



Berlin prepares for major ICT migration

HPE Synergy brings Berlin Cloud into a new era

Objective

Consolidate and streamline all ICT for the city of Berlin

Approach

Worked with HPE to move the Berlin Cloud to a composable infrastructure

IT matters

- Ensures smooth migration of 4000 servers and 37,000 workstations
- Delivers PaaS environment in 30 minutes
- Standardizes IT operations across the Berlin government

Business matters

- Enables easier, faster delivery of online government services
- Enhances government security



The city of Berlin commissioned IT-Dienstleistungszentrum Berlin (ITDZ Berlin), its IT service provider, with standardizing all information and communications technology (ICT) citywide—a mammoth project involving thousands of servers and tens of thousands of workstations. Thanks to HPE Synergy, they delivered.

Challenge

In 2016, the city of Berlin passed legislation called the E-Government Act, which promises to provide digital and more user-friendly citizen services and to modernize the governmental IT infrastructure and workspaces. As part of this, ITDZ Berlin, the city's IT service provider, was tasked with standardizing, centralizing, and modernizing the city's information and communications technology (ICT)—to improve the efficiency, cost-effectiveness, and security of the city's IT infrastructure.



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– Andreas Gundlack, department head, infrastructure and basic services, ITDZ Berlin

ITDZ Berlin and HPE Synergy bring the city of Berlin into a new era with composable infrastructure for improved efficiency, costs, and security citywide.



A massive project

If any service provider is qualified for this daunting undertaking, it's ITDZ Berlin. They provide everything from infrastructure provisioning to fully automated software operation (SaaS) to platform as a service (PaaS), a growing specialty of ITDZ Berlin.

However, even for ITDZ Berlin, the scope of IT environments among Berlin's governmental authorities was barely manageable. Countless **specialized procedures** have been running across the city on approximately 4,000 servers, on a mix of Windows®, Linux®, and UNIX® operating systems. These specialized procedures include everything from managing property titles at the land registry office to calculating parenting allowances in the youth welfare office. Each procedure has its own processes, servers, storage systems, backup processes, and management tools.

Also, ITDZ's infrastructure as a service (IaaS) and PaaS were operating on a wide variety of technologies—OpenStack®, Docker, Kubernetes, and Red Hat® OpenShift—and the various city authorities were running their specialized procedures on legacy servers outside the standardized environment of the city's private cloud.

“The challenge for us is that we have to bring hundreds of servers onto our platform in the next five years and convert them to a uniform operating environment using a standardized technology stack,”

said Andreas Gundlack, department head, infrastructure and basic services at ITDZ Berlin. Among other things, this includes standardizing server and cloud operations, automation, and monitoring.

At the same time, the city must also modernize all of its specialized procedures for the new platform—a major challenge for the migration project.

“We not only have to prepare ourselves for a massive wave of migration and standardization, but at the same time, we must ensure the parallel operation of IaaS/PaaS platforms in a wide variety of legacy applications—at least for a transition period,” says Gundlack.

Solution

The standardization and centralization of this heterogeneous landscape was both a mammoth undertaking and a critical opportunity to ensure the future viability of the city's operations.

Fortunately, back in 2010, ITDZ Berlin had partnered with Hewlett Packard Enterprise to implement a private cloud infrastructure (called the **Berlin Cloud**). Doing so formed a strong foundation on which to build.

For this project, ITDZ Berlin turned to HPE to help expand the Berlin Cloud, centralize and standardize operations, and, ultimately improve the efficiency, ease, security, and scalability of the city's ICT infrastructure.





Berlin Cloud goes on a composable infrastructure

For ITDZ Berlin, the HPE Synergy system is the ideal solution and—with the funds provided through the E-Government Act—the previous Berlin Cloud infrastructure is gradually being replaced with HPE Synergy’s new composable infrastructure, in two stages:

Stage one

The first step in Berlin’s migration process is the Physical to Virtual Project (P2V Project), which is still underway. Gundlack’s team began by migrating the legacy servers in operation to the new composable infrastructure, gaining experience along the way about how best to migrate legacy applications to the new platform.

To ensure uninterrupted service, ITDZ Berlin set up a redundant, fully virtualized environment across various locations, based on HPE Synergy, and included it in the resource pool.

With the high compute density of HPE Synergy, ITDZ Berlin was able to replace eight of its previous HPE BladeSystem with just a single HPE Synergy server module during deployment.

Stage two

After the P2V Project is complete, the procedures of all government offices that are not yet ITDZ Berlin customers will be migrated successively to the new platform. This will involve about 4,000 servers, accessed by around 37,000 workstations—some with physical and some with virtualized desktops. ITDZ Berlin’s road map envisions transferring up to 6,000 workstations per year to the standardized IT environment over the next few years.

While ITDZ Berlin is working on the migrations, the Berlin city authorities are being called upon to modernize their specialized procedures—or at least to prepare for the necessary modernization step. “Our customers must achieve a state of **migration readiness**,” explains Andreas Gundlack. “That is, they must

reach a minimum technical standard from which we can execute centralization. That is the basis for procedure modernization, for example, using PaaS.”

Once this minimum level is reached, ITDZ Berlin will migrate the operating environments, and the public authorities themselves will remain responsible for their own specialized procedures.

Benefit

Flexibility

“For us, the main point of the new infrastructure rests first and foremost in its flexibility,” says Gundlack. “With HPE Synergy, the same platform we use for virtual or physical servers can also deliver IaaS and PaaS, and we can aggregate the components from the resource pool for different purposes as required.”

ITDZ Berlin is following a three-part process for migrating each of the city’s specialized procedures: They first set up a test system for the procedure, followed by a reference system, and finally the production system. HPE Synergy has made this process easy. “Using HPE Synergy’s composable infrastructure, we can generate these systems automatically and later return them to the pool again as soon as they are no longer required,” says Gundlack.

Another advantage HPE Synergy delivers is the ability to more easily handle peak loads. Some Berlin city offices require considerable additional resources at certain times of the year. For example, many offices issue notices at the beginning of the year while the citizen services office has peaks at the beginning of the vacation season when many people need new passports and identity cards before they travel.

With HPE Synergy, ITDZ Berlin will be able to automatically deliver additional resources for peak usage times through uniform SLAs, and then release those resources again to other specialized procedures for the rest of the year. Gundlack hopes that the streamlined IT operation will reduce cost and capitalize on the environment available.



Customer at a glance

Solution

ITDZ Berlin, the IT service provider for the city of Berlin, was charged with standardizing all ICT citywide—a mammoth project involving thousands of servers and tens of thousands of workstations. To do so, they worked with HPE to migrate their private cloud (the **Berlin Cloud**) to HPE Synergy composable infrastructure. They now operate three redundant HPE Synergy systems with HPE Synergy 480 server modules, flash-based HPE 3PAR StoreServ 20450 storage, and deduplicating HPE StoreOnce backup systems. This solution is enabling ITDZ Berlin to build a more modern, efficient, secure, and flexible state IT system for the city of Berlin.

HPE solution

- HPE Synergy 480 Gen10 compute modules
- HPE 3PAR StoreServ 20450 storage
- HPE StoreOnce systems
- HPE OneView

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Speed

Beyond flexibility, HPE Synergy has also delivered increased speed. Gundlack’s team worked closely with HPE specialists to ensure the fastest possible onboarding of each new city office. ITDZ Berlin reports that it can now provide a PaaS environment ready for a migration to cloud services in just 30 minutes, and they will soon be equipped to onboard new customers for basic services in just three days.

The P2V Project has seen the benefits of speed as well. According to Gundlack, all of their server modules were completely deployed in just six hours, thanks to the high degree of automation HPE Synergy provided.

Security

To ensure the secure connection of all city offices, Berlin maintains its own fiber optic network, called **Berliner Landesnetz**, or **BeLa**, which is over 621 miles long and is completely separate from the public internet. With HPE Synergy, security will be further improved because management of the server instances will no longer be distributed across the various city offices but, rather, centralized with ITDZ Berlin.

In case of threat, HPE Synergy’s composable infrastructure will allow rapid reactions. According to Gundlack, had they been running HPE Synergy, 1000 servers could have been patched within just 10 minutes when the WannaCry ransomware wave broke out in 2017.

ITDZ Berlin for another reason as well. As competition for skilled IT personnel increases, the service provider faces a looming staff shortage. Without HPE Synergy, they would struggle to keep up with their growing business.

“In the coming years, our workforce should grow from 780 to 1200 employees. About 130 new positions are planned for this year alone,” says Gundlack. “Even if we succeed in filling all our positions—and thus doubling our workforce—our work will increase fivefold in the same period.”

That level of growth could not be managed without the higher degree of automation that is provided by HPE Synergy.

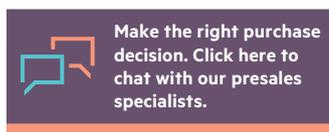
Creating room to grow and change

With the help of HPE Synergy, ITDZ Berlin has seized this opportunity to build a more modern, efficient, secure, and flexible state IT system for the city of Berlin. Soon PaaS environments will become the standard for all the offices involved with Berlin city government (and all the specialized procedures they handle), and all of their work will be based on OpenStack and Red Hat OpenShift. And, ultimately, this centralization and standardization of procedures will help increase the quality, speed, and ease of service that Berlin residents experience from the city.

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