Open Telekom Cloud

A glance at Technology

Open Telekom Cloud

The Open Telekom Cloud is the public cloud offering from Deutsche Telekom and managed by T-Systems. A cost-effective IaaS/PaaS can be offered for the European market by relying on standard hardware as well as standardized and automated processes.

The services are produced at the data centers in Magdeburg and Biere, located around 25 km apart from one another. The two availability zones are connected by means of a low-latency, high-speed network. Since 2021 the Open Telekom Cloud is additionally provided from a twin-core data center in Amsterdam. As operation is carried out exclusively at European data centers, T-Systems as a German provider fulfills all relevant security requirements and regulations for operation of secure IT services.

The Open Telekom Cloud console allows you as the user to select and configure individual components. You can choose from network, computing and storage services. These IaaS basic functions are supplemented by additional services such as Cloud Container Engine (CCE), relational databases, the AI service ModelArts as well as management and security functions. Basically KVM hypervisor is used. Based on OpenStack technology, the risk of a vendor lock-in is minimized.

Besides the public cloud variant, Open Telekom Cloud is available in a hybrid cloud mode.

Network

Users first need to set up a Virtual Private Cloud (VPC) in order to work with the Open Telekom Cloud. VPCs isolate networks within and/or between tenants with elastic IP address, thus ensuring that no unauthorized person has access to your resources. Network isolation also means that you receive your own IP address range. The VPCs can include several availability zones. You can set up additional subnets below your VPC. By means of VPC peering/endpoint it is possible to give other users of the Open Telekom Cloud secure access to your VPC.

When setting up the VPC, users can assign access controls by means of firewalls and security groups. A decision is then made later as to which resources are to be made accessible via which ports for which user groups. The underlying network for the Open Telekom Cloud is software-defined, which simplifies administration. A secure tunnel connection can be set up, for example, via IP VPN (Elastic IP Service) to your own IT resources in your data center. Dedicated network connections are available as well: MPLS, Ethernet Connect, Cloud Exchange, and Secure Cloud Connect.

T··· LIFE IS FOR SHARING.

Open Telekom Cloud Services

Computing

Elastic Cloud Server	Auto Scaling
Bare Metal Server	Image Management Service
Dedicated Host	

Container

Cloud Container Engine	Software Repository for Containers

Storage

Object Storage Service	Cloud Server Backup Service
Elastic Volume Service	Scalable File Service
Volume Backup Service	Storage Disaster Recovery Service
Cloud Backup and Restore Service	

Network

Virtual Private Cloud/IP-VPN	Domain Name Service
Elastic IP	Direct Connect/Private Link Access Service
Elastic Load Balancing	VPC Endpoint
NAT Gateway	

Hybrid & Edge

Hybrid Cloud

Database

Relational Database Service	Distributed Cache Service
Document Database Service	

Management

Cloud Eye Service	Log Tank Service
Cloud Trace Service	Mobile Storage Solution
Identity & Access Management	Price Online Display
Tag Management Service	Financial Dashboard
Resource Template Service	Status Dashboard
Enterprise Agreement	Cloud Topology Designer

Application

Distributed Message Service	Short Message Notification
Application Operation Mgmt	

Security

Anti-DDoS	Key Management Service
Firewall as a Service	Web Application Firewall

Analysis

Cloud Search Service	Data Warehouse Service
Data Ingestion Service	MapReduce Service

Artificial Intelligence

ModelArts

Computing

Computing services primarily consist of three components: virtual CPU and virtual RAM are provided from the hardware pools in the data center in accordance with the required flavor. An operating system image is then included with the virtualized hardware as a third component. The end result is a Virtual Machine (VM). Users can choose between 1 and 208 vCPUs as well as 1 to 2,932 GB RAM. These basic components plus GPUs and local disks result in more than 70 flavors for a variety of uses, e.g. big data, in-memory computing, graphical applications or virtual workstations etc. Additionally Dedicated Hosts (DeH) and Bare Metal Flavors (BMS) are available. These customer-specific resources can tackle exceptional tasks like machine learning.

Operating system and application images are deployed and managed in three different ways: Usage of hardened public and application images from the Open Telekom Cloud library, usage of userowned images, designing and storing of self-created images.
The VMs are allocated within the VPC in appropriate subnets. Elastic resource adjustments (scale in/scale out) can be established on the basis of automatic rules using Load Balancer and Auto Scaling Service. These rules can respond, for example, to specific times or workloads.

Storage

Thanks to Elastic Volume Service (EVS), block storage can be combined with the Elastic Cloud Servers (ECS). Maximum block size is 32 TB in each case. 40 of these volume service hard drives can be connected to a server. Block storage is available depending on the I/O performance requirement in the performance classes SATA, SAS, and SSD. SAS and SSD are also available in a boosted mode for higher performance. The Volume and Cloud Server Backup Services (VBS/CSBS) which allow incremental storage and restoration of data, are likewise based on block storage.

As an alternative to block storage, the Open Telekom Cloud also offers cold, warm and standard Object Storage (OBS). Files of up to 48.8 TB in size can be stored in this cost-effective storage. The overall size of OBS can be scaled with virtually no limits. The OBS can be embedded in the individual cloud landscape or can be used independently. As another alternative Open Telekom Cloud offers Scalable File Service (SFS), a network attached storage. This storage also scales automatically during operations. Thanks to the integrated Key Management Service (KMS) you can encrypt your data in block and object storage – even with your own keys.

Continuous Enhancement

The Open Telekom Cloud is continuously supplemented by further services and features. Various database formats, a data warehouse and tools for big data analysis are available. The use of Open Telekom Cloud becomes more convenient and even more secure by means of Heat Resource Templates, communication services as well as Cloud Trace (CTS) as a protocol service. Tag Management Service (TMS) and the Financial Dashboard make costs and resource usage transparent. A public dashboard informs about the status of the services. For transfer of huge data amounts Open Telekom Cloud offers a mobile storage solution based on NAS devices.