

# Agile security – best practice



How V-Bank AG successfully  
digitalised its services



*By implementing a modern, cloud-based solution  
with such a high degree of automation, we were able  
to cut operating costs to the bare minimum.*

Michael Weiland, Authorised Signatory and Head of IT, V-Bank AG

Customers demand two things from their bank: maximum security and modern service provision. This is why online banking apps, which allow customers to 'carry' their portfolio in their pockets, are almost a matter of course nowadays. But implementing this kind of app requires extensive experience and smart applications, as the example of V-Bank AG shows.

Since it was established in 2008, V-Bank has had a clear focus – ensuring that assets are kept in safe custody for independent asset managers, family offices, foundations and investment banks. With assets under management of more than EUR 35 billion, V-Bank has been crowned winner of several awards in Germany, such as 'Best Depot Bank 2021' and 'Top Innovator 2021'. It has also been honoured with an accolade for its 'Excellent Service Quality'.

In 2020, V-Bank decided to speed up its digitalisation efforts by expanding the range of services it offers to include a mobile online banking app. Until then, end users could only see an overview of their assets and transactions on a browser-based solution. While the bank focused entirely on usability and on the added value of the new application for clients, Knowledge Lab AG was entrusted with implementing the security aspects. Due to its many years of experience in IT security for financial service providers, Knowledge Lab AG, Gold Partner of the Swiss IT security provider Airlock, was the perfect partner for V-Bank to successfully support its digitalisation project.

Knowledge Lab AG was tasked with ensuring that all of the security-related aspects were taken into account in the new solution. Security was not to just be considered at the end, but to be implemented continuously as part of an agile project.

## Security thanks to consistent checklists

Something that plays a key role in aviation safety has also proved its worth in IT security. We are, of course, talking about checklists. Regardless of whether a journey above the clouds or migration to the cloud is on the horizon, checklists can be used to structure complex requirements in a consistent manner and achieve maximum security.

Checklist
<input type="checkbox"/> Authorisation protocol
<input type="checkbox"/> Authentication
<input type="checkbox"/> Application and API security
<input type="checkbox"/> Availability
<input type="checkbox"/> Scaling
<input type="checkbox"/> Fault tolerance
<input type="checkbox"/> Automated setup
<input type="checkbox"/> Hotfix automation
<input type="checkbox"/> Monitoring
<input type="checkbox"/> Notification

By taking a look at the Knowledge Lab AG checklist, it is clear which main aspects need to be taken into account to ensure agile IT security. The overarching aim is to allow authorised users access to their data in as simple a way as possible. On the other hand, unwanted visitors such as hackers or bots should be intercepted early on, so that they cannot cause any damage. We would now like to show what working with checklists and an agile 'DevSecOps' process actually looks like using V-Bank as an example.

### Step #1:

#### Authorisation and identity management

In the digitalisation project that V-Bank described at the outset, the biggest challenge was that the existing browser-based end user application was an SaaS solution managed by a third party. Using the Airlock Gateway and Airlock IAM with the industry-standard authorisation protocol OAuth2, the Knowledge Lab team quickly provided modern two-factor authentication including biometrics for the integrated mobile app.

<input checked="" type="checkbox"/> Authorisation protocol	OAuth2 authorisation protocol
<input checked="" type="checkbox"/> Authentication	Two-factor authentication including biometrics
<input checked="" type="checkbox"/> Application and API security	Airlock Secure Access Hub (Gateway and IAM)

**Step #2:****Availability and scaling**

But the true innovation of the overall solution can be found under the surface and mainly concerns the scaling of the cloud-based solution. Of course, V-Bank wanted its customers to use the new service extensively and in large numbers, especially on its release. An appropriate infrastructure that automatically scales up in the event of a sudden surge in visitor numbers needed to be in place to achieve this goal. In addition, previously known and zero-day attacks had to be detected early on and prevented where possible.

To meet the needs of V-Bank, Knowledge Lab AG designed and configured the first cloud-based deployment of Airlock Gateway and Airlock IAM in the form of a **high-availability, fault-tolerant and dynamically scaled cluster**.

✔ Availability	High-availability cluster
✔ Scaling	Dynamically scaled cluster
✔ Fault tolerance	Fault-tolerant cluster

**Step #3:****Automation and hotfixes**

Other security-related aspects involved dealing with newly discovered security vulnerabilities and provision in a variety of environments. To simplify operation, automated setup and bootstrapping of each gateway instance was achieved by means of the configuration interface (REST API) and Ansible, an open source automation tool.

Continuous integration and deployment (CI/CD) has been ensured for four staging environments, allowing production hotfixes to be implemented in a matter of minutes.

✔ Automated setup
✔ Hotfix automation

For monitoring, seamless integration with the cluster-wide logging stack, Grafana dashboards and alerts sent to Microsoft Teams has been implemented. That way, the error messages of the systems are centralised and processed clearly for analysis with Grafana.

✔ Monitoring
✔ Notification

**Step #4:****Ready for take-off**

Thanks to the successful collaborative relationship between V-Bank and Knowledge Lab AG, end customers can now access all the information about their assets and transactions from their mobile devices. The mobile app now offers a comprehensive customer experience without compromising on security aspects.

***By implementing a modern, cloud-based solution with such a high degree of automation, Knowledge Lab has cut the operating costs to the bare minimum. Since the solution went live, its scalability has ensured consistently stable operation.***



Michael Weiland,  
Authorised Signatory and Head of IT  
V-Bank AG

### **V-Bank AG**

V-Bank AG is a German credit institution established in 2008 and headquartered in Munich. V-Bank offers custody, account management and securities settlement services for independent asset managers and family offices. All tradable products can be purchased through V-Bank. In the funds sector, the bank has more than 15,000 investment funds from over 200 investment companies in its portfolio. Together with its cooperation partners such as Hansainvest, V-Bank supports asset managers with creating and marketing funds. It also has network partners who are available to asset managers in areas such as real estate, succession planning and digital tax reporting. V-Bank has the option of granting credit against securities under its full banking licence obtained in 2008. Since 2019, V-Bank and its subsidiary V-Check have also been supporting asset managers in distributing online investment strategies.

### **Knowledge Lab AG**

Knowledge Lab AG is a Zurich-based consulting, software engineering and data science company for financial institutions. Founded in 2016 by Peter Häusermann and comprising an interdisciplinary team of around 60 employees in Zurich and Belgrade, it supports customers in Switzerland and Europe. With many years of experience in the field of core bank implementations, Knowledge Lab AG works together with its clients to develop solutions at the forefront of the banking transformation, constantly researching new approaches in its own development environment 'IVA'.

### **About Airlock – security innovation by Ergon Informatik AG**

The Airlock Secure Access Hub combines the key IT security issues of filtering and authentication into a well-coordinated overall package that sets standards in terms of usability and services. The Secure Access Hub provides all the key functions required for modern IT security in this field – from a web application firewall (WAF) acclaimed by specialist journalists and a customer identity and access management (CIAM) system trusted by Swiss banks, to API security that meets the latest requirements. The Airlock IT security solution protects more than 20 million active digital identities and 30,000 backends from over 550 customers all over the world.

You can find further information at [www.airlock.com](http://www.airlock.com). Airlock is a security innovation from Swiss software company Ergon Informatik AG.

Ergon Informatik AG was founded in 1984 and is a leader in the production of customised software solutions and software products. 300 highly qualified IT specialists who quickly anticipate new technology trends and ensure key competitive advantages with innovative solutions thanks to their outstanding specialist knowledge form the basis of this success. Ergon Informatik mainly implements large-scale projects in the B2B sector.

Ergon Informatik AG  
Merkurstrasse 43  
8032 Zurich, Switzerland  
+41 44 268 89 00  
[info@airlock.com](mailto:info@airlock.com)

[www.airlock.com](http://www.airlock.com)

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