



## Case Study

SUSE CaaS Platform

# Tymlez

With technology playing an ever-greater role across all industries, real-time monitoring and tamper-proof auditing have become essential when companies want to further accelerate workflows. Enterprise blockchain software provider Tymlez builds on SUSE® CaaS Platform to automate deployment and scalability of its cutting-edge distributed ledger technology to deliver software solutions more quickly and easily on cloud and on-premises infrastructure. Tymlez’ clients benefit from process optimization that helps them reduce overheads and increase efficiency.



### Overview

Tymlez is an enterprise blockchain software provider, offering enterprise clients the tools and expertise they need to build custom, scalable, secure electronic workflows that take advantage of blockchain solutions to achieve higher levels of automation. The company believes that blockchain—a distributed, highly secure digital ledger technology—has the power to transform the way organizations all around the world do business.

For companies to hit the ground running with this innovative technology, Tymlez

has created a scalable, enterprise-class blockchain architecture that enables clients to develop, deploy and scale up distributed blockchain applications. So that clients can continue to leverage their previous investments in IT and still benefit from the latest technology, Tymlez solutions can be integrated with existing systems and data models, augmenting and accelerating core business processes.

Headquartered in The Hague, The Netherlands, Tymlez is a dynamically growing company with staff amongst others in The Netherlands, Germany, the United Kingdom and the United States.

**“Thanks to the reliable, easy-to-use container management solution from SUSE, we can deliver everything that clients need to build their own blockchain applications in a convenient package, significantly reducing deployment times of the Blockchain Solution Platform—TBSP, as well as the application delivery times for our clients.”**

**MICHAEL REH**  
Co-Founder & CEO  
Tymlez

### Challenge

#### SOLVING BUSINESS PROBLEMS

Founded in 2016, Tymlez is not your average software provider. Thanks to an internal team that boasts years of experience in the enterprise technology sector, the company has quickly become a major player in the emerging enterprise blockchain market.

Blockchain, the technology behind cryptocurrencies such as Bitcoin, is a decentralized ledger database that records and stores all transactions between users on a given distributed private or public network. These records, referred to as ‘blocks’, are linked together and secured using cryptography. Each block contains detailed



### Tymlez at a Glance:

*Tymlez is an enterprise blockchain software provider that offers clients a scalable architecture supporting the modeling, development, deployment and scaling-up of blockchain applications—enabling them to adopt new digital ways of working.*

#### ■ Industry and Location

Computer Services, The Hague, The Netherlands

#### ■ Product and Services

SUSE CaaS Platform

#### ■ Results

- + 75 percent faster deployment of production-ready Kubernetes clusters, cutting time to market and time to value compared to a typical deployment of upstream Kubernetes
- + Enables seamless and cost-efficient scaling with low resource requirements to improve resiliency and meet spikes in demand while keeping operating costs low
- + Facilitates adoption of cutting-edge blockchain technology by enterprises in days instead of months, allowing them to streamline business processes and boosting agility
- + Helps to reach new customers by enabling enterprises to benefit from blockchain solutions in a private cloud deployment that protects sensitive customer data and eases compliance with strict government regulations

information on when the transaction took place as well as a secure cryptographic hash of input data from the previous block, and is therefore locked into the chain in linear, chronological order. Thanks to the block hash and block timestamp, it is essentially impossible to manipulate the blockchain without the manipulation being obvious to other parties using that blockchain. This tamper-proofing makes blockchain an ideal platform for recording transactions with high security requirements, such as tracking and auditing.

By providing a transparent, immutable record of every transaction, which cannot even be manipulated by system administrators, blockchain reduces the risk of fraud. Blockchain technology has the potential to revolutionize the way digital assets and sensitive information are managed and exchanged. The unique technology can improve traceability and integrity, which explains why many companies in the banking and finance sectors, along with accounting and auditing firms, are eager to utilize blockchain solutions. Beyond financial services, there is also a growing interest in areas such as supply chain management, food production and the chemicals industry.

Michael Reh, Co-Founder & CEO of Tymlez, begins: “We believe that blockchain is the answer to many of the challenges that companies face today. Rapid digitization of business processes and the advent of new user experiences for consumers in recent years have completely transformed expectations. Increasingly, employees expect the same real-time interactions in business processes that they have come to expect as consumers. For companies of all shapes and sizes, across all industries, meeting these new expectations and accelerating workflows safely is a huge challenge.

“We have seen so many new, digital-led enterprises burst onto the scene in the last

few years—and completely disrupt their industries. For established companies to keep pace with change, they really need to rethink their legacy business processes and systems.”

Many companies with mature, complex IT systems, such as monolithic, on-premises ERP environments, experience the ‘two-speed IT’ phenomenon. While their backend technology is complicated and relatively static, staff and customers demand new, innovative front-end improvements and technologies, such as blockchain.

Michael Reh remarks: “Dealing with disruptive change is the great challenge of our age. Cost pressures, speed of change, technological innovation and a value shift of our end users is forcing enterprises to re-evaluate the way they think and how they work. Managing digital transformation is now the number one challenge for organizations on how they will survive and stay relevant in the new digital age. Blockchain is one such digital disruptor.

“Bridging the gap of two-speed IT challenges, our goal is to create business applications that can be easily integrated with legacy systems, enabling clients to leverage new digital technologies like blockchain, and help them to thrive in a rapidly changing business environment.”

#### **IDENTIFYING TECHNICAL CHALLENGES**

To enable its clients to harness the power of blockchain in their own businesses, Tymlez developed the Blockchain Solution Platform—TBSP—a distributed ledger technology environment based on open source software that enables clients to develop and deploy their own blockchain applications rapidly in a private cloud. Software components used by Tymlez include BigchainDB, a scalable blockchain database, and Node-RED, a browser-based data flow manager.

Tymlez wanted to be able to deploy and manage its complete solution quickly and efficiently. Michael Reh states: “To minimize the administration and management workload, we decided early on to package all components into Linux containers. However, we soon realized that we would need a more sophisticated container management and orchestration solution to get all the components up and running.”

The company sought a solution that would also offer simple, automated scalability to ensure reliable performance for its clients as capacity requirements increase.

As a growing company, automation was a key requirement for Tymlez to avoid complex, manual setup tasks and reduce time spent on routine, repetitive administration processes. Time saved could be better spent implementing new features or on-boarding new clients.

Crucial to its business strategy, Tymlez wanted an environment that would allow its clients to run the Blockchain Solution Platform—TBSP as an on-premises solution in their own data centers as well as on different cloud platforms. Michael Reh explains: “We did not want to limit ourselves by being locked into one particular delivery model—while we offer the Blockchain Solution Platform—TBSP as Software-as-a-Service, we always wanted to prioritize flexibility. Large enterprises often have particular requirements regarding the underlying infrastructure, and our goal was to also allow our clients to run the solution in their own data center or on their preferred cloud platform.”

## **Solution**

### **STREAMLINING APPLICATION DELIVERY**

#### **WITH LINUX CONTAINERS AND KUBERNETES**

Facing a range of deployment and operations challenges, Tymlez looked for ways that would help the company to deliver its

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solution to clients more efficiently. Michael Reh recalls: “When we first implemented our platform, we wanted to use Linux containers so that we could build, deploy and test the architecture quickly and easily. But soon, we reached the point where managing and running all the different Linux containers had become increasingly time-consuming and complex. It was then that we looked for container orchestration solutions. We considered Docker Swarm, but it did not deliver the levels of scalability and efficiency required for production deployments of the Blockchain Solution Platform—TBSP.”

Tymlez then moved its containers over to Kubernetes, an open-source cluster system for automating the deployment, scaling, and management of containerized applications. Michael Reh comments: “We were satisfied with the solution, but setting everything up and getting it to work was a rather complex endeavour. We realized that by using a commercial offering, we could achieve the stability we needed, without the manual configuration workload.”

#### **SELECTING SUSE CAAS PLATFORM**

After evaluating a variety of container management products to act as the foundation for its new architecture, Tymlez selected SUSE CaaS Platform, an application delivery solution based on Kubernetes container orchestration technology. SUSE CaaS Platform is an enterprise-class container management environment that simplifies the deployment, management and scaling of container-based applications and services.

As an early adopter, Tymlez took part in the SUSE CaaS Platform Beta Program, and worked closely with SUSE to implement the container management solution. Michael Reh says: “Support from the SUSE team has always been excellent. Whenever we have any questions about the technology, SUSE provides us

with comprehensive and helpful answers. Everything went impressively smoothly. In our experience, SUSE CaaS Platform is easy to set up and very stable.”

In the digital economy, agility and time to market are key to success. That is why it was so important for Tymlez to choose a container platform that is truly enterprise-class and production-ready.

#### **FACILITATING SCALABLE DEPLOYMENTS**

Aiming at the enterprise market, it was essential for Tymlez to offer a reliable and highly scalable solution. Michael Reh notes: “Our clients need to react fast to changing demands. With SUSE CaaS Platform, we can scale environments as and when needed, according to each client’s unique requirements.”

Furthermore, SUSE CaaS Platform supports sophisticated self-healing capabilities to increase resiliency. Building on advanced Kubernetes features such as Horizontal Pod Autoscaling, SUSE CaaS Platform ensures that all components of the Tymlez solution are available at all times—if one service becomes unresponsive, SUSE CaaS Platform automatically restarts it. The solution can also monitor the load of all the containers in the cluster in real-time and automatically scale up services by starting additional containers based on custom-defined metrics.

The scalability features also extend to the level below the application containers to the solution’s cluster nodes. Should a client need more capacity and performance, SUSE CaaS Platform makes it easy to add more physical or virtual nodes to the cluster, and rapidly provision the resources needed to keep business processes running uninterrupted.

#### **SUPPORTING PUBLIC AND PRIVATE CLOUD**

The Blockchain Solution Platform—TBSP is predominantly delivered to clients as a

Software-as-a-Service (SaaS) offering, and Tymlez runs both its own development environments and its clients’ production environments in the cloud with Amazon Web Services (AWS). Before implementing SUSE CaaS Platform, it was difficult for the company to let clients run the Blockchain Solution Platform—TBSP as an on-premises solution in their own data centers or on their cloud platform of choice.

“We didn’t have the resources to deploy and operate the Blockchain Solution Platform—TBSP on-site for clients in the past,” says Michael Reh. “Today, with SUSE CaaS Platform, our solution can be installed really quickly and easily on just about any physical server or cloud platform. That’s because SUSE CaaS Platform runs on SUSE MicroOS, a modern Linux container operating system that inherits all of the platform support as well as the security, scalability, and robustness of SUSE Linux Enterprise.

“Letting clients choose their preferred cloud platform freely while maintaining standardized deployment and management processes simplifies support, and helps us win new clients. Crucially, thanks to SUSE CaaS Platform, it has also become much more efficient to deliver the Blockchain Solution Platform—TBSP as an on-premises solution. Being able to offer this is fantastic, as many companies prefer to have their business applications running on-site rather than in the cloud, typically for security or regulatory reasons.”

## **Results**

#### **ACHIEVING FLEXIBILITY AND DATA PROTECTION**

With SUSE CaaS Platform underpinning the Blockchain Solution Platform—TBSP, Tymlez can deliver reliable, scalable, secure services that enable its clients to take advantage of blockchain technology more easily than ever before.

Michael Reh comments: “With our architecture, clients have all the tools they need to develop their own blockchain applications. With SUSE CaaS Platform, clients can deploy development environments with a few clicks, in just 25 minutes. And because everything is containerized, clients can set up a complete, production-ready cluster environment in half a day, instead of approximately two days.

“Building on Kubernetes orchestration technology means that SUSE CaaS Platform automates most of the deployment and management processes, so we—and our clients—don’t have to worry about the low-level technical details, and can instead get on with developing exciting blockchain applications. With SUSE CaaS Platform, new environments can be fully deployed 75 percent faster on average than a typical deployment of an upstream Kubernetes cluster. We also looked at other orchestration solutions not based on Kubernetes and found that SUSE CaaS Platform needs 50 percent fewer compute resources—be they physical or virtual.”

Besides scalability, the capability to run the Blockchain Solution Platform—TBSP in an on-premises data center also makes the solution more attractive to many enterprises that are subject to strict industry regulations and privacy policies. Michael Reh notes: “Offering our clients on-premises deployment options is a crucial aspect of our business strategy. Especially with new regulations like the EU General Data Protection Regulation, or GDPR for short, coming into effect, giving clients full control over infrastructure and data storage will become even more important.”

#### **INTEGRATING WITH EXISTING IT SYSTEMS**

The Blockchain Solution Platform—TBSP provides all components its clients need to operate blockchain applications effectively and securely. The architecture, deployed

via SUSE CaaS Platform, provides a secure environment with role-based access control, multi-factor authentication, logging and tracking to support enterprise-class blockchain applications.

In addition, the solutions can be extended with plugins and APIs, to enable the new applications to communicate directly with existing legacy business systems like SAP ERP, SAP HANA, Microsoft SQL Server, Salesforce and many others. This is where the flexible deployment options enabled by SUSE CaaS Platforms can shine, when companies want to run their blockchain applications on-premises, close to their ERP systems or other existing databases for the best performance, and to allow for new, innovative use of company data.

“Around 80 percent of business transactions across the globe are processed on traditional ERP systems,” says Michael Reh. “Being able to integrate new blockchain-based applications with existing IT systems is critical for many clients when, for example, all enterprise data comes from their core ERP system. The Blockchain Solution Platform—TBSP in combination with on-premises deployment enabled by SUSE CaaS Platform makes this integration simple.”

#### **FOCUSING ON TIME TO VALUE**

Setting Tymlez apart from its competition, the Tymlez architecture includes unique visual modeling tools that enable solution architects and developers to create next-generation solutions. This means that by choosing Tymlez, clients can model, develop and deploy blockchain applications in days instead of months. This capability drastically reduces development times, and allows architects and developers to focus on building great functionality.

Michael Reh states: “The opportunities that blockchain presents are immense. The

technology has the potential to transform business processes across all industries—and our mission is to make this technology more accessible. Thanks to SUSE CaaS Platform, we have made great progress towards simplifying the deployment of advanced blockchain solutions.

Tymlez has already implemented blockchain applications for a range of clients in very different areas, from government agencies to auditing firms.

Michael Reh confirms: “For example, we recently worked with the Ministry of Infrastructure and Transport in The Netherlands. Using our architecture, the ministry developed a smart contract protocol based on blockchain technology to ensure that only certified partners can transport dangerous goods. The traceability of all blocks in the smart contract blockchain means that the ministry can accurately track the movement of specific batches of these goods—with all the transactions recorded in the blockchain, it knows where the cargo has been and where it is going. Similar solutions could also integrate sensor data and build on the Internet of Things to help supermarkets streamline their food supply chain, and automate discounts and claims when contractually agreed transport conditions are not fully met.”

In another sector, Tymlez works with a major auditing firm to secure file sharing and create a tamper-proof track record of which people have viewed which documents, and when.

For Tymlez, the possibilities that blockchain offers are endless. Supported by SUSE CaaS Platform, the company is aiming to help more and more customers take advantage of this innovative technology.

Michael Reh concludes: “Partnering with SUSE has plenty of advantages for us. Many enterprise customers already work with

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SUSE, and value the stability and security of SUSE Linux Enterprise Server. Offering the Blockchain Solution Platform—TBSP in combination with SUSE CaaS Platform successfully builds on that trust.

“Thanks to the reliable, easy-to-use container management solution from SUSE,

we can deliver everything that clients need to build their own blockchain applications in a convenient package, significantly reducing deployment times of the Blockchain Solution Platform—TBSP, as well as the application delivery times for our clients. And of course, by running our SaaS offering on SUSE CaaS Platform, we

can boost IT efficiency and keep operating costs low—allowing us to go to market with attractive and flexible pricing models that help us convince new clients to buy into our innovative services, without huge upfront costs.”

“Partnering with SUSE has plenty of advantages for us. Many enterprise customers already work with SUSE, and value the stability and security of SUSE Linux Enterprise Server. Offering the Blockchain Solution Platform—TBSP in combination with SUSE CaaS Platform successfully builds on that trust.”

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