Pay As You Go:
Cut and Control Costs
with Comarch POWER Cloud

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Today, the ability to implement flexible solutions and respond quickly to business challenges is the foundation of success for any business, regardless of its field or size. Unfortunately, quick and extensive IT overhauls may prove very costly.

POWER Cloud is the best solution for companies that want to expand their IT resources and enhance their business capabilities, but are not sure how to go about this in an effective and economical way. The solution offered by Comarch relies on top-quality IBM POWER servers to guarantee flexible, secure and convenient IT infrastructure expansion in the cloud environment.

IDC Prediction experts estimate that more than 90% of large enterprises will be using some form of cloud services or platforms by 2020. The latest report published by the IBM for Business Value Institute notes, however, that while 85% of companies already operate in the multicloud environment, only 38% have implemented relevant support tools and procedures. A recent Ovum survey also found that 80% of applications of crucial corporate importance – not to mention sensitive data – are still being supported by local data centers because of performance concerns and legal regulations. These figures show unequivocally that the role of cloud technology in business will grow in the future. The challenge, however, is to know how to use it in a way that is both secure and profitable.

IBM POWER systems are currently employed by large businesses and corporations to process and analyse massive volumes of data, as well as to support machine learning and AI-based solutions. In brief, they come in handy whenever high availability, security and reliability are particularly called for.

Comarch POWER Cloud solution serves to build clouds for companies to host their POWER technology systems (IBMi, AIX and Linux on Power), or to store company data. This means businesses can now boost their computing power and disk resources by purchasing a service rather than equipment. Thanks to a secure platform based on IBM Power servers and the efficient use of the existing IT resources, POWER Cloud allows organizations to respond to fast changes in business conditions.

"If a company looks to speed up its business processes or needs a new secure data storage platform, but doesn't want to invest in often costly devices, it can easily fall back on our solution and purchase cloud access with all the necessary extra services. Our solution is much cheaper and faster, and IBM Power servers also make it reliable and secure. Importantly, Comarch experts are out there to deliver support, which means that businesses no longer need to think about hiring and maintaining their own specialist staff; instead, they can rely on the 24/7 assistance of our experts," explains Jacek Bednarek, IBM Power Systems and Storage Specialist at Comarch.

Comarch POWER Cloud

is a ready-to-use solution based on an IBM Power Systems platform, known as the Power Virtualization Center (PowerVC). Comarch guarantees all the usual benefits of cloud solutions, along with expert support and a wide portfolio of additional services. POWER Cloud allows companies and service providers to set up and configure their own customized cloud and mass storage infrastructure.

A basic advantage of the solution is that it allows companies to cut and control costs, based on a PAYG (Pay As You Go) model. "Top-notch servers and mass storage devices are often very expensive and not all businesses can easily afford them.

Comarch offers a much easier solution, where you can purchase the power of one processor, 20GB of extra memory or additional disk array space. The scale of savings depends on many different factors, but our estimates show that, when the system is transferred to the cloud, the solution may reduce costs by as much as 30-40%," explains Jacek Bednarek from Comarch. He adds that it is not just about the cost of purchasing equipment, but also of ongoing maintenance by qualified engineers, data center support and network and system security solutions. "With POWER Cloud, the client may stop worrying about all that. It is now up to us to take care of software and equipment. Importantly, the client has the comfort of being sure that the cloud is supported on exceptionally reliable and efficient equipment, meaning IBM POWER servers, IBM mass storage memo-

ries, and ultrafast POWER9 processors," says Jacek Bednarek. It is an excellent way to cut costs, but also to gear up for a fast and flexible response to business challenges.

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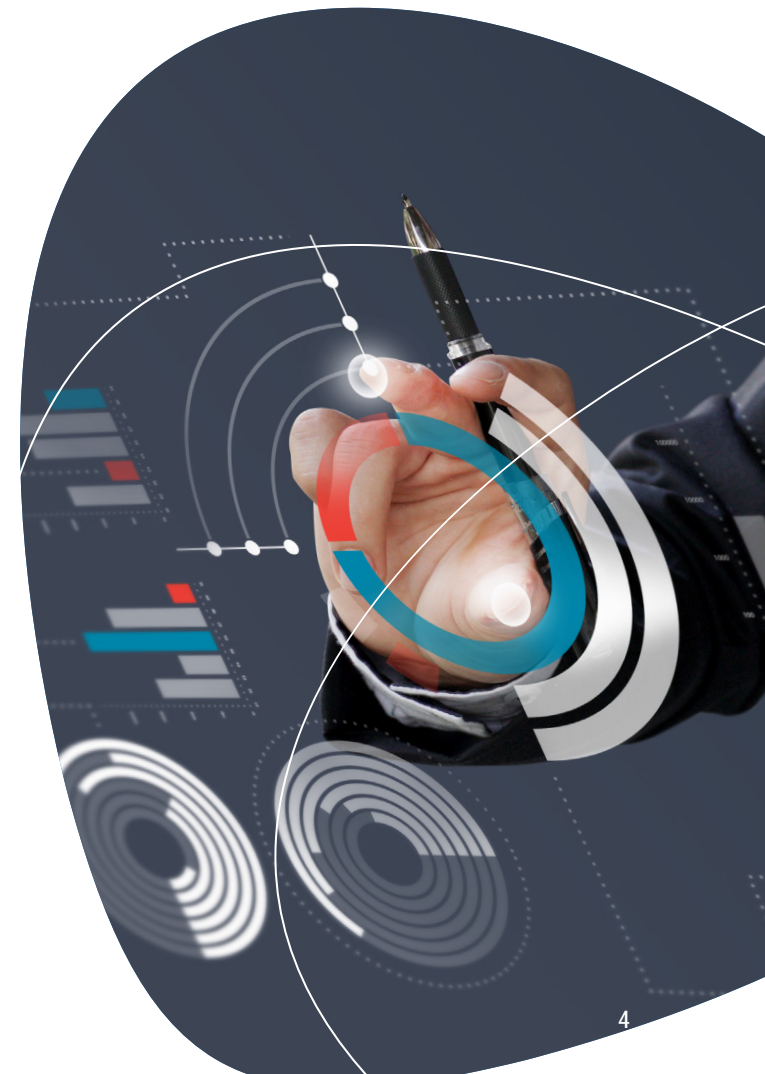
IBM Power Systems

are corporate servers designed to provide innovative infrastructure to boost the speed of equipment-based platforms. In the ITIC 2017-2018 Global Server Hardware report, IBM servers ranked as the best corporate-class servers for the tenth time in a row, with availability of up to 99.9996% (only 2.1 minutes of unplanned downtime per server per year), the highest of all current platforms for Linux other than mainframe solutions.
IBM Power Systems delivers servers supplied with security solutions

across the entire stack, from the processor, inbuilt software and systems, all the way to the operating system and the hypervisor. Because the integrated circuit has been fitted with an accelerated encryption mechanism, data are effectively protected both at rest and in motion.

Private, public, or hybrid cloud?

Companies looking for cloud services may opt for public, private or hybrid solutions. The public cloud uses public servers and other equipment belonging to external service providers that rent out cloud space to clients. This means that a single cloud may be used by many different companies. In contrast, a private cloud relies on infrastructure used by a single business or organization, while hybrid solutions combine local infrastructure with some public cloud capabilities.

"Our experience shows that private cloud solutions are frequently chosen by businesses such as insurance companies, banks or healthcare institutions, which often handle personal and sensitive data. They want their data to be stored separately, and security concerns push them to look for an individualized storage environment. More often than not, their choice also has to do with binding legal provisions. Public clouds, on the other hand, are popular with smaller companies, which do not set such

great store by being separate and have less rigorous business requirements. This solution, of course, is much cheaper than the private option," explains the Comarch expert.

The intermediate solution, a hybrid cloud, is often chosen by those who want to transfer their tools to the cloud, but also need to maintain ongoing communication with solutions applied by other service providers. There is no single accepted model for combining private and public services, but the most popular approach is to combine a fast and efficient external network with company-owned resources. "Let me add that our cloud is not only connected to other providers, but also well-integrated with Comarch Cloud Infraspace, our family of business cloud-building solutions, all based on x86 technology," explains Jacek Bednarek.

The three options are more or less alike in terms of technical capabilities. "Hybrid solutions may involve certain challenges, because they connect to external providers. As for raw computing power, there is really no difference between the public and the private cloud. If you purchase a solution from Comarch to build several systems with specific computing

power, data space and RAM volume, it really doesn't matter which type of cloud you go for," says Jacek Bednarek.

Data security in the cloud

Regardless of which service they select, our clients can be sure that their data will be safe with us. "Cloud security rests on three main pillars: network, infrastructure and the operating system. In all these areas, Comarch meets all the important security requirements and follows the best practices in the field," says Jacek Bednarek.

Network security is ensured by high-class equipment, as well as a dedicated technical support team. Secure infrastructure, above all, means a data center of our own. "At Comarch, we own the data center that hosts our cloud solutions, and all the equipment is kept there. This gives us an important edge over other market players. First and foremost, it allows us to eliminate the presence of third parties; physical access to critical infrastructure is granted only to authorized personnel if and only when such intervention is really necessary. And this is crucial, because it is from unauthorized access that security problems usually begin.
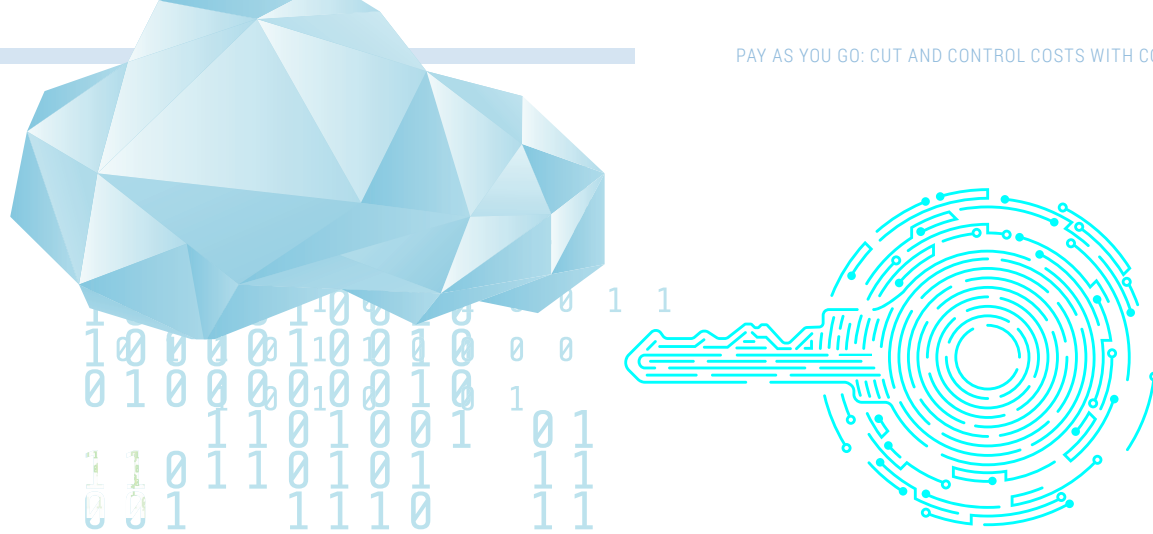
Even when all the necessary measures are taken to safeguard the network and the operating system, there is still an off-chance that a third party will be able to physically access the equipment and damage it somehow or attempt a break-in. At Comarch, the risk is minimal," explains Jacek Bednarek.

The security of the operating system as such is guaranteed by the experience of Comarch professionals and the quality of IBM solutions. IBM Power servers, and in particular the operating systems that they host, such as IBM and AIX, are among the most secure solutions available. Clients who choose the POWER Cloud solution may also count on the comprehensive assistance of Comarch engineers, who will ensure the security of the cloud-based system. "The fact that nobody has cracked the system thus

far does not mean we can rest on our laurels. Our solutions are always being prepared for possible attacks, so, for instance, our Patch Management process involves installing relevant code changes to address all newly-discovered vulnerabilities. We also encrypt data on disk arrays and security copies which are executed on classic solutions, such as tapes. Let me add that magnetic tape today is actually the only security method immune to ransomware. We also try to encrypt all connections within our solution. We place great emphasis on cloud security," says Jacek Bednarek.

Tested equipment is the mainstay of a safe and efficient cloud

POWER Cloud has been built on the IBM Power Systems platform, fast and efficient enough to meet the challenges faced by the largest companies on the market. "To guarantee the maximum possible speed of data processing and analysis, we need adequate computing power. This can only be achieved by using Power 9, the highest-performance processors currently available on the market; there is a reason why they are found at the core of the two fastest computers in the world today. In addition, to boost the number of available I/O operations to the maximum, we rely on super-efficient IBM disk arrays based on Flash technology. We offer high-speed connections and top-class backup solutions, including classical tape drives, but also use tools such as VTL. It is also important to consider the redundancy on individual elements of Power Cloud. These are the most important safety and performance features to consider for any cloud infrastructure," explains Jacek Bednarek.

POWER9

is the latest model in the family of POWER processors, designed to ensure a processing speed up to 1.5 times faster than its predecessor. POWER9's cutting-edge open-standard architecture offers a greater bandwidth and a wide array of options useful for various computing tasks, making it ideal for the most advanced applications. POWER9 is a processor built from scratch to enable intensive data processing, the first such unit to include an ultramodern I/O subsystem with next-generation NVIDIA NVLink interfaces, PCIe Gen4 and OpenCAPI.

The hallmark features of POWER9 include:

• 9.5x higher maximum I/O bandwidth as compared to x86
• 2x higher core performance as compared to x86
• 2.6x more RAM as compared to x86
• 1.8x greater memory bandwidth as compared to x86

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How to tap the potential of POWER Cloud in practice

Comarch's clients who contract a POWER Cloud solution usually transfer their entire environment to Comarch and give up on their own data centers. "Clients who choose to transfer their entire environment are offered a package of extra services, which allows us to carry out important updates and upgrade systems. For instance, we are in charge of installing code changes, administering systems and monitoring system security and backup copies within the Managed Services model. We really do a lot of work, which means our clients and their IT departments are let off the hook and no longer need to worry about the system; they can now turn their attention to tasks more important for company development," explains Jacek Bednarek.

POWER Cloud is also a response to dynamically evolving client needs. "It is often the case, for example, that a company needs to quickly create an image of their current operating system in order to test a new feature. Compa-

nies we cooperate with often have their own programming departments, where new software is continually being developed and the old versions are being upgraded, and everything needs to be tried out first. Thanks to our solution, clients are just a few clicks away from a test partition that can serve as a copy of the production partition. Once the testing is over, the machine is switched off and, of course, the client no longer needs to pay for it. Importantly, creating a sample medium-sized test environment can take up to 12 hours of really hard work if you do it in a classical way without a PowerVC solution. Our POWER Cloud tool brings the time down to five minutes," Bednarek continues.

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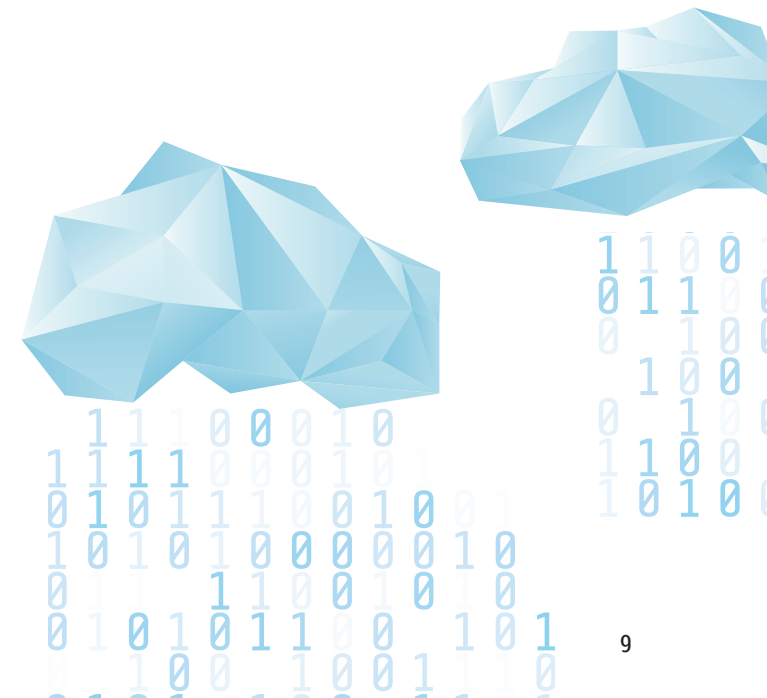
What does the launch look like?

Before any POWER Cloud solution is implemented, we analyse the current capabilities and expected benefits for the company. The exact manner in which the system is transferred and relaunched in the cloud, however, depends largely on the architecture of solutions currently used by the client. If the system in question is supported by PowerVC tools and Power9 architecture, the transfer is relatively simple. However, if the client works on very outdated operating systems, it will take more time, because Comarch experts first need to upgrade them to the latest possible version compatible with the PowerVC solution and Power9 servers. For this reason, Jacek Bednarek explains, it is much easier to transfer the system of a large company, provided it is just a few years old, than to migrate the resources of a smaller enterprise that uses outdated operating systems. "The latter situation, on the other hand, is always a chance for us to grow and learn about older technologies. It is important to know where we are coming from and how a given system worked in the past. This allows us to get a better grasp of specific tools, so from the perspective of technology, it is much more interesting to migrate old equipment. The software originally written for antiquated systems often no longer works, and sometimes the very companies that created it are no longer around. Our engineers thus need to put in a lot of effort to make sure everything works well and the client is satisfied in the end," the Comarch expert explains.

In systems no more than five years old, most functions are very fast and intuitive. "We have recently transferred the systems of a large financial company to our Power Cloud platform. Their tech stack allowed us to rely on storage-based replication, which meant that the migration was done in a jiffy. We replicated not only the operating systems, but also the backup copies. The entire process took four days, with 30TB of databases and 100TB of backup copies. Of course, for everything to go so rapidly and smoothly, what was needed before was the immense hard work of our engineers and architects, who had thoroughly prepared and planned everything out in advance," says Jacek Bednarek.

During such migrations, companies must brace themselves for a downtime period. "In the case of the large financial company, it was necessary because we had to switch off the systems in one data center and restart them in another on our premises. But the downtime lasted no more than a few minutes and everything was done after business hours so as to minimize the impact on normal business operations," says Jacek Bednarek. If the system needs to be upgraded to the latest version, however, the downtime may last as long as two or three hours.

The cost of implementing POWER Cloud depends not only on the size and complexity of the IT system, but also on the selected solution. If a company suddenly needs to increase its computing power or resources, it can opt for the "on-order" model and, for example, purchase access to extra resources for several days. This, of course, will be more expensive than a contract for one, two or three years. The cost will also vary if other Comarch services are contracted. "We provide more than the cloud alone; we also offer a variety of services within the Managed Services model, provided by qualified staff who know how

to help if something is wrong with the client's system. We have a team of top-class professionals who work with one another on a daily basis and know how to respond effectively. These teams are not scattered all around the world, but work as centralized units, which is an extra asset of our solution," says Jacek Bednarek.

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A nagging shortage of profes-sionals

What features are particularly appreciated by clients who chose Comarch POWER Cloud? Jacek Bednarek says number one is the system's speed. Other important factors, however, include specialized support and the availability of experts.

"After each migration, there is a period in which we devote special attention to the new client and respond quickly to all their problems and queries. Companies that have stayed with us the longest know well, and the new ones are quick to find out, that we really can be counted on. Our clients particularly appreciate our customer approach, our involvement and assistance in helping them understand various aspects of the new architecture and its use. This is all the more important because most companies still struggle with a shortage of qualified staff. This may seem like a para-dox, considering the droves of IT graduates that continually flood the market, but POWER technology is very costly, which means it's not easily available and few people have got a

good handle on it. The thing is, you really need to get practical experience in these solutions, you can't just learn them from books," explains Jacek Bednarek.

This is why Comarch also extends its invitation to businesses that do not have an elaborate IT support team. "You can have no idea about advanced IT systems and still enjoy the bene-fits of the complete Comarch solution, because our offer is targeted at small companies and large players alike. Big enough to deliver, small enough to care is our motto. We are able to meet the demands of the former and the latter, and we treat them all the same. Contact us. We are exceptionally good at what we do, and we can deliver the customized solution that will work best for your company," concludes Jacek Bednarek.

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CONTACT US

Jacek Bednarek

IBM Power Systems & Storage Specialist
Comarch SA

www.comarch.com

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