

# STACKIT

## Pricing Models

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## STACKIT Cloud Services

Cloud services increase entrepreneurial flexibility and therefore not only form the technological basis for business digitalization, but are also a key lever for realizing IT cost saving potential. Modern IT technologies in the cloud are generally not built as a monolith, but rather dynamically from a wide variety of cloud services.

This makes it possible to develop scalable applications and run them in modern environments. The STACKIT Cloud provides the basis for this with monthly billing on a pay-as-you-go basis. Users only pay for what they actually use. To ensure that the invoice containing different billing units remains comprehensible even

with complex and multi-level service provision, the pricing models of the STACKIT Cloud are transparently presented in this document.

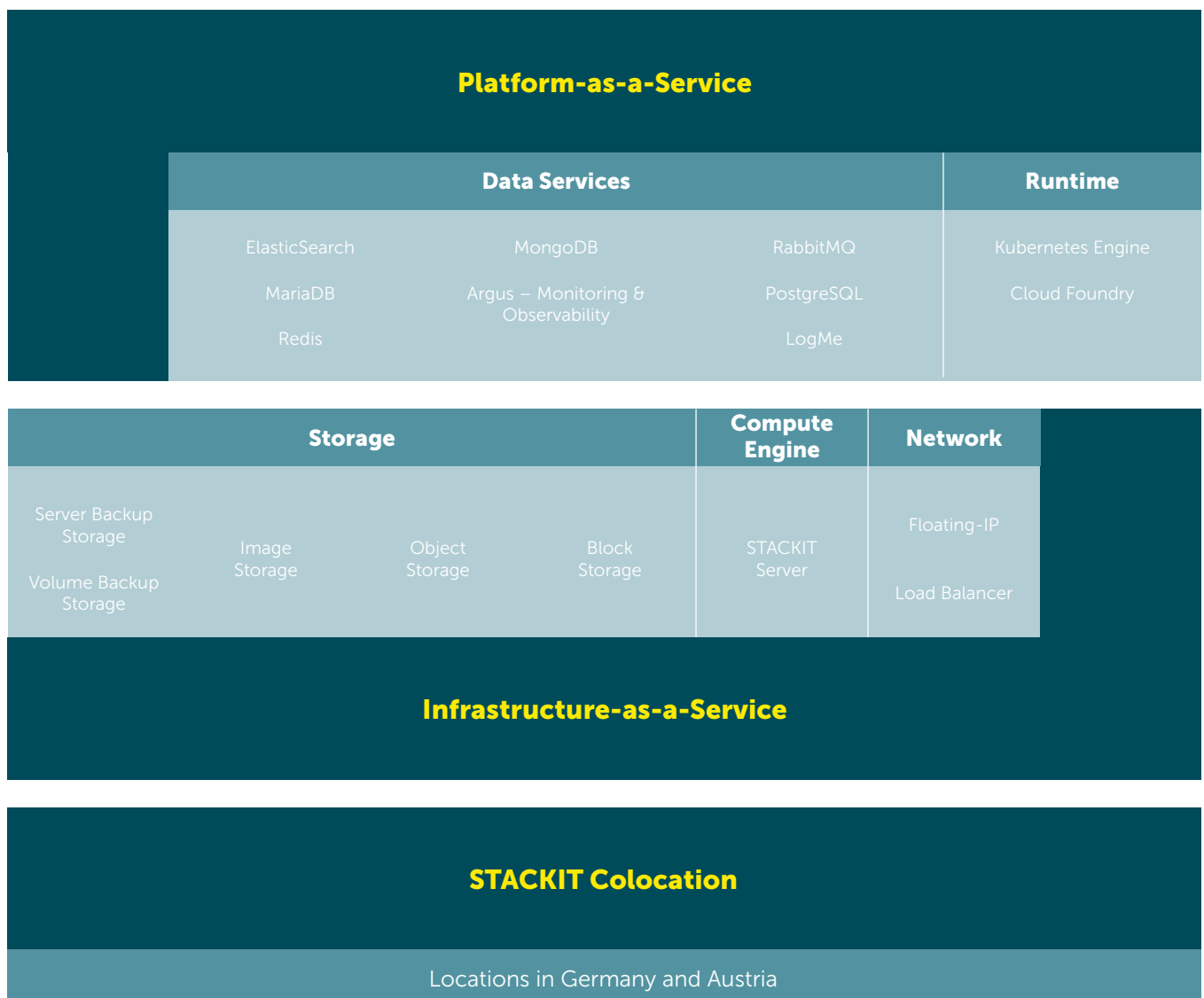


Figure 1: The STACKIT Cloud service portfolio

# INFRASTRUCTURE-AS-A-SERVICE (IAAS)



STACKIT IaaS products give users the flexibility to expand IT resources on demand, quickly provide new applications, and optimize the availability

of the infrastructure. With STACKIT, this takes place through compute, storage, and network – the basic elements of the STACKIT infrastructure.

Storage				Compute Engine	Network
Server Backup Storage	Image Storage	Object Storage	Block Storage	STACKIT Server	Floating-IP
Volume Backup Storage					Load Balancer

**Infrastructure-as-a-Service**

At the heart of Infrastructure-as-a-Service is the STACKIT server, which runs web servers with various images for individual application cases.

STACKIT offers various storage services in compliance with the European General Data Protection Regulation. Furthermore, it offers the floating IP

and load balancer network resources, which ensure stable and secure data transfer.

# STACKIT Compute Engine

The STACKIT Compute Engine provides IT resources over the Internet in the form of servers. With STACKIT, customers can select between the latest Intel, AMD, and ARM servers, which can be customized to meet their requirements.

## STACKIT Server



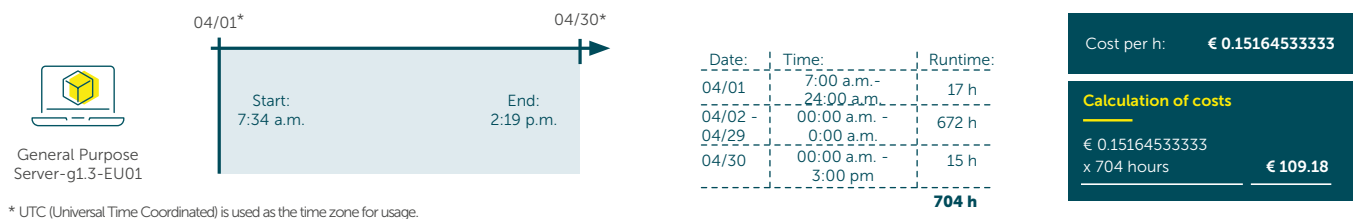
STACKIT offers users a wide range of possible combinations of processor (vCPU), memory (RAM), and operating system (OS Image) for the utilization of the STACKIT server. Depending on your requirements, you can choose the optimum server from a wide variety of prefabricated variations (flavors). These also include GPU servers for particularly computationally intensive applications. During the ordering process, each VM must be assigned to an availability zone (AZ).

STACKIT offers single availability zones (single AZ) and metro availability zones. In the single availability zone, the VM is assigned to the selected AZ. It is independent of other VMs and is not backed up in the event of an AZ failure. In the metro setup, the VM or the data storage has a fixed assignment to a region, but no fixed assignment to an availability zone. A region consists of three or more availability zones and defines physically separate locations. It is ensured that all AZs belonging to a region are always assigned in the same country. In the metro setup, data is automatically mirrored in at least two different

availability zones so that a VM in another AZ is automatically restarted in the event of an AZ failure.

With STACKIT, services are billed per hour or part thereof according to the period of use. Usage of each resource is individually recorded. The individual usage of identical VMs is consolidated for each project and billed on a monthly basis. Most of the VMs, as described above, are offered with the single and metro availability zones. These zones are not aggregated in the invoice because they have different features with diverging, fixed hourly prices.

## Example 1: STACKIT Server

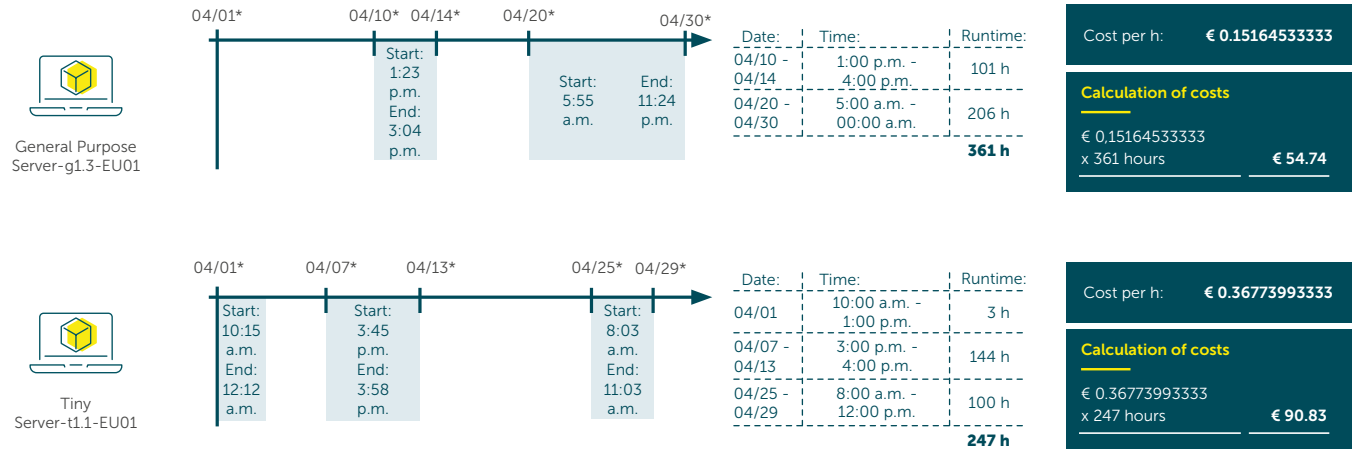


The user uses a VM with the type „General Purpose Server-g1.3-EU01“ in April. On 04/01, the server is started at 7:34 a.m. and is used for a total

runtime of 17 hours on the first day. The VM is active for the entire month and is deleted at 2:19 p.m. on 04/30. On the last day, it therefore runs for

15 hours or part thereof. The sum of all hours gives a total runtime of 704 h, which is billed for €109.18.

## Example 2: STACKIT Server



\* UTC (Universal Time Coordinated) is used as the time zone for usage.

In this example, two different VM types are acquired in April. Both run irregularly and are not fully utilized

for the whole month. Each type of server is shown individually per project.

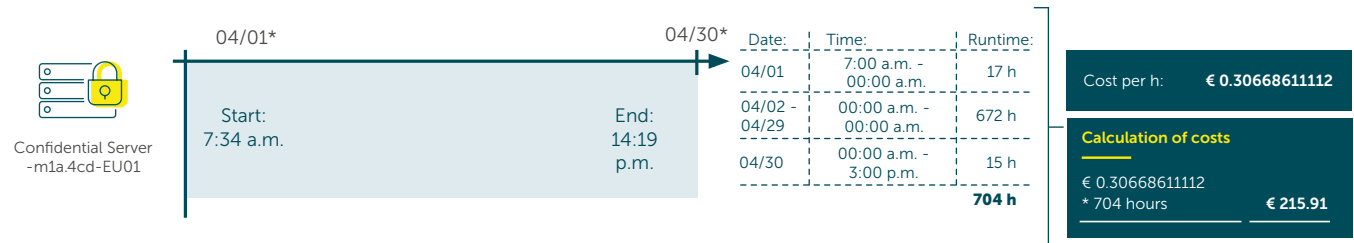
## STACKIT Confidential Computing

STACKIT Confidential Computing offers an additional layer of security for data encryption, which enables data to be encrypted when it is

being processed. With STACKIT, the services offered differentiate between Confidential Server and Confidential Kubernetes. Here, Confidential

Kubernetes already includes the corresponding Confidential Server in the price.

## Example 2: STACKIT Server



\* UTC (Universal Time Coordinated) is used as the time zone for usage.

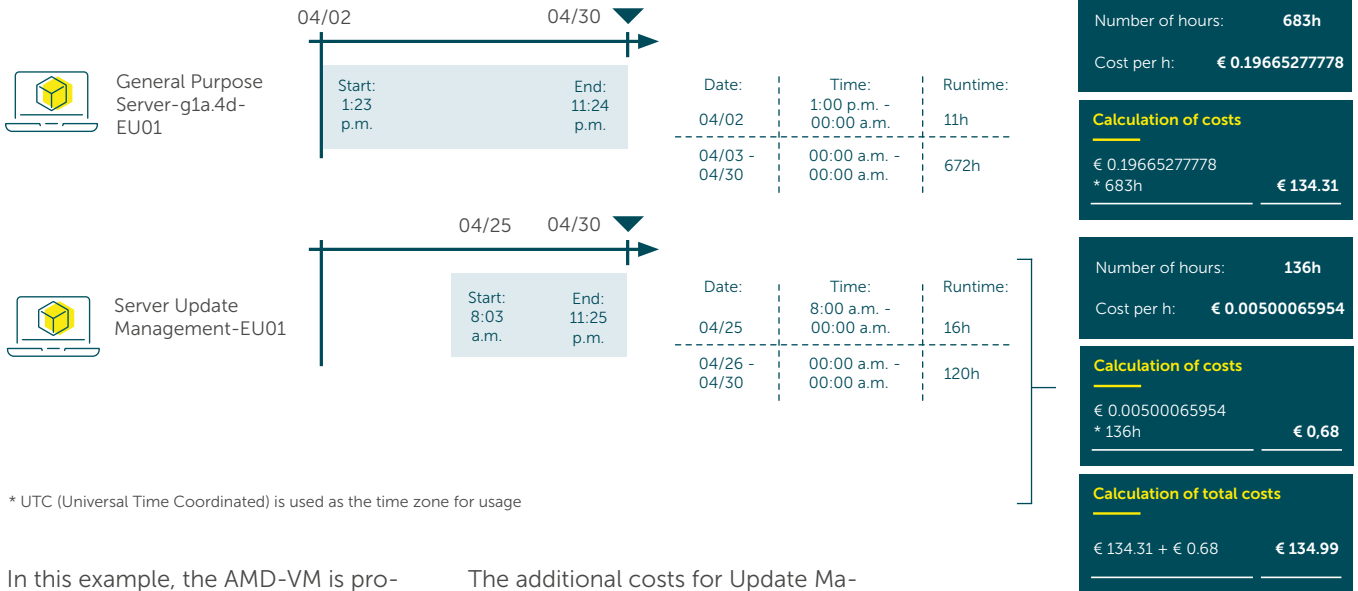
The costs for the Confidential Server are already included in the Confidential Kubernetes service.

The user uses a Confidential Server with the type "Confidential Server-m1a.4cd- EU01" in April. On 04/01, the server is started at 7:34 a.m. and on the first day is used for a total runtime of 17 hours.

The server is active for the entire month and is deactivated at 2:19 p.m. on 04/30. On the last day, it therefore runs for 15 hours or part thereof. The sum of all hours gives a total runtime of 704 h, which, when multiplied by

the hourly price of €0.3066861112/h, produces a monthly invoice of €215.91. If the user uses a service of type "Confidential Kubernetes", this already includes the use and price of the Confidential Server required for this.

## STACKIT Server Update Management:



In this example, the AMD-VM is provided continuously from 04/02 and from 04/25 Update Management is added.

The additional costs for Update Management are only calculated for the period of use per hour or part thereof.

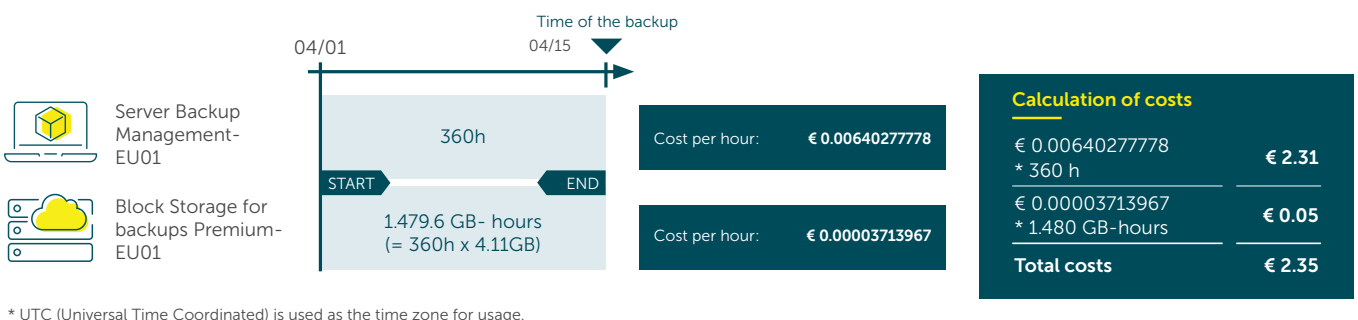
## STACKIT Server Backup Management

STACKIT Server Backup Management enables the automatic backup and independent recovery of servers. To protect the data, recovery interval settings and a summary of performed backups are available at all times. Billing for this service comprises the Backup Management and Backup

Storage service items. The Backup Management service item is billed per hour or part thereof for each server for which the user has activated Backup Management. Billing for this service ends as soon as Server Backup Management is terminated or the server assigned to Server

Backup Management is deleted. Just like with the STACKIT Service Backup Storage, the cost calculation for Backup Storage is based on the hours or part thereof per gigabyte for each backup.

## Beispiel: STACKIT Server Backup Management



In this case, the service provision consists firstly of Backup Management, which accounts for a total time of 360 h.

Secondly, it consists of Backup Storage with a volume of 1,479.6 GB.

Both components are included in the invoice and give a total cost of €2.35.

# STACKIT STORAGE



STACKIT features two different storage technologies: Block Storage and Object Storage. The billing models

of Block Storage and Object Storage are fundamentally different. Object Storage is billed exclusively per gigabyte-hour or part thereof (GB-hours) and is independent of the VM. During the measured period, the provisioned storage is calculated on a per-gigabyte basis. Block Storage involves dynamic hard disk storage, for which two

service items are billed. The hard disks are directly connected to a STACKIT server and enable rapid data exchange. It is possible to flexibly choose from a selection of different performance classes according to requirements.

## STACKIT Object Storage

STACKIT Object Storage can store files in a flat structure using an S3-compatible protocol. The files are directly found and retrieved as objects in a large storage pool via a unique

identifier. This architecture makes Object Storage extremely scalable and is ideal for storing large quantities of unstructured data. The actually used data quantity forms the calculation

basis for billing. This is recorded in GB-hours and multiplied by the currently valid list price.

## Beispiel: Object Storage

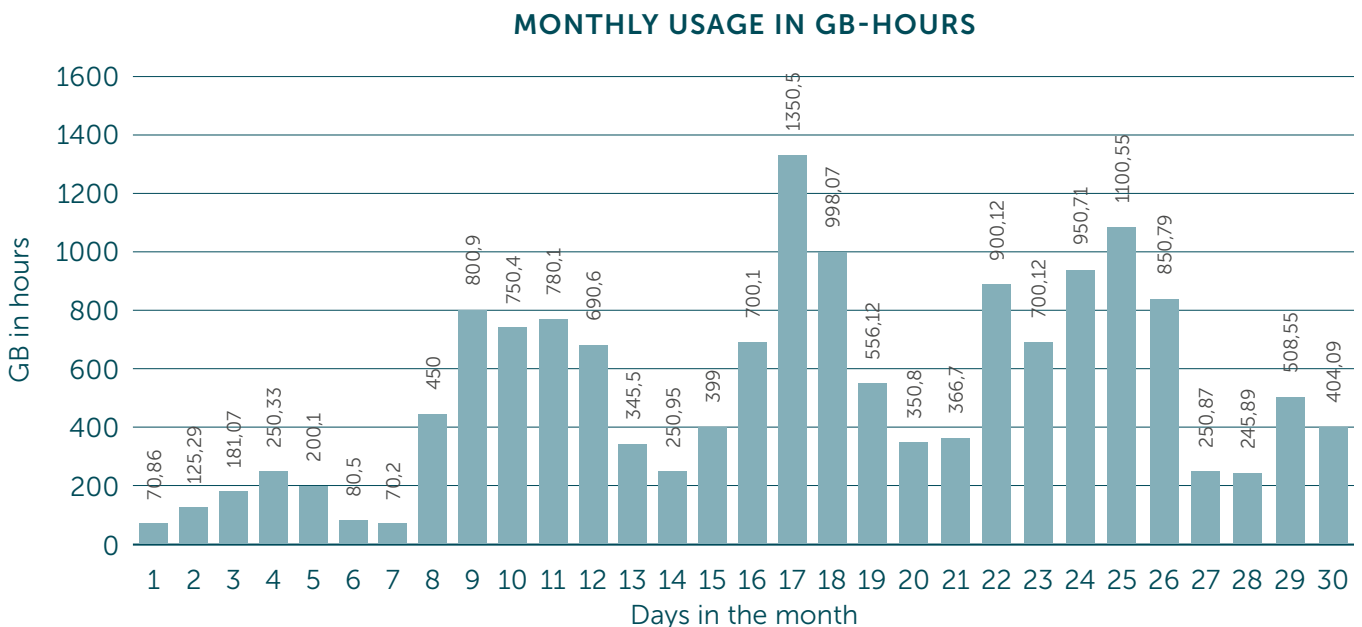


Figure 2: Monthly usage in GB-hours

The use of Object Storage can fluctuate significantly depending on the actual usage during the month. Usage is recorded in megabytes and an exact value is measured every 15 minutes. The total of these values gives the

amount for the billing month and is then rounded up to the nearest GB-hour or part thereof. However, billing takes place at the end of the service provision (at the end of the month at the latest). The total usage in the exam-

ple shown above is 15,679.78 GB-hours. This corresponds to 15,680 GB-hours and €0.58 on the invoice (15,680 GB/h \* €0.00003697772).



## STACKIT Block Storage

Block Storage divides the data into blocks, which are stored as separate pieces, each with a unique identifier. Each block is independent of one another and can be configured to work with different operating systems. STACKIT Block Storage provides storage as disk volumes for VMs and snapshots. As with VMs, Block

Storage also offers the option to choose between availability zones. Two service items are recorded and billed for each Block Storage disk.

- Capacity
- Performance

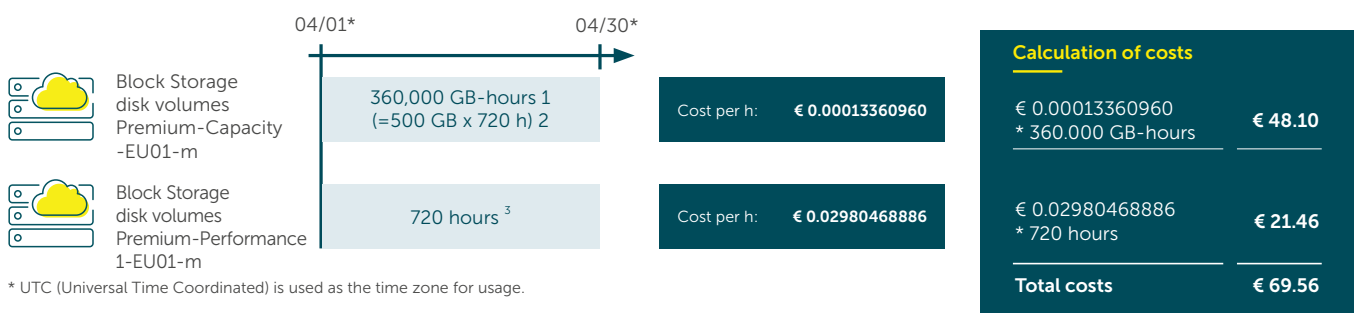
Unlike with Object Storage, the capacity-related costs of usage are not based on the actually used memory in this case, but the reserved memory. The reserved memory capacity can be dynamically adjusted. In the process, the price for the provisioned disk capacity is independent of the performance flavors.

This is the portion of the costs in which the price for each disk is billed per hour or part thereof. This occurs even if the disk volume is not connected to a STACKIT server. The user can choose from the performance classes listed here ("Figure 3").

Performance class	API-name	IOPS	Max. bandwidth
Performance class 0	storage_premium_perf0	120	25 Mbps
Performance class 1	storage_premium_perf1	500	50 Mbps
Performance class 2	storage_premium_perf2	1.000	100 Mbps
Performance class 4	storage_premium_perf4	2.000	150 Mbps
Performance class 6	storage_premium_perf6	5.000	200 Mbps
Performance class 8	storage_premium_perf8	10.000	250 Mbps
Performance class 10	storage_premium_perf10	15.000	300 Mbps
Performance class 12	storage_premium_perf12	20.000	350 Mbps

Figure 3: Overview of individual performance classes

## Example: Block Storage



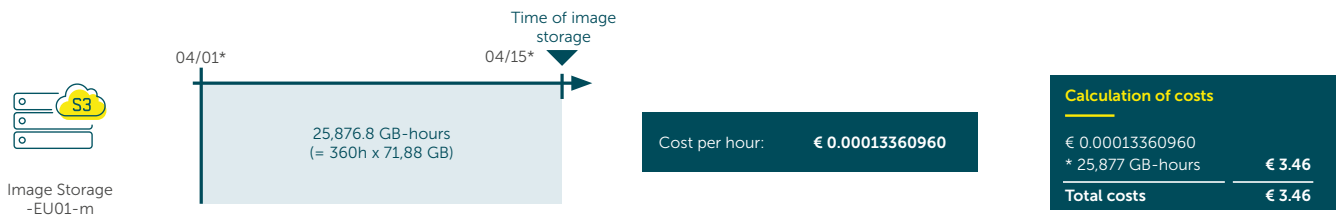
## STACKIT Image Storage

An operating system is added for the use of virtual machines. For this reason, a minimum requirement of storage is already occupied upon purchase.

The size of this storage volume varies depending on the installed operating system. Image Storage stores an image of the operating system and is billed

exclusively as a metro AZ. Billing takes place per hour or part thereof per gigabyte for each image. There is no charge for the performance class.

### Example: Image Storage



\* UTC (Universal Time Coordinated) is used as the time zone for usage.

On 04/15, the user opts for a central storage location for his operating system image with a usage value of 25,876.8 GB.

25,877 GB or part thereof at a total cost of €3.46 is shown on the invoice.

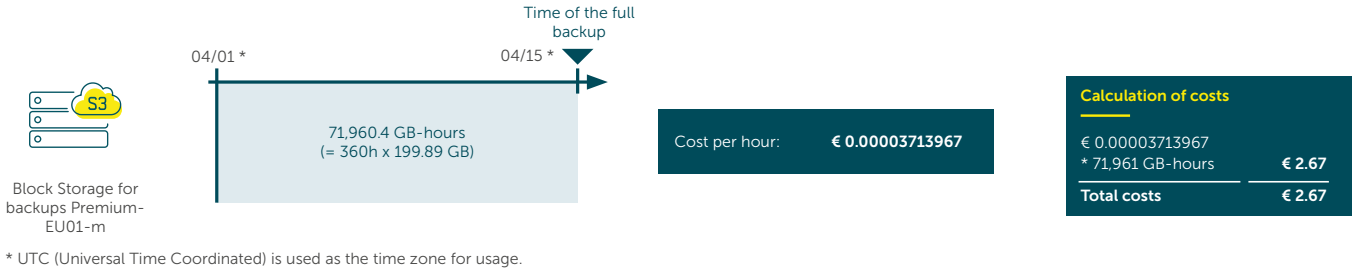
## STACKIT Volume Backup Storage

Backup Storage is a cloud service that is logically and physically separated from Block Storage. It is used to back up disk volumes and provides data storage for the separately acquired Block Storage. Backup Storage offers the user a choice between full and incremental backups. Both variants are available for metro and single availability zones.

As the name suggests, a full backup involves backing up the entire storage data. This generally corresponds to the size of the target disk volume. The costs therefore always relate to the total storage volume, even if the data is unchanged since the last full backup. An Incremental Backup must always refer to a Full Backup. Only changes in relation to the specified full backup are backed up.

An incremental backup has the same calculation basis and units as a full backup, although it is billed at a discounted rate (10%). The recovery time for both types of backup largely depends on the respective backup size and the performance class of the used disk volume. The price for full and incremental backups is based on the hours or part thereof per gigabyte for each backup.

## Example: Full Backup Storage

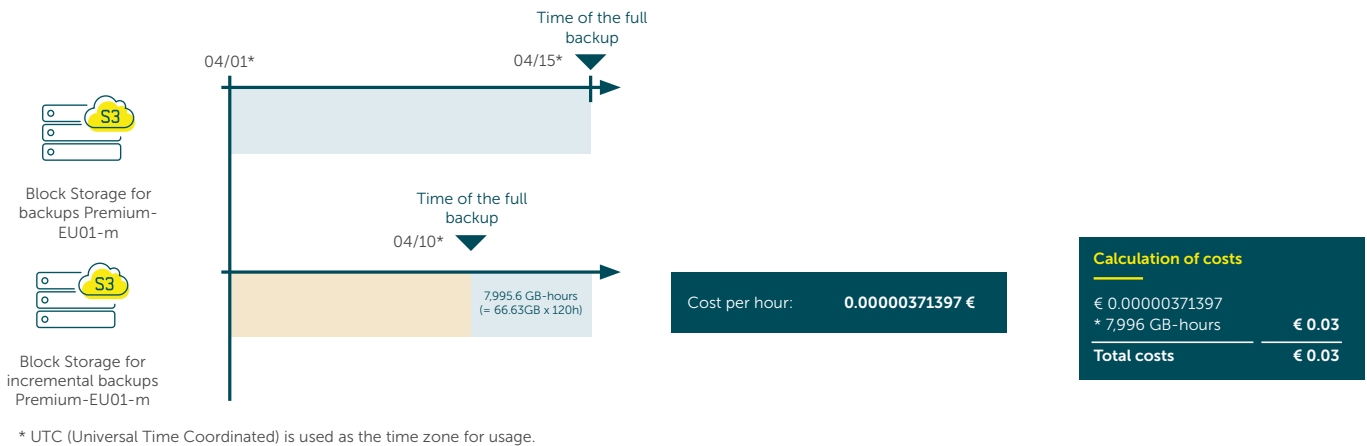


A single full backup is carried out in April on 04/15. The total storage volume is the same size as the

selected disk volume and has a value of 199.89 GB at this point in time. According to the arrangement set out

above, 71,961 GB-hours or part thereof are subject to charge at the end of the month.

## Example: Incremental Backup Storage



Charges are only applied to the data since the last full backup in the case of an incremental backup. This change

in volume between 04/10 and 04/15 amounts to 7,995.6 GB-hours. Therefore, 7,996 GB-hours or part

thereof are shown on the invoice.

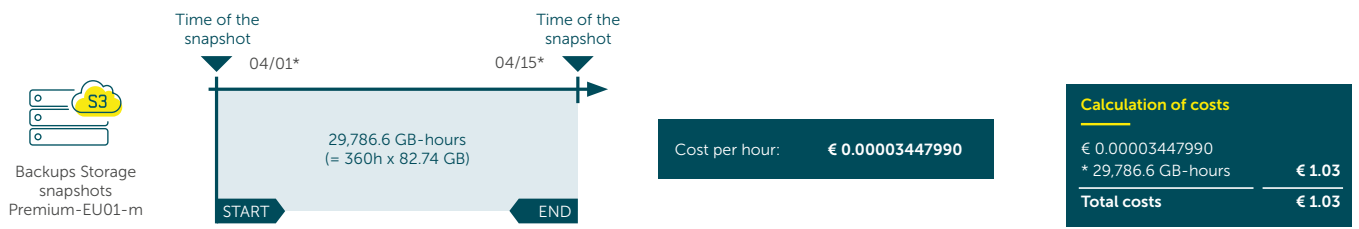
## STACKIT Snapshot

STACKIT offers the option to create snapshots for existing data storage. A snapshot is a copy of the current state of the server's data. This state of the data can be recovered at a future point in time. In order not to lose the

current state, a new volume with the same size as the original is used. As backup and recovery are not part of the snapshot, it is clearly differentiated from Backup Storage. This is also reflected in the fact that no charge is

incurred for performance. The capacity of the snapshot is recorded per GB-hour or part thereof per snapshot and cumulated on the invoice for all snapshots used in the project.

### Example: STACKIT Snapshot



\* UTC (Universal Time Coordinated) is used as the time zone for usage.

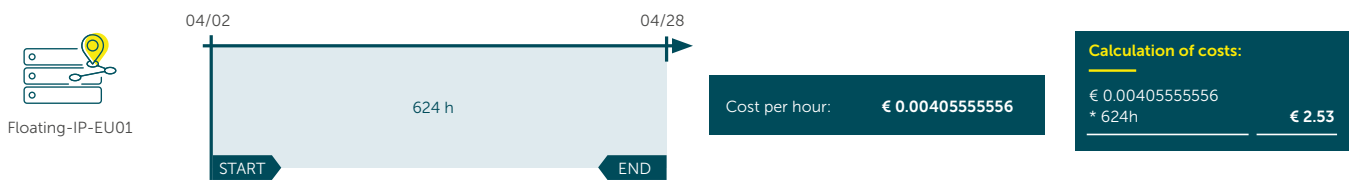
In the period from 04/01 to 04/15, the user creates a snapshot with a data size of 82.74 GB. The invoice

shows a cost of €1.03, comprising the full gigabyte value of 29,787 GB and the currently valid price.

# STACKIT NETWORK

STACKIT Network is a secure connectivity service. With an Internet connection, the system can be configured, individually expanded, and protected against unauthorized access. By default, STACKIT VMs only receive internal IP addresses. However, public addresses can be added as needed.

## STACKIT Floating IP



\* UTC (Universal Time Coordinated) is used as the time zone for usage.

Between 04/02 and 04/28, the user acquires a floating IP. The period of use amounts to exactly 624 h, which

is likewise included in the invoice at the end of the month and multiplied by the exact hourly price.

## STACKIT Router IP

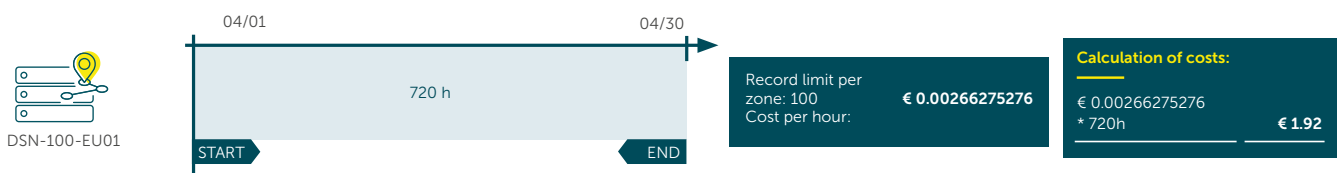
Besides the floating IP, the router IP also allows VMs to access the Internet using Source Network Address Translation (SNAT). It is therefore also automatically allocated when the first VM is created in a web-based project. The costs for this service are billed on an hourly basis (see floating IP example).

## STACKIT Egress Traffic

With STACKIT, outgoing data traffic is forwarded in GB per month. This is currently free of charge.

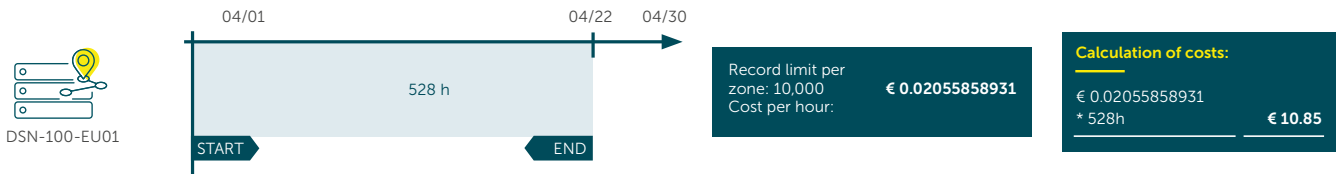
## STACKIT DNS Network Service

With STACKIT DNS, you can publish your domain names in the global DNS in a cost-effective manner. Here, DNS acts as a service for translating IP addresses. With STACKIT, DNS services are classified into three sizes according to the number of entries and are subject to hourly billing.



\* UTC (Universal Time Coordinated) is used as the time zone for usage.

If DNS services are used for a whole month with up to 100 records, the hourly price of the service DNS-100-EU1 is multiplied by the maximum number of monthly hours (720 h) and charged.



\*UTC (Universal Time Coordinated) is used as the time zone for usage.

For DNS services with up to 10,000 records, the hourly price of the service DNS-10000-EU1 is multiplied by the number of monthly hours actually used and charged.

## STACKIT Load Balancer

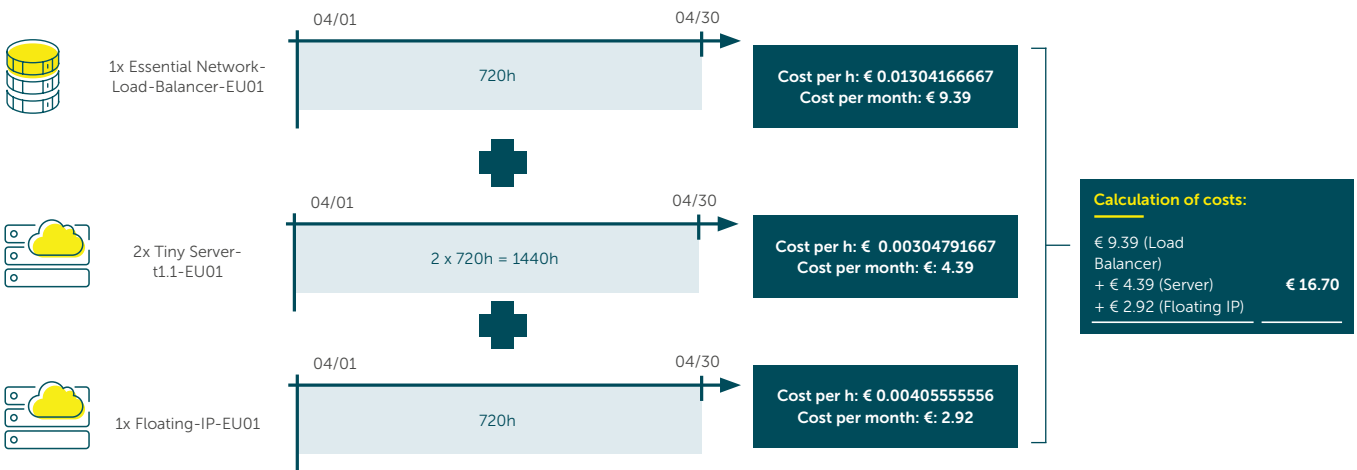
The STACKIT load balancer spreads incoming network traffic across multiple servers to ensure optimum distribution and prevent individual servers from being overloaded.

The costs of the load balancer are made up of the following components:

- Fee per load balancer
- Two VMs for highly available load distribution to operate the load balancer
- Floating IP (optional)

We will not charge you any hidden/unclear additional costs that might be difficult to determine for your workload. These include:

- Tiered pricing according to forwarding rules
- Pricing of data traffic



In order to use the load balancer, in addition to the accruing fees, 2 tiny servers also need to be activated. Your requirements also include the connectivity of external systems,

whereby you require a floating IP. In the example given, these 3 services run for 720 hours over the course of the month. Use of each individual service is multiplied by the valid list

sales price at the end of the month and is shown as an item on the monthly invoice.

# PLATFORM-AS-A-SERVICE



The STACKIT Platform-as-a-Service offerings are based on the cloud infrastructure components and provide various data, container, and runtime services in enterprise quality.

Individual services can be acquired via the STACKIT Portal, CLI, or API, and individual components can be selected during the ordering process according to the required performance.

## Platform-as-a-Service

	Data Services			Runtime
ElasticSearch	Mongo DB	RabbitMQ	Kubernetes Engine	
MariaDB	Argus – Monitoring & Observability	PostgreSQL	Cloud Foundry	
Redis		LogMe		

# STACKIT RUNTIME

STACKIT Runtime is part of the Platform-as-a-Service offering and makes applications available online for users in a runtime environment within a few minutes.

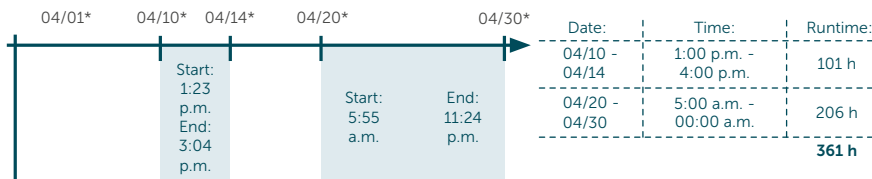
## STACKIT Cloud Foundry

As an open-source platform, STACKIT Cloud Foundry provides the infrastructural properties required to roll out and run applications on the STACKIT Cloud in just a few moments. The configuration of the infrastructure from the network to runtime is managed by STACKIT. Users can select the settings for their organization in the

STACKIT Portal themselves. This includes the selection of the organization’s quota limits.

This storage limitation defines the maximum amount of resources that can be shared across all applications in the organization. This value can serve as a guide for the cost budget

when the maximum usage is reached. The user does not constantly pay for the individual resources that are selected as the quota limit here, but only the actually used computing capacity. The costs are the same irrespective of the selected quota and are passed on in megabytes per hour or part thereof for the used memory.



Cost per h:	<b>€ 0.00004093510 /MB</b>
<b>Calculation of costs:</b>	
€ 0.00004093510	
*361h *256MB	<b>€ 3.78</b>

The total costs for the “Small” Cloud Foundry and the “Extra-Large” Cloud Foundry amount to the same value, as the total usage of both Cloud

Foundry instances is identical, despite the different quota. Services used in Cloud Foundry, such as databases, messaging, caching, logging, are not

included in the Cloud Foundry price and are billed separately according to the applicable pricing model (see below).

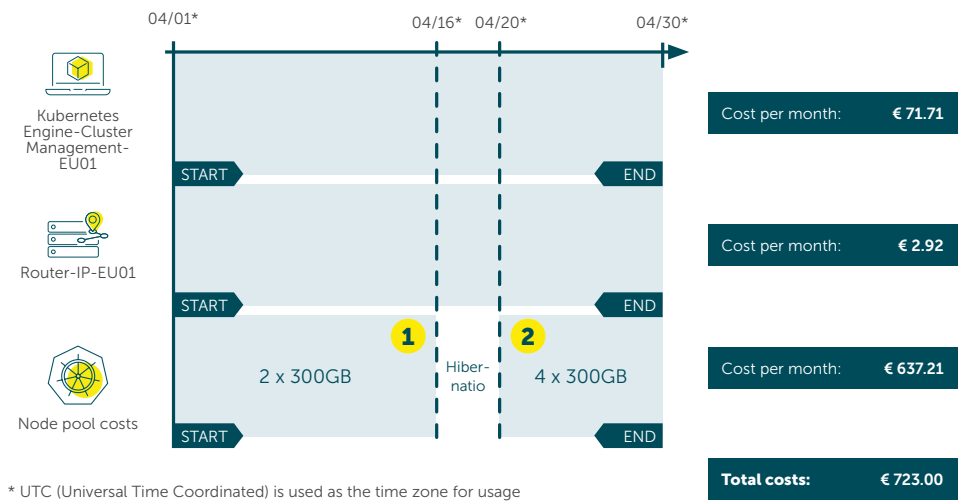


# STACKIT Kubernetes Engine

STACKIT Kubernetes Engine (SKE) is a container service that speeds up and simplifies work in the cloud environment. Individually configured clusters can be created in the self-service user interface. This includes the number of

nodes as well as the availability zone, various VM types, and the storage type, including the data volume. The cost items in the Kubernetes cluster are transparently explained in the diagram below.

## Beispiel: STACKIT Kubernetes



\* UTC (Universal Time Coordinated) is used as the time zone for usage

**Calculation of costs**

General Purpose Server-g1.3-EU01-m/ h	€ 0.30329066667
Block Storage for disk volumes Premium-Capacity-EU01/ h	€ 0.00009076380
Block Storage for disk volumes Premium-Performance 4-EU01/ h	€ 0.04877130904
Maximum number of nodes 4	

**1 Calculation of node pool costs**

STACKIT Server :	€ 0.30329066667	* 360 h x 2	€ 291.16
Performance:	€ 0.04877130904	* 360 h x 2	€ 35.12
Capacity	€ 0.00009076380	* 360 h x 2 x 300 GB	€ 19.60
<b>Total Costs</b>			<b>€ 273.09</b>

**2 Calculation of node pool costs**

STACKIT Server :	€ 0.30329066667	* 240 h * 4	€ 288.00
Performance	€ 0.04877130904	* 240 h * 4	€ 46.82
Capacity:	€ 0.00009076380	* 360 h * 4 * 300 GB	€ 26.14
<b>Total Costs</b>			<b>€ 364.12</b>

The user continues to expand his sales channels and opens an online shop. Due to the increased flexibility and working efficiency, he opts for the STACKIT Kubernetes service on 04/01. Two node pools are active until 04/15

and are put into hibernation mode on 04/16. There is no charge for the node pools during this period. The user launches a marketing offensive on 04/20 and expands his online range. So many interactions take place on his

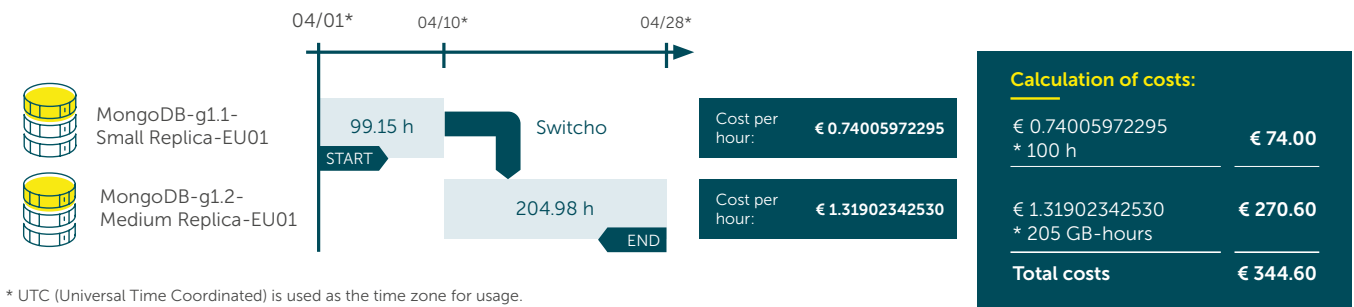
online shop that two further nodes are automatically added via autoscaling to distribute the load and continue to ensure smooth operation.

# STACKIT Data Services

STACKIT offers several data services. Various Platform-as-a-Service plans are available to users, depending on requirements. These are recorded rounded up to the nearest hour and have a fixed hourly price. Billing takes

place on a cause-related basis per hour or part thereof according to the currently valid prices. The price includes all components assigned to the service plan (compute, storage, network, etc.). The resources mentio-

ned are not billed separately, but are included in the package. During the period of service provision, the user has the option to change the size of the service at any time.



\* UTC (Universal Time Coordinated) is used as the time zone for usage.

On 04/01, he acquires the Small Replica database and uses it until 04/10 with a total runtime of 99.15 (~100) hours. On 04/10, he opts for an upgrade to a Medium Replica. This

database runs for 204.98 (~205) hours until 04/28 and is deleted on this day. After being used until the month end closing, the services form two billing items with a total usage of 305 h and

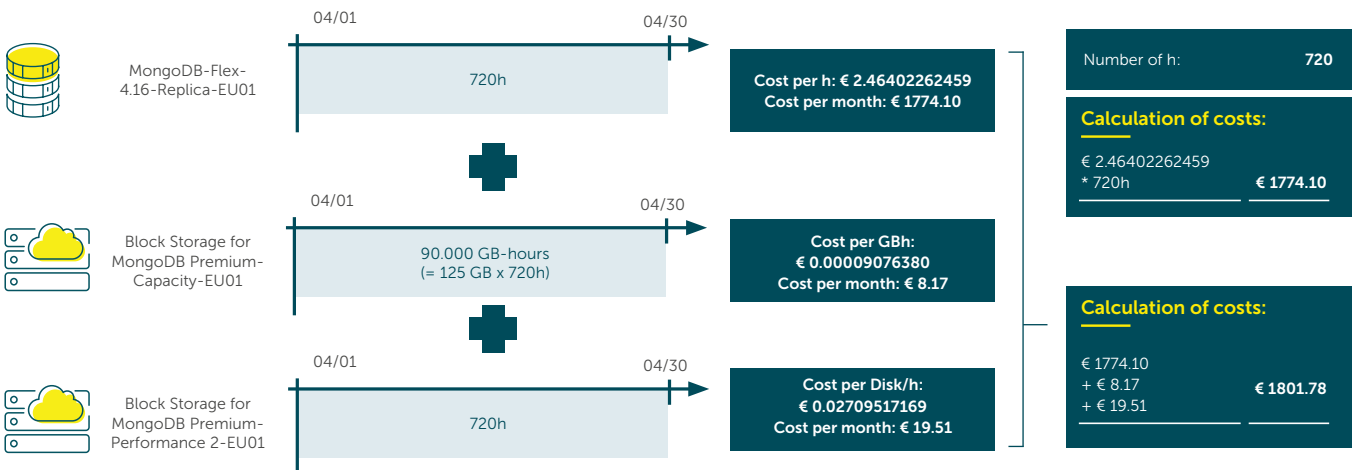
a total cost of €344.60. This billing example also serves as a guide for the other Platform-as-a-Service offerings (ElasticSearch, MariaDB, Redis, RabbitMQ, PostgreSQL, LogMe).

# STACKIT MongoDB Flex/ PostgreSQL Flex

The flex options for database services are one particular feature. Here, the storage unit used for the database

and, following the order, the backup storage can be freely booked for this per GB. This gives you maximum

flexibility when it comes to choosing the optimum database solution.



Here, Block Storage of 125 GB is acquired as a disk for the total period of 720 hours for MongoDB. This

means that use of the database and disk storage is multiplied by the total number of hours. For the storage

capacity, the number of hours is multiplied by the memory size used (125 GB) and the list price.

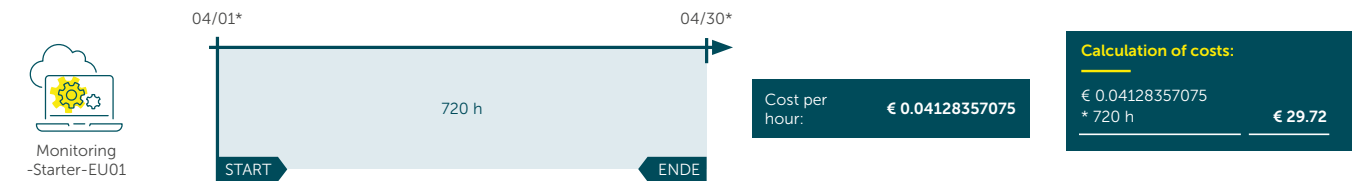
## STACKIT Argus

Argus is a versatile monitoring/observability service that analyzes the technical data of various predefined

targets. A target is a web address in the OpenMetrics format on which the service can call up the customer me-

trics. The collected data is visualized in the customizable dashboard using different types of diagrams.

## Example: STACKIT Argus



\* UTC (Universal Time Coordinated) is used as the time zone for usage.

In the monthly period shown above, the service is used for a total duration of 720 h. This value is multiplied by the cost per hour.

The result of €29.72 is billed and listed on the invoice at the end of the month.

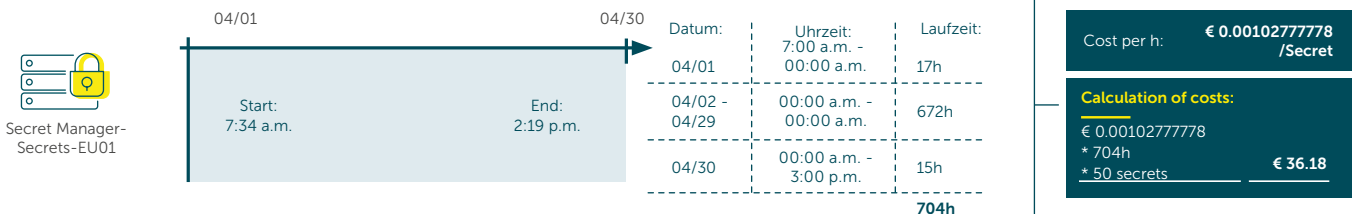
## STACKIT Secrets Manager

You can use the STACKIT Secrets Manager to store, manage, and retrieve sensitive data, for example, company secrets. The Secrets Manager is subject to hourly billing based on the number of secrets stored.

Costs for API calls or other items are not incurred.

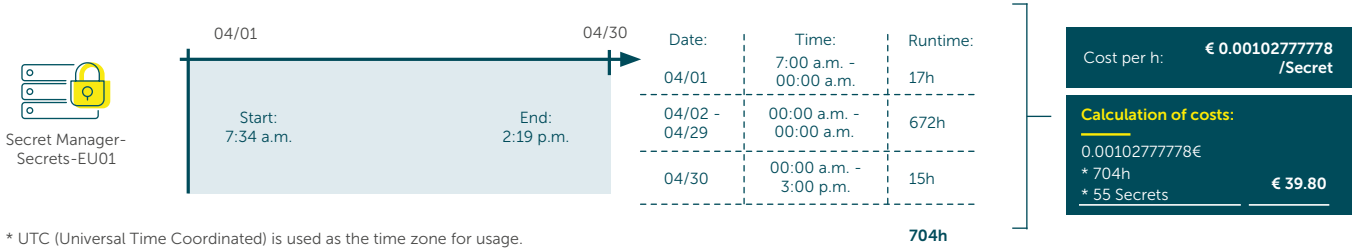
Thanks to the provision of a secure key value store, all secrets are reliably protected around the clock. Only the first 50 secrets are charged as a mini-

imum order quantity; beyond that each individual secret is charged separately.

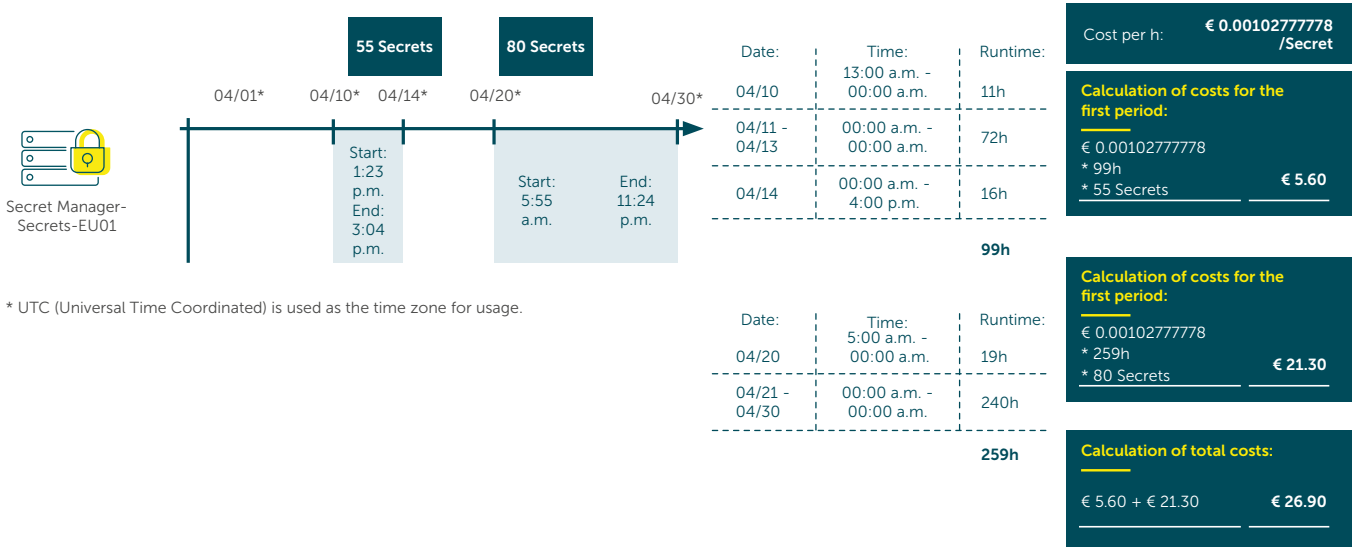


\* UTC (Universal Time Coordinated) is used as the time zone for usage.

If fewer than 50 secrets are stored, the minimum order quantity of 50 is used as the basis for the calculation and this is multiplied by the number of monthly hours and the price.



If more than 50 secrets are stored, the exact number is multiplied by the number of monthly hours and the price.



During months where the number of secrets fluctuates, the active number of secrets is multiplied by the respective runtime and the price per runtime. The total of the individual period items is then calculated.

# LEGAL NOTICE

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## Publisher

**Schwarz IT KG**

**STACKIT**

Stiftsbergstraße 1

74172 Neckarsulm

E-Mail: [info@stackit.de](mailto:info@stackit.de)

Internet: [www.stackit.de](http://www.stackit.de)

Telefon: 07132-30-474747

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