASP .NET core 2.1	Windows
Microsoft ASP .NET core 2.2	Windows
Microsoft ASP .NET core 3.0	Windows
Microsoft ASP .NET core 3.1	Windows
Microsoft Access 2000	Windows
Microsoft Access 2002	Windows
Microsoft Access 2003	Windows
Microsoft Access 2010	Windows
Microsoft Access 2013	Windows
Microsoft Access 2016	Windows
Microsoft Active Directory Federation Services	Windows
Microsoft Agent	Windows
Microsoft Anti-Cross Site Scripting Library	Windows
Microsoft Antigen for Exchange	Windows
Microsoft Antigen for SMTP Gateway	Windows
Microsoft Azure Storage Explorer	Windows
Microsoft BizTalk Server 2002	Windows
Microsoft BizTalk Server 2004	Windows
Microsoft ChakraCore	Windows
Microsoft Chart Controls	Windows
Microsoft Color Management Module	Windows
Microsoft Commerce Server 2002	Windows
Microsoft Commerce Server 2007	Windows

Microsoft Commerce Server 2009	Windows
Microsoft Commerce Server 2009 R2	Windows
Microsoft Communicator 2007 R2	Windows
Microsoft Content Management Server	Windows
Microsoft CryptoAPI	Windows
Microsoft Data Access Components	Windows
Microsoft Data Access Components 2.1	Windows
Microsoft Data Access Components 2.5	Windows
Microsoft Data Access Components 2.6	Windows
Microsoft Data Access Components 2.7	Windows
Microsoft Data Access Components 2.8	Windows
Microsoft DirectPlay	Windows
Microsoft DirectShow	Windows
Microsoft Distributed Transaction Coordinator	Windows
Microsoft Dynamics 365	Windows
Microsoft Edge	Windows
Microsoft Edge (Chromium-based)	Windows
Microsoft Edge Business (Chromium-based)	Windows
Microsoft Enhanced Mitigation Experience Toolkit	Windows
Microsoft Excel 2000	Windows
Microsoft Excel 2002	Windows
Microsoft Excel 2003	Windows
Microsoft Excel 2007	Windows
Microsoft Excel 2010	Windows
Microsoft Excel 2013	Windows
Microsoft Excel 2016	Windows
Microsoft Excel 97	Windows
Microsoft Excel Viewer	Windows
Microsoft Excel Viewer 2003	Windows
Microsoft Excel Viewer 2007	Windows
Microsoft Exchange 2000 Server	Windows
Microsoft Exchange Server	Windows
Microsoft Exchange Server 2000	Windows
Microsoft Exchange Server 2003	Windows
Microsoft Exchange Server 2007	Windows
Microsoft Exchange Server 2010	Windows
Microsoft Exchange Server 2013	Windows
Microsoft Exchange Server 2016	Windows
Microsoft Exchange Server 5.0	Windows



Microsoft Exchange Server 5.5	Windows
Microsoft Exchange Server MAPI Client and Collaboration Data Objects 1.2.1	Windows
Microsoft Expression Design	Windows
Microsoft Expression Design 2	Windows
Microsoft Expression Design 3	Windows
Microsoft Expression Design 4	Windows
Microsoft Expression Web	Windows
Microsoft FAST Search Server 2010 for SharePoint	Windows
Microsoft FTP Service 7.0	Windows
Microsoft FTP Service 7.5	Windows
Microsoft Forefront Protection 2010 for Exchange Server	Windows
Microsoft Forefront Security for Exchange Server	Windows
Microsoft Forefront Security for SharePoint	Windows
Microsoft Forefront Threat Management Gateway	Windows
Microsoft Forefront Threat Management Gateway Client	Windows
Microsoft Forefront Unified Access Gateway 2010	Windows
Microsoft FrontPage 2003	Windows
Microsoft FrontPage Server Extensions 2000	Windows
Microsoft FrontPage Server Extensions 2002	Windows
Microsoft Groove Server 2007	Windows
Microsoft Groove Server 2010	Windows
Microsoft Host Integration Server 2000	Windows
Microsoft Host Integration Server 2000 Administrator Client	Windows
Microsoft Host Integration Server 2004	Windows
Microsoft Host Integration Server 2004 Client	Windows
Microsoft Host Integration Server 2006	Windows
Microsoft Host Integration Server 2009	Windows
Microsoft Host Integration Server 2010	Windows
Microsoft Hyper-V	Windows
Microsoft Hyper-V Server	Windows
Microsoft Indexing Service	Windows
Microsoft InfoPath 2003	Windows
Microsoft InfoPath 2007	Windows
Microsoft InfoPath 2010	Windows
Microsoft Infopath 2010	Windows
Microsoft Infopath 2013	Windows
Microsoft Input Method Editor Japanese	Windows
Microsoft Interactive Training	Windows
Microsoft Internet Explorer	Windows

Microsoft Internet Explorer 10	Windows
Microsoft Internet Explorer 11	Windows
Microsoft Internet Explorer 5	Windows
Microsoft Internet Explorer 5.01	Windows
Microsoft Internet Explorer 6	Windows
Microsoft Internet Explorer 7	Windows
Microsoft Internet Explorer 8	Windows
Microsoft Internet Explorer 9	Windows
Microsoft Internet Information Server (IIS) 5.0	Windows
Microsoft Internet Information Server (IIS) 5.1	Windows
Microsoft Internet Information Server (IIS) 6.0	Windows
Microsoft Internet Information Server (IIS) 7.0	Windows
Microsoft Internet Information Server (IIS) 7.5	Windows
Microsoft Internet Information Server 5.0	Windows
Microsoft Internet Information Server 5.1	Windows
Microsoft Internet Information Server 6.0	Windows
Microsoft Internet Information Server 7.0	Windows
Microsoft Internet Information Server 7.5	Windows
Microsoft Internet Information Server 8.0	Windows
Microsoft Internet Information Server 8.5	Windows
Microsoft Internet Information Services 7.0	Windows
Microsoft Internet Information Services 7.5	Windows
Microsoft Internet Information Services 8.0	Windows
Microsoft Internet Information Services 8.5	Windows
Microsoft Internet Security and Acceleration Server 2000	Windows
Microsoft Internet Security and Acceleration Server 2004	Windows
Microsoft Internet Security and Acceleration Server 2006	Windows
Microsoft JScript 5.6	Windows
Microsoft JScript 5.7	Windows
Microsoft JScript 5.8	Windows
Microsoft Jet 4.0 Database Engine	Windows
Microsoft Jet Database Engine	Windows
Microsoft Live Meeting 2007	Windows
Microsoft Live Meeting 2007 Add-In	Windows
Microsoft Live Meeting 2007 Add-in	Windows
Microsoft Live Meeting 2007 Console	Windows
Microsoft Lync 2010	Windows
Microsoft Lync 2010 Attendant	Windows
Microsoft Lync 2010 Attendee	Windows

Microsoft Lync Basic 2013	Windows
Microsoft Lync Server 2010	Windows
Microsoft Lync Server 2013	Windows
Microsoft MSN Messenger	Windows
Microsoft Mail	Windows
Microsoft Management Console	Windows
Microsoft Media Encoder	Windows
Microsoft Media Player	Windows
Microsoft Media Services 4.1	Windows
Microsoft Media Services 9	Windows
Microsoft Office	Windows
Microsoft Office 2000	Windows
Microsoft Office 2000 SP3	Windows
Microsoft Office 2000 Web Components	Windows
Microsoft Office 2002	Windows
Microsoft Office 2003	Windows
Microsoft Office 2003 Web Components	Windows
Microsoft Office 2007	Windows
Microsoft Office 2010	Windows
Microsoft Office 2010 Filter Pack	Windows
Microsoft Office 2013	Windows
Microsoft Office 2016	Windows
Microsoft Office Access 2003	Windows
Microsoft Office Access 2007	Windows
Microsoft Office Access 2010	Windows
Microsoft Office Access 2013	Windows
Microsoft Office Access 2016	Windows
Microsoft Office Compatibility Pack	Windows
Microsoft Office Converter Pack	Windows
Microsoft Office Forms Server 2007	Windows
Microsoft Office Groove 2007	Windows
Microsoft Office IME	Windows
Microsoft Office IME Japanese 2007	Windows
Microsoft Office InfoPath 2003	Windows
Microsoft Office InfoPath 2007	Windows
Microsoft Office OneNote 2007	Windows
Microsoft Office PowerPoint 2000	Windows
Microsoft Office PowerPoint 2000 Service Pack 3	Windows
Microsoft Office PowerPoint 2002	Windows

Microsoft Office PowerPoint 2002 Service Pack 3	Windows
Microsoft Office PowerPoint 2003	Windows
Microsoft Office PowerPoint 2003 Service Pack 3	Windows
Microsoft Office PowerPoint 2007	Windows
Microsoft Office PowerPoint 2010	Windows
Microsoft Office PowerPoint Viewer	Windows
Microsoft Office PowerPoint Viewer 2003	Windows
Microsoft Office Publisher 2002	Windows
Microsoft Office Publisher 2003	Windows
Microsoft Office Publisher 2007	Windows
Microsoft Office Publisher 2010	Windows
Microsoft Office SharePoint Server 2007	Windows
Microsoft Office SharePoint Server 2010	Windows
Microsoft Office Small Business Accounting 2006	Windows
Microsoft Office Visio 2002	Windows
Microsoft Office Visio 2003	Windows
Microsoft Office Visio 2007	Windows
Microsoft Office Visio Professional 2002	Windows
Microsoft Office Visio Professional 2003	Windows
Microsoft Office Visio Viewer 2003	Windows
Microsoft Office Visio Viewer 2007	Windows
Microsoft Office Web Apps	Windows
Microsoft Office Web Apps 2010	Windows
Microsoft Office Web Apps 2013	Windows
Microsoft Office Web Apps Server 2010	Windows
Microsoft Office Web Apps Server 2013	Windows
Microsoft Office Web Apps server 2013	Windows
Microsoft Office Word Viewer	Windows
Microsoft Office XP	Windows
Microsoft Office XP SP2	Windows
Microsoft Office XP SP3	Windows
Microsoft Office XP Web Components	Windows
Microsoft OneDrive	Windows
Microsoft OneNote 2007	Windows
Microsoft OneNote 2010	Windows
Microsoft OneNote 2013	Windows
Microsoft OneNote 2016	Windows
Microsoft Outlook	Windows
Microsoft Outlook 2000	Windows

Microsoft Outlook 2002	Windows
Microsoft Outlook 2003	Windows
Microsoft Outlook 2007	Windows
Microsoft Outlook 2010	Windows
Microsoft Outlook 2013	Windows
Microsoft Outlook 2016	Windows
Microsoft Outlook Express	Windows
Microsoft Outlook Express 5.5	Windows
Microsoft Outlook Express 6	Windows
Microsoft Outlook Express 6.0	Windows
Microsoft Paint 3D	Windows
Microsoft PowerPoint	Windows
Microsoft PowerPoint 2000	Windows
Microsoft PowerPoint 2002	Windows
Microsoft PowerPoint 2003	Windows
Microsoft PowerPoint 2007	Windows
Microsoft PowerPoint 2010	Windows
Microsoft PowerPoint 2013	Windows
Microsoft PowerPoint 2016	Windows
Microsoft PowerPoint Viewer	Windows
Microsoft PowerPoint Viewer 2007	Windows
Microsoft PowerPoint Viewer 2010	Windows
Microsoft PowerShell Core	Windows
Microsoft PowerShell Core 6.0	Windows
Microsoft PowerShell Core 6.1	Windows
Microsoft PowerShell Core 6.2	Windows
Microsoft PowerShell Core 7.0	Windows
Microsoft Powerpoint 2000	Windows
Microsoft Powerpoint 2002	Windows
Microsoft Powerpoint 2003	Windows
Microsoft Powerpoint 2010	Windows
Microsoft Powerpoint 2013	Windows
Microsoft Powerpoint 2016	Windows
Microsoft Producer 2003	Windows
Microsoft Project 2000	Windows
Microsoft Project 2002	Windows
Microsoft Project 2002 SP1	Windows
Microsoft Project 2003	Windows
Microsoft Project 2007	Windows

Microsoft Project 2010	Windows
Microsoft Project 2013	Windows
Microsoft Project 2016	Windows
Microsoft Project Server 2010	Windows
Microsoft Project Server 2013	Windows
Microsoft Publisher	Windows
Microsoft Publisher 2000	Windows
Microsoft Publisher 2002	Windows
Microsoft Publisher 2003	Windows
Microsoft Publisher 2007	Windows
Microsoft Publisher 2010	Windows
Microsoft Publisher 2013	Windows
Microsoft Publisher 2016	Windows
Microsoft Report Viewer	Windows
Microsoft Report Viewer 2008 Redistributable Package	Windows
Microsoft SQL Server 2000	Windows
Microsoft SQL Server 2000 Analysis Services	Windows
Microsoft SQL Server 2000 Desktop Engine (WMSDE)	Windows
Microsoft SQL Server 2000 Reporting Services	Windows
Microsoft SQL Server 2005	Windows
Microsoft SQL Server 2008	Windows
Microsoft SQL Server 2008 R2	Windows
Microsoft SQL Server 2012	Windows
Microsoft SQL Server 2014	Windows
Microsoft SQL Server 2016	Windows
Microsoft SQL Server 2017	Windows
Microsoft SQL Server 2019	Windows
Microsoft SQL Server Management Studio Express	Windows
Microsoft Search Server 2008	Windows
Microsoft Security Essentials	Windows
Microsoft Service Bus 1.1	Windows
Microsoft SharePoint Designer 2007	Windows
Microsoft SharePoint Designer 2010	Windows
Microsoft SharePoint Designer 2013	Windows
Microsoft SharePoint Foundation 2010	Windows
Microsoft SharePoint Foundation 2013	Windows
Microsoft SharePoint Server 2007	Windows
Microsoft SharePoint Server 2010	Windows
Microsoft SharePoint Server 2013	Windows

Microsoft SharePoint Server 2013 Client Components SDK	Windows
Microsoft SharePoint Server 2016	Windows
Microsoft SharePoint Server 2019	Windows
Microsoft SharePoint Services 2.0	Windows
Microsoft SharePoint Services 3.0	Windows
Microsoft SharePoint Team Services	Windows
Microsoft SharePoint Workspace 2010	Windows
Microsoft Sharepoint Server 2007	Windows
Microsoft Sharepoint Server 2010	Windows
Microsoft Sharepoint Server 2013	Windows
Microsoft Sharepoint Team Services	Windows
Microsoft Silverlight	Windows
Microsoft Silverlight 4	Windows
Microsoft Silverlight 5	Windows
Microsoft Skype For Business 2016	Windows
Microsoft Skype For Business Basic 2016	Windows
Microsoft Skype for Business 2016	Windows
Microsoft Skype for Business Basic 2016	Windows
Microsoft System Center Configuration Manager 2007	Windows
Microsoft System Center Configuration Manager 2007 R2	Windows
Microsoft System Center Configuration Manager 2007 R3	Windows
Microsoft System Center Operations Manager 2007	Windows
Microsoft System Center Operations Manager 2007 R2	Windows
Microsoft System Center Operations Manager 2012	Windows
Microsoft System Center Operations Manager 2012 R2	Windows
Microsoft Systems Management Server 2003	Windows
Microsoft Teams	Windows
Microsoft Telnet Service	Windows
Microsoft Transaction Server (MTS)	Windows
Microsoft VBScript	Windows
Microsoft VBScript 5.6	Windows
Microsoft VBScript 5.7	Windows
Microsoft VBScript 5.8	Windows
Microsoft Virtual Machine (VM)	Windows
Microsoft Virtual PC 2004	Windows
Microsoft Virtual PC 2007	Windows
Microsoft Virtual Server 2005	Windows
Microsoft Virtual Server 2005 R2	Windows
Microsoft Visio 2002	Windows

Microsoft Visio 2002 SP2	Windows
Microsoft Visio 2003	Windows
Microsoft Visio 2007	Windows
Microsoft Visio 2010	Windows
Microsoft Visio 2013	Windows
Microsoft Visio 2016	Windows
Microsoft Visio Viewer 2002	Windows
Microsoft Visio Viewer 2007	Windows
Microsoft Visio Viewer 2010	Windows
Microsoft Visual Basic 6.0	Windows
Microsoft Visual Basic for Applications	Windows
Microsoft Visual C++ 2005 Redistributable Package	Windows
Microsoft Visual C++ 2005 Redistribution Pkg	Windows
Microsoft Visual C++ 2008 Redistributable Package	Windows
Microsoft Visual C++ 2008 Redistribution Pkg	Windows
Microsoft Visual C++ 2010 Redistribution Pkg	Windows
Microsoft Visual FoxPro	Windows
Microsoft Visual FoxPro 8.0	Windows
Microsoft Visual FoxPro 9.0	Windows
Microsoft Visual Studio	Windows
Microsoft Visual Studio .NET 2002	Windows
Microsoft Visual Studio .NET 2003	Windows
Microsoft Visual Studio 2005	Windows
Microsoft Visual Studio 2008	Windows
Microsoft Visual Studio 2010	Windows
Microsoft Visual Studio 2012	Windows
Microsoft Visual Studio 2013	Windows
Microsoft Visual Studio 2015	Windows
Microsoft Visual Studio 2017	Windows
Microsoft Visual Studio 2019	Windows
Microsoft Visual Studio Code ESLint extension	Windows
Microsoft Visual Studio Code Maven Java extension	Windows
Microsoft Visual Studio Team Foundation Server	Windows
Microsoft Visual Studio Team Foundation Server 2010	Windows
Microsoft Visual Studio Team Foundation Server 2012	Windows
Microsoft Visual Studio Team Foundation Server 2013	Windows
Microsoft Visual Studio Team Foundation Server 2015	Windows
Microsoft Visual Studio Team Foundation Server 2015 Update 4.2	Windows
Microsoft Visual Studio Team Foundation Server 2017	Windows



Microsoft Visual Studio Team Foundation Server 2017 Update 3.1	Windows
Microsoft Visual Studio Team Foundation Server 2018	Windows
Microsoft Visual Studio Team Foundation Server 2018 Update 1.1	Windows
Microsoft Visual Studio Team Foundation Server 2018 Update 1.2	Windows
Microsoft Visual Studio Team Foundation Server 2018 Update 2	Windows
Microsoft Visual Studio Team Foundation Server 2018 Update 3	Windows
Microsoft Visual Studio Team Foundation Server 2018 Update 3.1	Windows
Microsoft Visual Studio Team Foundation Server 2018 Update 3.2	Windows
Microsoft Windows Azure Software Development Kit	Windows
Microsoft Windows Backup Manager	Windows
Microsoft Windows Defender	Windows
Microsoft Windows Essentials 2011	Windows
Microsoft Windows Essentials 2012	Windows
Microsoft Windows Fax Services Cover Page Editor	Windows
Microsoft Windows HTTP Services	Windows
Microsoft Windows Live Mail	Windows
Microsoft Windows Live OneCare	Windows
Microsoft Windows Mail	Windows
Microsoft Windows Media Center	Windows
Microsoft Windows Media Center TV Pack	Windows
Microsoft Windows Message Queuing Service	Windows
Microsoft Windows Messenger	Windows
Microsoft Windows Messenger 4.7	Windows
Microsoft Windows Messenger 5.1	Windows
Microsoft Windows Remote Desktop Connection 6.1	Windows
Microsoft Windows Remote Desktop Connection 7.0	Windows
Microsoft Windows Remote Desktop Connection 7.1	Windows
Microsoft Windows Remote Desktop Connection 8.0	Windows
Microsoft Windows Remote Desktop Connection 8.1	Windows
Microsoft Windows Search 4.0	Windows
Microsoft Windows SharePoint Services 2.0	Windows
Microsoft Windows SharePoint Services 3.0	Windows
Microsoft Windows Workstation Service	Windows
Microsoft Wireless Display Adapter	Windows
Microsoft Wireless LAN AutoConfig Service	Windows
Microsoft Word	Windows
Microsoft Word 2000	Windows
Microsoft Word 2002	Windows
Microsoft Word 2003	Windows

Microsoft Word 2007	Windows
Microsoft Word 2010	Windows
Microsoft Word 2013	Windows
Microsoft Word 2016	Windows
Microsoft Word 97	Windows
Microsoft Word 98	Windows
Microsoft Word Viewer	Windows
Microsoft Word for Windows 6.0 Converter	Windows
Microsoft Wordpad	Windows
Microsoft Works	Windows
Microsoft Works 6-9 File Converter	Windows
Microsoft Works 8	Windows
Microsoft Works 8.5	Windows
Microsoft Works 9	Windows
Microsoft XML Core Services 3.0	Windows
Microsoft XML Core Services 4.0	Windows
Microsoft XML Core Services 5.0	Windows
Microsoft XML Core Services 6.0	Windows
Microsoft live meeting 2007	Windows
Microsoft VS code TS-Lint extension	Windows
Microsoft VS code Remote-SSH extension	Windows
Microsoft VS code Language Support for Java extension	Windows
Microsoft VS code Java Extension pack	Windows
VS Code GitHub Pull Requests Extension	Windows
VS Code Kubernetes Tools Extension	Windows
VS Code Remote Containers	Windows
Microsoft Web Media Extensions	Windows
Microsoft Accessibility Insights for Web	Windows
Microsoft .Net Education Bundle and .NET install tool	Windows
.NET Education Bundle SDK Install Tool	Windows
.NET Install Tool for Extension Authors	Windows
Microsoft Remote Desktop Client	Windows
Microsoft VS code jshint extension	Windows
Microsoft VS code Python Extension	Windows
PowershellGet Module	Windows
Microsoft Windows Codecs extensions	Windows
Microsoft Azure AD Connect	Windows
Microsoft Azure AD Connect Provisioning Agent	Windows
Azure Open Management Infrastructure	Windows

Microsoft Office 2019	Windows
Microsoft Office 2021 LTSC	Windows
Microsoft WSL extension	Windows
Microsoft Office 2021 for Mac	Windows
Microsoft Endpoint Configuration Manager	Windows
Microsoft Visual Studio Code Jupyter extension	Windows
Microsoft Dynamics NAV 2018	Windows
Microsoft Windows Sysmon	Windows
Microsoft Windows Terminal	Windows
Microsoft Visual Studio 2022	Windows
Microsoft .NET core runtime 7.0	Windows
Microsoft 3d Builder	Windows
Microsoft Azure Service Fabric	Windows
Sharepoint Server Subscription edition	Windows
Microsoft Remote Desktop App	Windows
Microsoft SQL Server 2022	Windows
Microsoft TeamsJS	Windows
Apache CouchDB	Windows
Atlassian Bamboo CI Server	Windows
Avant Browser	Windows
Avast! AntiVirus	Windows
AVG AntiVirus	Windows
Bit Defender	Windows
BSPlayer	Windows
CA Internet Security Suite	Windows
CuteFTP	Windows
Docker	Windows
Dropbox	Windows
F-Secure AntiVirus	Windows
FileZilla Server	Windows
FireBird	Windows
Flock	Windows
Foxit PhantomPDF	Windows
GIMP	Windows
GoodTech SSH Server	Windows
Google backup and sync	Windows
IBM DB2	Windows
IBM WebSphere Application Server	Windows
ImageMagick	Windows

ImgBurn	Windows
IrfanView	Windows
KasperSky AV	Windows
KM Player	Windows
Mongo DB	Windows
Novell Groupwise	Windows
PHP	Windows
Puppet Agent	Windows
RaidenFTPD	Windows
Recuva	Windows
Ruby	Windows
Ruby on Rails	Windows
SolarWinds TFTP Server	Windows
Telegram Desktop	Windows
Trend Micro Internet Security	Windows
Vmware Horizontal Client	Windows
WinGate	Windows
WSO2 API Manager	Windows
BlueJeans Desktop	Windows
Cisco Jabber	Windows
Cisco Proximity	Windows
RSA Secure ID Token	Windows
Solarwinds Event Log Forwarder	Windows
Solarwinds SCP/SFTP Server	Windows
PHP for WAMP/XAMPP	Windows
Indusoft WebStudio	Windows
Apache Spark	Windows
Grails Framework	Windows
TechSmith Screen Capture Codec	Windows
MS Azure RTOS	Windows
Amazon Chime	Windows
VeraCrypt	Windows
Atom	Windows
Mimecast	Windows
Amazon Chime	Windows
Httrack	Windows
Clickshare extension	Windows
Pair Downloader	Windows
Techsmith camtasia	Windows

Spring Cloud Function	Windows
Wazuh Agent	Windows
Jamovi	Windows
Apache Jena	Windows
Node.js	Windows
Bento4	Windows
Atlassian Jira Server	Windows
Okta ScaleFT	Windows
Atlassian Bitbucket Server	Windows

#### Frequency



The first check takes place directly after installation on the end device. Each end device is then automatically checked on a daily basis.

#### Duration



As soon as the Agent is installed on an end device, the first check begins. Depending on the scope of the existing software, it can take between one and several hours for the results to be visible in the platform.

### Network Check

Checking the internal network infrastructure makes it possible to detect vulnerabilities on devices in the internal network on which no lywand Agent is installed.

To perform internal Network Checks, a special Gateway must first be configured. This Gateway is placed in the internal network and establishes a connection to a scan cluster that performs the Network Check. The scan cluster used here (Greenbone Cloud Services) was developed by [Greenbone AG](#), one of the world's leading providers of open source vulnerability management.

#### Check Scope



The check scope for internal Network Checks includes a variety of systems that are detected by our Asset Discovery feature in the specified network, including device types such as Linux servers, printers, IoT devices, routers, smartphones, and many more.

#### Check Methods



- + Common vulnerabilities and exposures (CVE)
- + Configuration and encryption
- + System hardening

#### Frequency



The frequency of checks of the internal infrastructure can be configured in the platform. There is a choice of weekly, monthly or quarterly security checks. It is also possible to trigger an internal Network Check manually in the platform at any time if required.

#### Duration



An internal Network Check can take up to several hours, depending on the size of the network and the number of devices present. As soon as the check is completed, the results are updated in the platform.

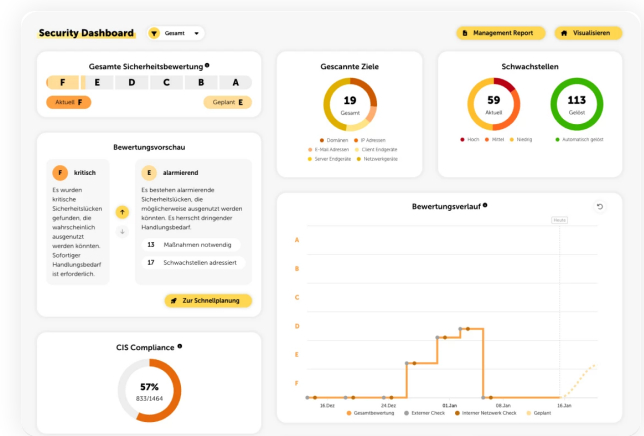
## 2. Presentation of the Results

Lywand displays the results of a security audit in different ways depending on the use case. The security dashboard is suitable for a rough overview. The House Analogy is suitable for visualizing vulnerabilities. The Check Insights and Vulnerabilities pages are suitable for technical details.

### Security Dashboard

Once a security audit has been completed, the company's security situation is clearly displayed on the Security Dashboard. Specifically, the following results are displayed:

- + General safety rating, in the American school grading system from A to F
- + Overview of number & risk distribution of vulnerabilities
- + Historical development of ratings
- + List of the most vulnerable targets and products
- + Individual assessment of various security categories (passwords, software up-to-dateness, web security, etc.)



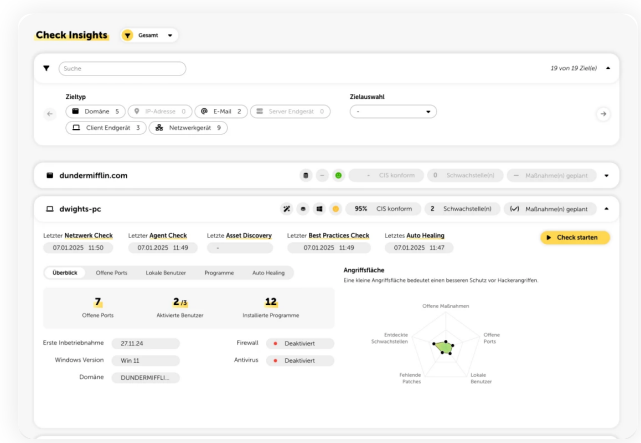
### House Analogy

The House Analogy is a graphical representation of the security situation. The current security situation of the company is illustrated with the help of a house. A distinction is made between five different sub-areas: Front door, façade, windows, letterbox and garbage. These reflect the condition of the building - and therefore the current IT security situation.



## Check Insights

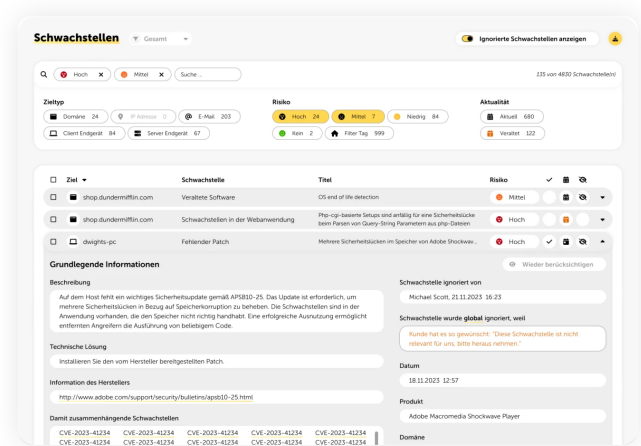
The Check Insights tab contains all information on the security check and the check methods used. This tab is particularly informative for viewing the current status of the checked targets. For example, open ports, activated users and installed programs as well as information on the initial startup, Windows version, domain, firewall and antivirus are displayed here.



## Vulnerabilities

In the menu item "Vulnerabilities" there is a list of all weaknesses found with the respective detailed information:

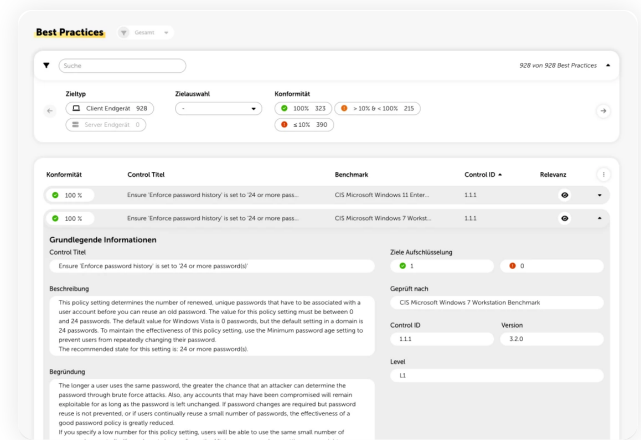
- + Description & technical solution to fix the vulnerability
- + Proof of the check on the basis of which the vulnerability was found
- + Risk breakdown & CVSS vector for assessing criticality
- + Date on which the vulnerability was found
- + Network port, IP address(es) & solution type
- + Recommended measures



## Best Practices

The menu item "Best Practices" provides an overview of the conformity of the targets according to CIS Benchmarks.

The degree of fulfillment of the CIS Benchmarks can be viewed, as well as detailed descriptions and effects of the individual CIS Benchmark Controls.



### 3. Vulnerability Management

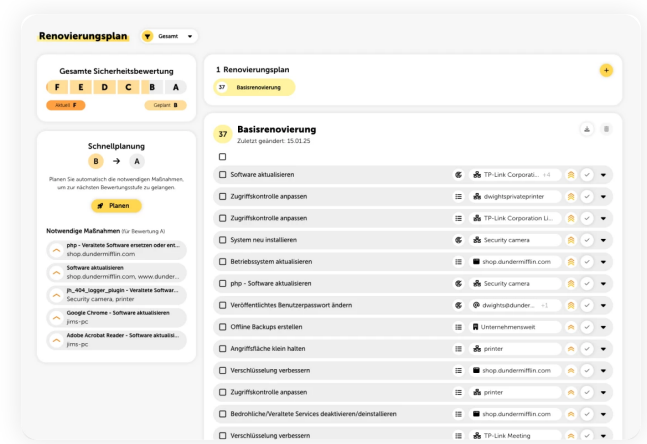
#### Prioritization of Weaknesses

An individual risk assessment is created for each vulnerability, which is made up of the following factors:

- + **Severity:** CVSS (Common Vulnerability Scoring System) is used to determine the severity. This score takes into account various metrics such as the impact on the confidentiality, integrity and availability of data as well as the complexity of the exploitation of the vulnerability.
- + **Probability of occurrence:** EPSS (Exploit Prediction Scoring System) is used to determine the probability of occurrence. Artificial intelligence is used daily to determine how likely it is that the discovered vulnerability will be exploited by an attacker within the next 30 days.
- + **Known exploited vulnerability:** CISA's Known Exploited Vulnerabilities (KEV) catalog shows whether a vulnerability has already been successfully exploited, as well as vulnerabilities associated with ransomware campaigns.

#### Planning of Measures

To improve IT security, lywand proposes specific recommendations for action to resolve the vulnerabilities found. These are grouped so that it is possible to eliminate a large number of vulnerabilities with a small number of measures. Measures can be planned in the renovation plan, in the individual security categories or on the Vulnerabilities page. The renovation plan serves as a to-do list to support the planning and implementation of measures.



#### Elimination of Weaknesses

Lywand offers extensive information on the elimination of vulnerabilities. You can navigate from the measure to the individual weak points. As soon as a measure has been completed, it can be ticked off in the corresponding line in the renovation plan.

Optionally, internal vulnerabilities can be automatically remedied on the end devices using the "Auto-Healing" feature. The following products can be updated automatically via the agent:

- + Microsoft Windows Suite
- + Java ab Version 6
- + Firefox ab Version 31
- + Foxit PDF Reader

#### Validation of the Vulnerabilities

During the next security review, lywand will check whether the implemented measure is actually effective and whether the security gaps have been eliminated.

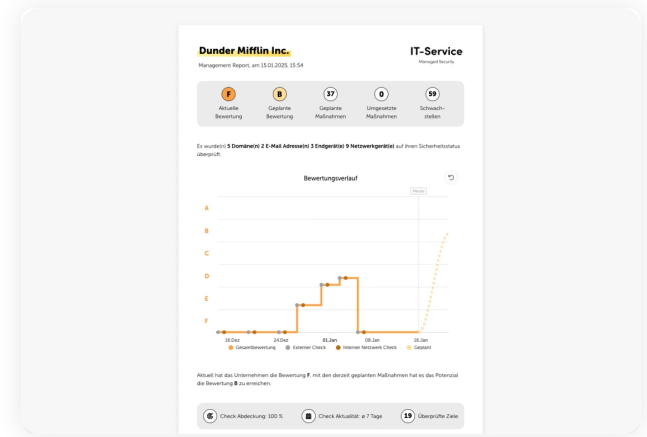


## 4. Reporting & Data Export

### Management Report

The Management Report summarizes the results of the safety review in a compact and easy-to-understand format. In addition to the current overall rating, it contains a breakdown of the best and worst categories.

It also shows how the rating has developed over time and which rating can be achieved with the planned measures. The reviewed objectives, their risk and the review methods used are also listed.

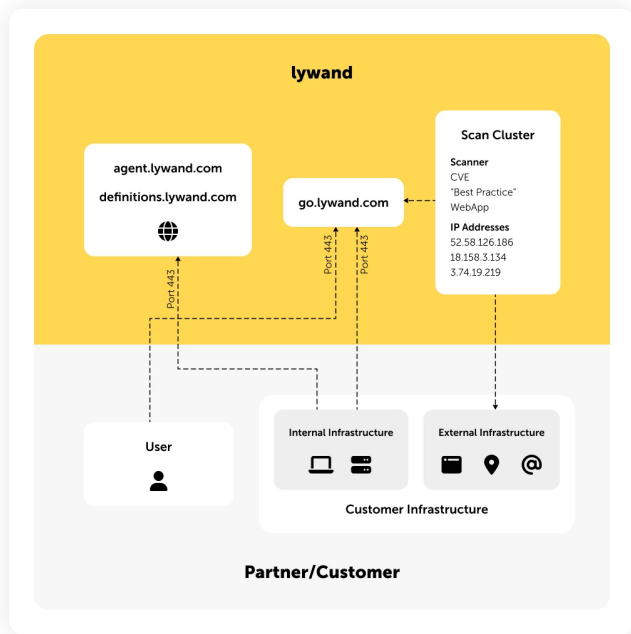


### Export Options

- + **Measures:** The renovation plan includes all planned measures and can be exported as a CSV file.
- + **Vulnerabilities:** Detailed information on the weak points can be exported as a CSV file.
- + **Best Practices:** The CIS Benchmark Controls can be exported as a CSV file, including detailed descriptions, degree of fulfillment and a list of fulfilled and unfulfilled targets.

## 5. Architecture

Lywand is operated in the AWS Cloud in Frankfurt, Germany. The data center is both physically and digitally secured and certified according to proven IT standards (ISO 27001, ISO 27017, ISO 27018, PCI DSS and many more certifications).



## 6. Certifiability

Dealing with the topic of risk and vulnerability management is a prerequisite for many companies. lywand provides comprehensive support in these areas in particular and helps with the implementation of the following certifications or management systems:

- + ISMS
- + NIS2
- + ISO 27001
- + TISAX
- + IT-Grundschutz nach BSI

## 7. Data Protection

As an Austrian company, lywand is subject to all legal provisions of the European Union. As a result, lywand works in compliance with the GDPR and places the highest value on data protection. If required, an order processing contract (AVV) can be requested at any time.

The lywand servers are hosted within the EU, more precisely in Frankfurt/Germany. The data center has the highest security standards and certifications.

### Technical and Organizational Measures

The following technical and organizational measures are taken to protect personal data.

#### Entry Control



Entry control at the Frankfurt data center is ensured by AWS and is certified in accordance with ISO/IEC 27001:2013. These certifications are carried out by independent external auditors.

#### Access Control



Access to the data processing systems is ensured by means of the following measures:

##### Technical measures:

- + Multi-factor authentication (user name, password, OTP, biometrics)
- + Access only via logged bastion host using asymmetric cryptography
- + Zero-trust environment
- + No publication of remote access
- + Encryption of data carriers
- + Logged and tamper-proof infrastructure through "Infrastructure as Code"

##### Organizational measures:

- + User authorizations are logged and versioned
- + Central password assignment
- + Enforcement of a secure password

#### Handling Control



Measures that ensure that persons authorized to use a data processing system can only access the data subject to their access authorization and that personal data cannot be read, copied, modified or removed without authorization during processing, use and after storage:

##### Technical measures:

- + Encryption of data storage devices

##### Organizational measures:

- + Data is not required outside the data processing systems
- + Role-based access control

#### Separation Control



Measures to ensure that data collected for different purposes can be processed separately:

##### Technical measures:

- + Separation of production and test environments
- + Physical separation of the systems (located in different data centers)

- + Multi-client capability of the data records

## Transfer Control



Measures to ensure that personal data is not read, copied, altered or removed without authorization during electronic transmission or during its transport or storage on data carriers:

### Technical measures:

- + Transport encryption

## Input Control



Measures that ensure that it is possible to subsequently check and determine whether and by whom personal data has been entered, modified or removed from data processing systems:

### Technical measures:

- + Technical logging of the entry, modification and deletion of access data

## Pseudonymization



No pseudonymization of the data is necessary. Test and development systems work with artificial test data.

## Encryption



Measures that ensure data encryption:

### Technical measures:

- + Encryption of data in transit using TLS
- + Database encryption (AES-256)
- + Encrypted and controlled access to data processing systems

## Availability (of the data)



Measures to ensure that personal data is protected against accidental destruction or loss:

### Technical measures:

- + Use of fail-safe storage methods (availability: 99.999999999% / year)
- + Data mirroring between two data centers
- + Daily backups

### Organizational measures:

- + Regular data recovery tests
- + Storage of the data backup outside the server room

## Load Capacity (of the systems)



Measures to ensure that personal data is protected against accidental destruction or loss:

### Technical measures:

- + Automatic import of system updates
- + Redundant cluster
- + Automatic scaling of cluster resources

## Recoverability (data & systems) +

Measures to ensure that personal data is protected against accidental destruction or loss:

### Technical measures:

- + The redundant application cluster is provided automatically via Terraform and by design is not susceptible to accidental destruction or loss. Recovery would be possible very quickly due to the logged infrastructure code and the numerous redundancies.

## Order Control +

Measures to ensure that personal data processed on behalf of the client can only be processed in accordance with the client's instructions.

### Organizational measures:

- + Due to the principle of data economy, only minimal data that is absolutely necessary for the provision of the service is processed.
- + Processed data is only used within go.lywand.com.
- + Ensuring the destruction of data after completion of the order

## Data Protection Management +

Measures to ensure that methods are evaluated to systematically plan, organize, manage and control the legal and operational requirements of data protection.

### Organizational measures:

- + Anchoring the position of data protection officer at C-level
- + Employee training on data protection
- + Obligation of employees to maintain data confidentiality

## Incident Response Management +

Measures that ensure that security incidents can be prevented or, in the case of security incidents that have already occurred, that data and systems can be protected and that the security incident can be analyzed and rectified quickly:

### Technical measures:

- + Zero-Trust infrastructure
- + Ongoing security scans
- + Use of firewall and regular updates
- + Use of spam filters and regular updates
- + Use of virus scanners and regular updates

### Organizational measures:

- + Documentation of security incidents
- + Involvement of data protection officers in security incidents
- + Clear process for regulating responsibilities in the event of security incidents

## Data Protection-friendly Default Settings -

Measures that ensure that a certain level of data protection is already in place in advance through the corresponding technical design (privacy by design) and factory settings (privacy by default) of software.

### Organizational measures:

- + Personal data is only collected for the intended purpose
- + Principle of data minimization mapped in the software architecture
- + Guarantee that a data subject can easily exercise their right to withdraw consent

## 8. Support

First-level support is provided directly by the lywand partner to the customer. If the partner needs support, lywand is there to help. Typical support requests could include bug fixing, processing false positives, questions about functions and the like.