

# // Central Development Platform for the Federal Cloud

Cloudogu EcoSystem at the Federal Information Technology Center



ITZBund (The Federal Information Technology Center) is the central IT service provider of the German federal government that emerged from the merger of three independent federal administration IT service providers. As a result, the task of consolidating the IT systems and processes of the merged companies was an inevitable and immense task. ITZBund chose the “*Cloudogu EcoSystem*” solution for the SLM (Software Lifecycle Management) development platform, which is indispensable for software development. The deciding factors were the low administration effort in daily operations, the high security standards, and the close integration of the toolchain. ITZBund now provides the solution to 180 clients.

Company mergers are always a challenge from an IT perspective. Different systems, processes, and locations must be brought together to form a homogeneous structure. This is the only way that the desired synergy effects can be harnessed. This quickly brings together hundreds of different and sometimes redundant systems. “*Informationstechnikzentrum Bund*” (ITZBund for short) is no exception. By merging the Center for Information Processing and Information Technology (ZIVIT), the Federal Institute for IT Services, and the Federal Office for Information Technology in 2016, the IT service providers were consolidated at the federal level, with all the hurdles that have to be overcome for such a large project. Approximately 3,100 employees based in twelve offices look after 91,000 IT workstations and 750 IT solutions. This complexity that has grown over time can only be administered with considerable effort. Developing the system further is an even more complicated task. Braunschweig-based Cloudogu GmbH helped ITZBund to complete an important task: The Cloudogu EcoSystem development platform now centrally and securely supports the development teams.

The new platform was introduced as part of the IT consolidation of the federal government, which is scheduled to run until 2025. One goal is to standardize processes and technologies across all locations in order to create easily manageable and efficient IT. Another goal is to create the necessary flexibility to be able to meet very different customer requirements. A central element of this strategy is the so-called „*federal cloud*“ (“*Bundescloud*”), a private cloud reference architecture that functions as a platform for IT services for the federal administrations, states and municipalities. The offerings of the federal cloud range from Infrastructure as a Service (*IaaS*) via Platform as a Service (*PaaS*) to Software as a Service (*SaaS*).

### High Demands on the Development Platform

A core component of the PaaS offering is a Software Lifecycle Management (SLM) development environment. It supports applications through the “Plan-Code-Build-Test” phases with server-based tools, and it ensures a continuous development process through end-to-end tool integration. The development environment must be fundamentally suitable for revision-proof source code management and technical documentation. It must also be able to support agile development methods. In addition, ITZBund needs a development environment that supports the consolidation strategy in such a way that, despite the use of a centralized and uniform solution, the divergent requirements of the different authorities are covered.

Last but not least, the administrative effort involved in the provisioning should be reduced: In the past, development teams had to apply for the individual tools that were required for a project and were then provided with them one by one, which led to a significant loss of time. This also resulted in isolated solutions that were used within the authorities and departments serviced by ITZBund, which could not be efficiently maintained and managed. In order to meet the requirements, a new solution had to be introduced that could then be made available to all customers of ITZBund via the federal cloud. The requirements for a new SLM development platform were correspondingly high:

- Centralized provision
- Support of agile methods and procedures such as continuous integration/continuous deployment
- Easy implementation and administration
- Independence from individual tool vendors
- Easily expandable to use new tools and technologies
- High level of security in accordance with the recommendations of the BSI (*Federal Office for Information Security*)

Before starting the project, ITZBund evaluated various solutions available on the market and selected the Cloudogu EcoSystem as the SLM platform. The platform already met most of the requirements in its basic configuration. Also, it is based on an open architecture that uses proven open source technologies. The Cloudogu EcoSystem can be flexibly adapted to user requirements and supplemented with additional tools. All tools are integrated into the federal cloud platform and interconnected with each other in such a way that the amount of effort that needs to be spent on daily administration and maintenance is very low.

The virtual service platform is preconfigured; it can be implemented and adapted much faster than it would be possible with containers or classically installed toolchains. At the same time, it can be adapted relatively easily to individual needs. The platform works with on-premises instances that are connected to a central backend. The solution thus takes advantage of the easy administrability of a cloud application with complete control over all the data that characterizes locally operated applications. This approach provides revision security as well as the opportunity to reliably and centrally control backup and restore.

### Quick Implementation of Customer Requirements

The project started with an extensive analysis of the Cloudogu platform and a proof of concept. To this end, the EcoSystem was rolled out in several departments of ITZBund and tested by the development teams as part of several pilot projects. This revealed a number of requirements for ITZBund that Cloudogu incorporated into the EcoSystem. For example, the source code management with SCM-Manager was extended by a code review function at the user's request. Another requirement was that the backup and restore functions would be able to secure the entire platform so that work statuses would be able to be

restored at any time. In addition, the Cloudogu solution should be able to integrate with existing systems such as monitoring and log management.

The Cloudogu EcoSystem was already able to be deployed in regular operations in May 2019. The development teams now only had to apply for the SLM platform, which provides all the tools for their projects. As its next step, ITZBund is planning to launch a self-service portal to make the process from application to provision as efficient as possible. Also, the administrators' work is a lot easier now. Instead of managing and keeping all existing tools up to date individually, Cloudogu now provides all necessary updates centrally. In addition, these tools have already been tested with the platform and can therefore be put into productive operation much faster. This also guarantees future security. This is because additional tools satisfying special requirements can be added to the Cloudogu EcoSystem with little effort thanks to the open platform approach.

### More Flexibility, Lower Costs

The project is already a complete success for ITZBund. It already supplies the solution to 180 clients, each of whom can operate any number of instances of the Cloudogu EcoSystem. Further expansion of the solution is already in the works. This will entail the incorporation of a number of additional functionalities that are important for ITZBund into the platform. These include automatic patching across client and instance boundaries and the further expansion of the code review function with SCM-Manager or the development of test automation options.

Axel Rockstroh, product owner of the *"Federal Cloud Development Environment"* at ITZBund, noted: *"The switch to the modern development platform Cloudogu EcoSystem was an enormously important step for us. We have gained a lot of efficiency and flexibility, especially in software lifecycle management. At the same time, we were able to significantly reduce costs and the amount of effort expended on daily operations without having to compromise on security or user comfort."*

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