

COMARCH



COMARCH INFRASPACE CLOUD

Functional scope

Table of content

1	Introduction	4
2	General information	5
2.1	Place of service provision	5
2.2	Cloud Management Portal	6
2.3	OpenStack	7
2.4	Service quotas	8
3	Services	9
3.1	Instances (Virtual Machines)	9
3.1.1	Public images	10
3.1.2	Private Images	12
3.1.3	Instances (virtual machines) - pricing:	12
3.2	Storage	18
3.2.1	Block Storage (Volume)	18
3.2.1.1	Block storage - pricing:	19
3.2.2	Object storage	19
3.2.2.1	Object storage - pricing	20
3.3	Network and Security	20
3.3.1	Virtual Private Network	20
3.3.2	Virtual Router	20
3.3.3	Security Groups	20
3.3.4	Public IP (Floating IP)	21
3.3.5	Anti-DDoS	21

3.3.6	Network and Security - pricing	21
3.4	Platform as a Service	21
3.4.1	Load Balancer as a Service	21
3.4.1.1	Load Balancer as a Service - pricing	22
3.4.2	Kubernetes as a Service – coming soon.....	22
3.4.3	Database as a Service (PostgreSQL) – coming soon.....	23
3.4.4	Monitoring as a Service - coming soon	23
3.5	Rights of use, licenses.....	23
3.5.1	General provisions	24
3.6	Optional services	24
3.7	Support plan	25
4	Comarch Managed Services	26
4.1	Scope of services	26
5	Terms and conditions	29
6	List of abbreviations/glossary	30

1 Introduction

Comarch Infraspac Cloud is a commercial solution dedicated to companies looking for a strategic technology partner for investments in cloud services as an element of business model transformation and migration of ICT resources.

The use of Comarch Infraspac Cloud to launch applications based on cloud computing resources allows organizations to reduce investments and maintenance costs connected with their own infrastructure.

Comarch's product is based on scalable (locally and geographically) server infrastructure shared in the infrastructure as a service (IaaS) model with OpenStack control. It provides the ability to share the required computing power defined as resources of virtual processors (vCPU), RAM (memory) and disk space (storage). These resources can be allocated dynamically depending on demand. Resource consumption is billed on a monthly basis with an accuracy of one minute

2 General information

2.1 Place of service provision

Comarch Infraspac Cloud is provided in Cloud regions:

- EU-PL-Krakow
- EU-FR-Lille
- EU-DE-Dresden
- ME-AE-Dubai
- AP-AU-Melbourne



Figure 1 Comarch's Data Centers and Cloud regions

After successful registration on [Cloud Management Portal](#) a tenant will have his own administrator account which enables to use services on the Comarch Infraspac Cloud.

Changes to the configurations under the standard described below can be ordered via Comarch Infraspac Cloud sales.

The following is the Comarch Infraspac Cloud block architecture.

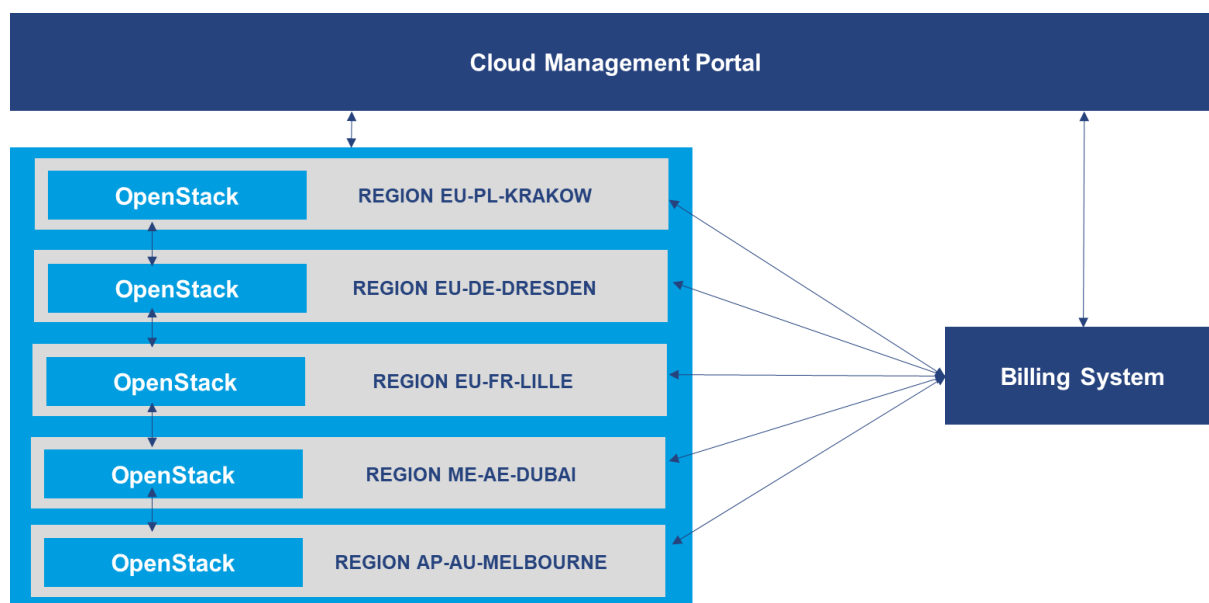


Figure 2 Comarch Infraspac Cloud - Block architecture

2.2 Cloud Management Portal

The Cloud Management Portal, as a web application, is only accessible via HTTPS. The customer requires its access data to log in. As soon as the session is authenticated, the customer can use the available functions.

Comarch Cloud Management Portal enables the customer to manage its invoices, tickets, service usage, personal data, credit card and obtain resources within the assigned tenants. Comarch Cloud Management Portal is available in English.

All communication in the ticket system in Cloud Management Portal can take place in English and Polish..

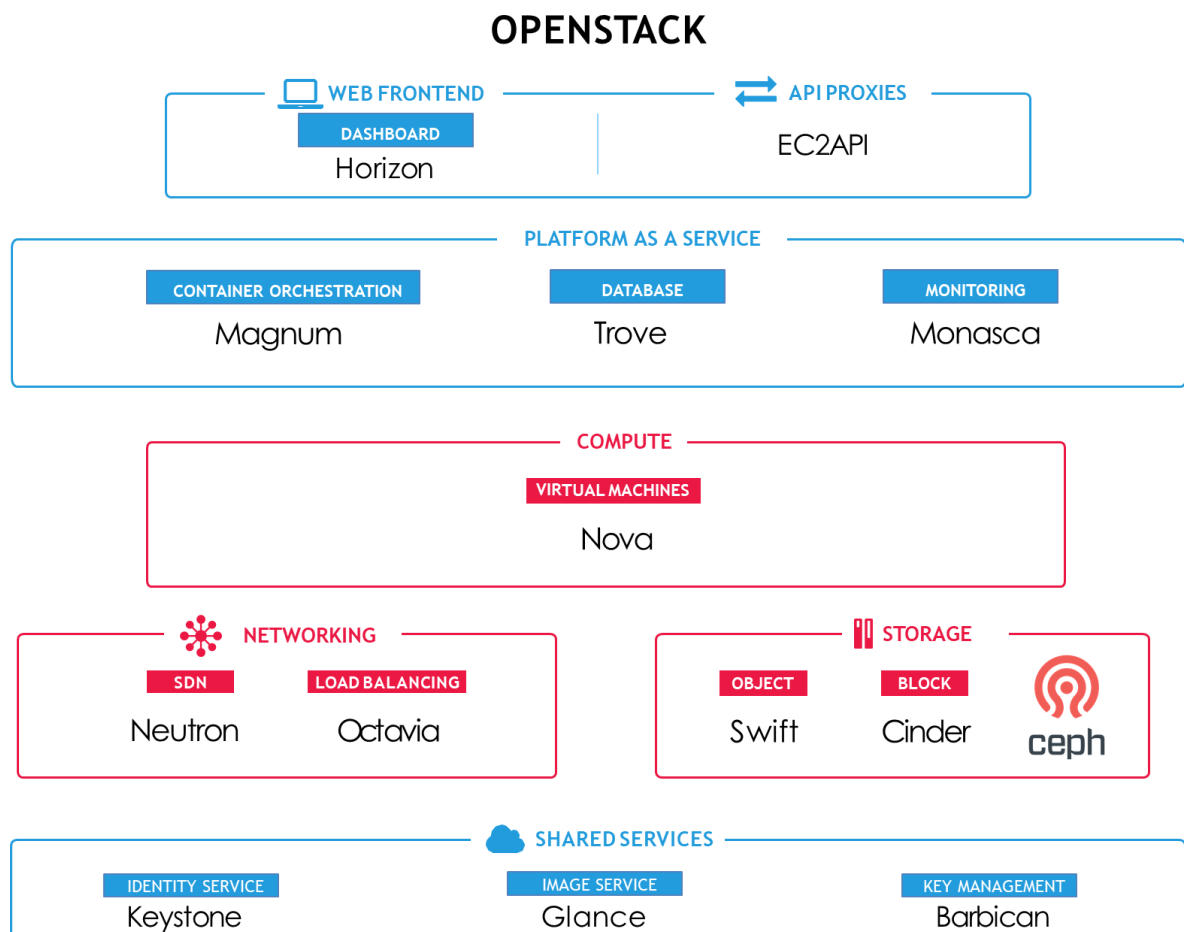
2.3 OpenStack

OpenStack is a cloud operating system that controls large pools of compute, storage, and networking resources throughout a datacenter, all managed and provisioned through APIs with common authentication mechanisms.

A dashboard is also available, giving administrators control while empowering their users to provision resources through a web interface.

Beyond standard infrastructure-as-a-service functionality, additional components provide orchestration, fault management and service management amongst other services to ensure high availability of user applications.

* <https://www.openstack.org/software/>



2.4 Service quotas

Quotas are virtual resource limitations that allow customers to limit their costs. The quotas apply per tenant or OpenStack project and may be increased at the customer's request at Cloud management Portal: <https://management.infraspace-comarch.com/sc/self/tickets>

The following quotas apply by default:

Service	Resource type	Default quota
Compute	Virtual Machines (Instances)	10
	vCPUs	20
	Memory (GB)	40
Storage	Storage (Block and Object) (GB)	1 024
	Number of Volume Storage (Block Storage)	20
Network and Security	Public IP (Floating IP)	5
	Security Groups	10

3 Services

Comarch Infraspac Cloud provides:

- **Infrastructure as a Service**
 - Compute: virtual servers that provides resizable computing power
 - Storage: block storage, object storage
 - Network and Security: virtual network services with public and private IP addresses
- **Platforms as a Service**
 - Load Balancer - based on OpenStack module Octavia
 - Kubernetes – based on OpenStack module Magnum - coming soon
 - Database - PostgreSQL – based on OpenStack module Trove - coming soon
 - Monitoring – based on OpenStack module Monasca - coming soon

Estimate of the calculation charges can be found at:

<https://www.comarch.com/trade-and-services/ict/cloud-infraspac/cloud-calculator/>

For clients having its registered office in Poland, fees and charges will be converted from EUR to PLN according to the exchange rate available in Table A of the National Bank of Poland (NBP) on the day preceding the day of payment. Table A NBP is available here: <https://www.nbp.pl/homen.aspx?c=/ascx/ArchAen.ascx>

3.1 Instances (Virtual Machines)

The Instances consists of a vCPU (1vCPU = 1 thread), RAM (GB), Operating System (public or private image) and block storage.

The customer can choose between pre-configured sizes computing power called flavors.

List of all flavors available in each region you can find here: [Flavors](#)

Types of used processors:

- Intel® Xeon® Gold 6138 2.0GHz (Max Turbo 3.7 GHz)
- AMD EPYC 2.0 GHz (Max Boost 3.0GHz)

Availability of processor type in each region:

Region	INTEL	AMD
EU-PL-Krakow	✓	✗
EU-DE-Dresden	✓	✗
EU-FR-Lille	✓	✗
ME-AE-Dubai	✗	✓
AP-AU-Melbourne	✗	✓

3.1.1 Public images

The following public images are provided by Comarch:

Region: EU-PL-Krakow:

- Centos 6.9
- Centos 7
- Centos-7-1809
- Centos-7-1905
- Centos-7-1908-ext4
- Centos-7-monitoring
- Cirros
- Debian 9.3.6
- Fedora.27
- OracleEnterpriseLinux-7.4
- Ubuntu-16.04

- Ubuntu-18.04

Region: EU-DE-Dresden:

- CentOS-6-1901
- Centos-7
- CentOS-7-1901
- Centos-7-1905-murano
- Centos-7-1908-ext4
- Cirros-0.4.0-x86_64
- Ubuntu-18.04-LTS-20190513

Region: EU-FR-Lille:

- Centos-6
- Centos-7-1809
- Centos-7-1901
- Centos-7-1905
- Centos-7-1905-murano
- Centos-7-1908-ext4
- Centos7-MonitoringApp
- Cirros-0.4.0
- Ubuntu-16.04
- Ubuntu-18.04

- **Region: ME-AE-Dubai:**

- Centos-6.9
- Centos-7-1905
- Centos-7-1908-ext4
- Cirros
- Debian-9.3.6
- Fedora.27
- OracleEnterpriseLinux-7.4
- Ubuntu-16.04

- Ubuntu-18.04
- **Region: AP-AU-Melbourne:**
 - Centos-6.9
 - Centos-7-1905
 - Centos-7-1908-ext4
 - Cirros
 - Debian-9.3.6
 - Fedora.27
 - OracleEnterpriseLinux-7.4
 - Ubuntu-16.04
 - Ubuntu-18.04

3.1.2 Private Images

The customer has the opportunity to upload its own "private images" to the Image Management Service. Be aware that customer is responsible for licensing "private images"

3.1.3 Instances (virtual machines) - pricing:

There are two billing options:

- Pay as you go – payment by the minute with no long-term commitment or upfront payments. You only pay from the moment the service is created until it is deleted.
- Reservation (soon) – an advanced purchase of a Instance (Virtual Machine) for one or three years in a specified region with monthly payment:
 - One year reservation – 10% discount of pay as you go price
 - Three-year reservation – 30% discount of pay as you go price

It is not possible to switch reserved service.

Region: EU-PL-Krakow				
No.	Flavor	vCPU	RAM (GB)	Pay as you go PL-Krakow Price per month
1	p.c8r12	8	12	108,64€
2	C8R16	8	16	121,52€
3	C8R64	8	64	276,08€
4	C8R32	8	32	173,04€
5	p.c2r2	2	2	23,94€
6	C4R8	4	8	60,76€
7	p.c2r8	2	8	43,26€
8	p.c4r8	4	8	60,76€
9	p.c4r32	4	32	138,04€
10	p.c1r2	1	2	15,19€
11	p.c12r12	12	12	143,64€
12	p.c2r12	2	12	56,14€
13	p.c8r6	8	6	89,32€
14	p.c2r4	2	4	30,38€
15	p.c8r88	8	88	353,36€
16	p.c16r8	16	8	165,76€
17	p.c8r16	8	16	121,52€
18	C32R64	32	64	486,08€
19	p.c16r32	16	32	243,04€
20	p.c4r4	4	4	47,88€
21	p.c16r16	16	16	191,52€
22	p.c8r8	8	8	95,76€
23	C4R32	4	32	138,04€
24	p.c8r24	8	24	147,28€
25	C16R32	16	32	243,04€
26	C1R8	1	8	34,51€
27	p.c2r16	2	16	69,02€
28	C16R64	16	64	346,08€
29	p.c16r12	16	12	178,64€
30	p.c12r16	12	16	156,52€
31	p.c12r24	12	24	182,28€
32	p.c1r4	1	4	21,63€

33	C2R16	2	16	69,02€
34	p.c4r24	4	24	112,28€
35	p.c12r8	12	8	130,76€
36	p.c16r24	16	24	217,28€
37	C1R2	1	2	15,19€
38	p.c4r6	4	6	54,32€
39	p.c12r32	12	32	208,04€
40	C2R4	2	4	30,38€
41	C4R16	4	16	86,52€
42	C2R8	2	8	43,26€
43	p.c1r1	1	1	11,97€
44	C1R4	1	4	21,63€
45	p.c4r16	4	16	86,52€
46	p.c2r6	2	6	36,82€
47	p.c8r32	8	32	173,04€

Region: EU-FR-Lille				
No.	Flavor	vCPU	RAM(GB)	Pay as you go FR-Lille
1	p.c8r88	8	88	363,96€
2	p.c8r8	8	8	98,63€
3	p.c8r6	8	6	92,00€
4	p.c8r32	8	32	178,23€
5	p.c8r24	8	24	151,70€
6	p.c8r16	8	16	125,17€
7	p.c8r12	8	12	111,90€
8	p.c4r8	4	8	62,58€
9	p.c4r6	4	6	55,95€
10	p.c4r4	4	4	49,32€
11	p.c4r32	4	32	142,18€
12	p.c4r24	4	24	115,65€
13	p.c4r16	4	16	89,12€
14	p.c2r8	2	8	44,56€
15	p.c2r6	2	6	37,92€
16	p.c2r4	2	4	31,29€
17	p.c2r2	2	2	24,66€
18	p.c2r16	2	16	71,09€
19	p.c2r12	2	12	57,82€

20	p.c1r4	1	4	22,28€
21	p.c1r2	1	2	15,65€
22	p.c1r1	1	1	12,33€
23	p.c16r8	16	8	170,73€
24	p.c16r32	16	32	250,33€
25	p.c16r24	16	24	223,80€
26	p.c16r16	16	16	197,27€
27	p.c16r12	16	12	184,00€
28	p.c12r8	12	8	134,68€
29	p.c12r32	12	32	214,28€
30	p.c12r24	12	24	187,75€
31	p.c12r16	12	16	161,22€
32	p.c12r12	12	12	147,95€
33	C8R64	8	64	284,36€
34	C8R32	8	32	178,23€
35	C8R16	8	16	125,17€
36	C4R8	4	8	62,58€
37	C4R32	4	32	142,18€
38	C4R16	4	16	89,12€
39	C32R64	32	64	500,66€
40	C2R8	2	8	44,56€
41	C2R4	2	4	31,29€
42	C2R16	2	16	71,09€
43	C1R8	1	8	35,55€
44	C1R4	1	4	22,28€
45	C1R2	1	2	15,65€
46	C16R64	16	64	356,46€
47	C16R32	16	32	250,33€

Region: EU-DE-Dresden				
No.	Flavor	vCPU	RAM(GB)	Pay as you go DE-Dresden
1	C1R2	1	2	16,10€
2	C1R4	1	4	22,93€

3	C1R8	1	8	36,58€
4	p.c1r2	1	2	16,10€
5	C8R32	8	32	183,42€
6	p.c1r4	1	4	22,93€
7	p.c2r16	2	16	73,16€
8	p.c2r4	2	4	32,20€
9	C2R4	2	4	32,20€
10	p.c4r8	4	8	64,41€
11	p.c4r32	4	32	146,32€
12	p.c1r8	1	8	36,58€
13	p.c32r64	32	64	515,24€
14	p.c8r64	8	64	292,64€
15	p.c8r16	8	16	128,81€
16	p.c16r128	16	28	243,97€
17	C4R32	4	32	146,32€
18	C16R64	16	64	366,84€
19	p.c4r16	4	16	91,71€
20	C2R8	2	8	45,86€
21	p.c2r8	2	8	45,86€
22	p.c8r32	8	32	183,42€
23	C8R16	8	16	128,81€
24	p.c16r64	16	64	366,84€
25	C8R64	8	64	292,64€
26	p.c16r32	16	32	257,62€
27	C16R32	16	32	257,62€
28	C2R16	2	16	73,16€
29	C16R128	16	28	243,97€
30	C32R64	32	64	515,24€
31	C4R16	4	16	91,71€
32	C4R8	4	8	64,41€

Region: ME-AE-Dubai

No.	Flavor	vCPU	RAM(GB)	Pay as you go AE-Dubai
-----	--------	------	---------	---------------------------

1	C1R2	1	2	17,47 €
2	C1R4	1	4	24,87 €
3	C1R8	1	8	39,69 €
4	C2R4	2	4	34,94 €
5	C2R8	2	8	49,75 €
6	C2R16	2	16	79,37 €
7	C4R8	4	8	69,87 €
8	C4R16	4	16	99,50 €
9	C4R32	4	32	158,75 €
10	C8R16	8	16	139,75 €
11	C8R32	8	32	199,00 €
12	C8R64	8	64	317,49 €
13	C16R32	16	32	279,50 €
14	C16R64	16	64	397,99 €
15	C16R128	16	128	634,98 €
16	C32R64	32	64	558,99 €

Region: AP-AU-Melbourne

No.	Flavor	vCPU	RAM(GB)	Pay as you go AU-Melbourne
1	C1R2	1	2	17,47 €
2	C1R4	1	4	24,87 €
3	C1R8	1	8	39,69 €
4	C2R4	2	4	34,94 €
5	C2R8	2	8	49,75 €
6	C2R16	2	16	79,37 €
7	C4R8	4	8	69,87 €
8	C4R16	4	16	99,50 €
9	C4R32	4	32	158,75 €
10	C8R16	8	16	139,75 €
11	C8R32	8	32	199,00 €
12	C8R64	8	64	317,49 €
13	C16R32	16	32	279,50 €
14	C16R64	16	64	397,99 €

15	C16R128	16	128	634,98 €
16	C32R64	32	64	558,99 €

3.2 Storage

3.2.1 Block Storage (Volume)

Infraspace Cloud managed disks are block-level storage volumes that are managed by Comarch and used with Instances (Virtual Machines). Managed disks are like a physical disk in an on-premises server but, virtualized.

The volumes are triple-replicated on three separate disks to deliver durability rate 99.99995 percent.

Availability of block storage in each region:

Region	Availability
EU-PL-Krakow	✓
EU-DE-Dresden	✓
EU-FR-Lille	✓
ME-AE-Dubai	✓
AP-AU-Melbourne	✓

Input/Output operations per second:

Volume Type	IOPS per GB	Min. value of IOPS
gp-hdd	2	100
gp-ssd	3	250
io-nvme	5	500

For example volume type io-nvme with size 1TB(1024GB) will have $5 \cdot 1024 = 5120$ IOPS

Availability of volume type in each region:

Region	gp-hdd	gp-ssd	io-nvme
EU-PL-Krakow	✓	✓	✓
EU-DE-Dresden	✓	✓	✗

EU-FR-Lille	✓	✓	✓
ME-AE-Dubai	✓	✓	✓
AP-AU-Melbourne	✓	✓	✓

3.2.1.1 Block storage - pricing:

- Pay as you go – payment by the minute with no long-term commitment or upfront payments. Create and delete block storage (volume) at any time and only pay for what you use.
- Reservation (soon) – an advanced purchase of a block storage (Volume) for one or three years in a specified region with monthly payment
 - One year reservation – 10% discount of pay as you go price
 - Three-year reservation – 30% discount of pay as you go price

Pay as you go	gp-hdd	gp-ssd	io-nvme
	GB/month (€)	GB/month (€)	GB/month (€)
EU-PL-Krakow	0,06	0,12	0,12
EU-DE-Dresden	0,07	0,13	0,13
EU-FR-Lille	0,08	0,14	0,14
ME-AE-Dubai	0,09	0,16	0,16
AP-AU-Melbourne	0,09	0,16	0,16

3.2.2 Object storage

Object storage is optimized for storing massive amounts of unstructured data. Unstructured data is data that doesn't adhere to a particular data model or definition, such as text or binary data.

Availability of object storage in each region:

Region	Availability
EU-PL-Krakow	SOON

EU-DE-Dresden	SOON
EU-FR-Lille	SOON
ME-AE-Dubai	✓
AP-AU-Melbourne	✓

3.2.2.1 Object storage - pricing

- Pay as you go – payment by the minute with no long-term commitment or upfront payments. Create and delete objects at any time and only pay for what you use.

Pay as you go	Object Storage
	GB/month (€)
EU-PL-Krakow	0,06
EU-DE-Dresden	0,07
EU-FR-Lille	0,08
ME-AE-Dubai	0,09
AP-AU-Melbourne	0,09

3.3 Network and Security

3.3.1 Virtual Private Network

A virtual private network (also known as VPN) is an encrypted connection over the Internet from a device to a network. It helps ensure that sensitive data is and prevents unauthorized people from eavesdropping on the traffic.

3.3.2 Virtual Router

A virtual router is a software-based system, a router implemented in software in a server rather than a stand-alone, dedicated device.

3.3.3 Security Groups

A security group acts as a virtual firewall rules/policies, which can be used to control inbound and outbound traffic to the Instance. You can combine one or more rules to just one Security group.

Security groups can always be attached or detached from a running and stopped instance.

3.3.4 Public IP (Floating IP)

Unique number that's used by the Internet protocol to identify an instance or network interface that is connected to the Internet. It can be instantly moved from one instance to another.

3.3.5 Anti-DDoS

The Anti-DDoS function (enabled globally for Infraspaces Cloud) helps to protect the addresses of the IP Service. Attacks on the customer's network are restricted as soon as the number of connections that it has defined as the threshold value is exceeded.

3.3.6 Network and Security - pricing

Service	Per month (€)
Virtual Private Network	0,00
Virtual Router	0,00
Security Groups	0,00
Public IP (Floating IP)	9,90
Anti-DDoS	0,00
External Data Transfer	0,00
Internal Data Transfer	0,00

Included to the project without additional charges: 10 Mbit/s External bandwidth

3.4 Platform as a Service

3.4.1 Load Balancer as a Service

The Load Balancer as a Service distributes the network load to several Cloud Servers. Multiple servers can be published using a single DNS name and IP.

Region	Availability
EU-PL-Krakow	✓
EU-DE-Dresden	✓
EU-FR-Lille	✓
ME-AE-Dubai	✓
AP-AU-Melbourne	✓

3.4.1.1 Load Balancer as a Service - pricing

Pay as you go	Load Balancer as a Service
	Per month (€)
EU-PL-Krakow	0
EU-DE-Dresden	0
EU-FR-Lille	0
ME-AE-Dubai	0
AP-AU-Melbourne	0

3.4.2 Kubernetes as a Service – coming soon

An open source container orchestration platform that automates many of the manual processes involved in deploying, managing and scaling containerized applications.

Functional scope:

- Container Orchestration Engine: Kubernetes v1.18.x
- Access method: REST API, CLI, Openstack Dashboard
- Integrated with Openstack:
 - Volumes comes from Cinder
 - Network based on neutron
 - Loadbalancers integrated with Octavia
- Available actions:
 - Create/delete/manage clusters in project
 - User needs to specify cluster name and cluster size (number and flavor of workernodes)

- Resize cluster

3.4.3 Database as a Service (PostgreSQL) – coming soon

Functional scope:

- Database Engine: PostgreSQL 9.6
- Access method: REST API, CLI, Openstack Dashboard
- Available actions:
 - Create/delete/list database instance
 - Create/delete/list users/roles/schemas in database
 - Manage users privileges in database
 - Create full/incremental backup to Object Storage
 - Create/manage/delete database replica

3.4.4 Monitoring as a Service - coming soon

Functional scope:

- Access method: REST API, CLI, Openstack Dashboard
- Presentation layer: Grafana
- Multi-tenant and authenticated. Metrics are submitted and authenticated using Keystone and stored associated with a tenant ID
- Rest API for storing and querying metrics and historical information
- Real-time thresholding and alarming on metrics
- Compound alarms described using a simple expressive grammar composed of alarm sub-expressions and logical operators
- Monitoring agent that supports a number of built-in system and service checks and also supports Nagios checks and stats, and support for scraping endpoints as Prometheus does.

3.5 Rights of use, licenses

3.5.1 General provisions

The customer can use the licenses provided by Comarch within the scope of public images on Cloud Servers. The licenses are billed on a monthly basis for each server based on usage. By using the licenses provided by Comarch within the framework of the public images, the customer accepts the license terms of the respective manufacturer valid at the time of the agreement. This results in an agreement between the customer and the respective software manufacturer.

As an alternative to Comarch's licenses, customers can also use their own licenses in their own images or with Comarch's public images.

Individual licensing provisions

- Community Linux derivatives based on:
 - CentOS
 - <https://www.centos.org/legal/>
 - <https://www.centos.org/legal/trademarks/>
 - Debian
 - <https://www.debian.org/legal/licenses/>
 - <https://www.debian.org/trademark>
 - Fedora
 - <https://fedoraproject.org/wiki/Legal:Licenses/LicenseAgreement>
 - https://fedoraproject.org/wiki/Legal:Trademark_guidelines?rd=Legal/TrademarkGuidelines
 - openSUSE
 - <https://en.opensuse.org/openSUSE:License>
 - https://en.opensuse.org/openSUSE:Trademark_guidelines

3.6 Optional services

In the case of a separate order, the following optional services are provided for an additional charge. Upon request, Comarch will submit a proposal to the customer and provide more detailed descriptions of the following services.

3.7 Support plan

An in-depth explanation of support plan can be found at:

<https://www.comarch.com/trade-and-services/ict/documentation/>

Comarch is offering three levels of support for Cloud environment, and these are:

- **PREMIUM support**

Premium support is dedicated for substantial business critical environments that are strategically dependent on Comarch CIC Platform.

- **ADVANCED support**

Advanced support is offered to environments with a limited number of business-critical applications.

- **BASIC support**

Basic support is included in Comarch Infraspac Cloud services and recommended for non-production environments or workloads where traditional severities and response times are not necessary.

4 Comarch Managed Services

Comarch, as a company with a long experience in IT integration, offers an extensive portfolio of additional services for clients who require especially high competencies in IT management. Our qualified engineers provide a high level of advanced administration services (managed services) for cloud systems on the Comarch Infraspaces Cloud platform. The scope of services includes maintenance of operating systems, environment monitoring, security, and software on the PaaS platform.

Comarch services add value especially in the process of migrating the environment from existing infrastructure to Comarch and in the maintenance of critical business applications.

Managed Cloud services include:

4.1 Scope of services

Name of service	Description	Monthly Pricing (PCS/ instance)	
		BASIC	ADVANCED
Migration services (SEV-MGR)	Basic: <ul style="list-style-type: none">• Pre-audit and resource inventory (due diligence)• Planning of projects and migration of target components• Acceptance tests Advanced: <ul style="list-style-type: none">• All tasks from Basic are covered in Advanced• Post-migration extended support	Individual quote (depends on the project size, environment)	Individual quote (depends on the project size, environment)

Operating System Management (MNGD-OS)	<p>Basic:</p> <ul style="list-style-type: none"> • System processes management • Performance monitoring and management • Resources management • Basic Network Settings (TCP Configuration, Host Servers, Services Configuration) • System updates • System tasks scheduling <p>Advanced:</p> <ul style="list-style-type: none"> • All tasks from Basic are covered in Advanced • Advanced System Performance, capacity and availability monitoring and management • Administration of security policies • Accounts and privileges management • Troubleshooting 	<p>139,00 €</p>	<p>Individual quote (depends on the project size, environment)</p>
Data Base Management (MNGD-DB)	<p>Basic:</p> <ul style="list-style-type: none"> • Database processes management • Performance, capacity and availability monitoring and management • Database tuning • Resources management • Backup and recovery management • Network settings configuration • Administration of security policies • Accounts and privileges management <p>Advanced:</p> <ul style="list-style-type: none"> • All tasks from Basic are covered in Advanced • Database software updates • Troubleshooting • Database cluster administration • Database clusters implementation and management • High Availability management 	<p>189,00 €</p>	<p>Individual quote (depends on the project size, environment)</p>

Backup Management (MNGD-BS)	<ul style="list-style-type: none"> As part of a due diligence phase at the beginning of the project, the backup strategy is selected within the selected backup option in consultation with the customer All customer-specific data is protected by regular backups on tape via the Comarch Backup Backup policies management Backup restore tests Data restore in case of failure or on-demand Backup monitoring 	Individual quote (depends on the project size, environment)	
Disaster Recovery Management (MNGD-DR)	Advanced: <ul style="list-style-type: none"> Geo-redundant DR facilities Data replication management DR environment implementation and administration DR switch-over test 	-	49,00 €
Security Management (MNGD-SEC)	Advanced: <ul style="list-style-type: none"> VPN configuration and administration Intrusion prevention protection DDoS protection Security Monitoring Basic vulnerability scans at IaaS level Security incident management Web application firewall administration (per client) Penetration test (per client) 	-	Individual quote (depends on the project size, environment)
Service Governance (SEV-GOV)	Basic: <ul style="list-style-type: none"> Service management SLA / KPI measurement Service reporting Incident management Problem management Change management Advanced: <ul style="list-style-type: none"> All tasks from basic are covered in Advanced Third parties management 	-	Individual quote (depends on the project size, environment)

5 Terms and conditions

Terms of service is described in the documentation located at the link:

<https://www.comarch.com/trade-and-services/ict/documentation/>

6 List of abbreviations/glossary

Term	Description
ACL	Access Control List
API	Application Programming Interface
CET/CEST	Central European Time/Central European Summer Time
DR	Disaster recovery (protection against the failure of a whole data center, e.g., in the event of a disaster)
DBaaS	Database as a Service
DDoS	Distributed Denial of Service
DHCP	Dynamic Host Configuration Protocol
DNS	Domain Name Service
DNS record	Record of a Domain Name Service zone
DNS zone	Part of the domain hierarchy which is managed by a name server
Flavor	Synonym for an Instance type
GB	Gigabyte
Gbit/s	Gigabits per second
GUI	Graphical User Interface
HA	High Availability
HTTP	Hypertext Transfer Protocol
HTTPS	Hypertext Transfer Protocol Secure
Hypervisor	Virtualization layer between hardware and operating system
I/O	Input/Output
IaaS	Infrastructure as a Service
Inbound	Incoming connection
IOPS	Input/Output operations per second
IP	Internet Protocol
IPsec	Internet Protocol Security
MB	Megabyte
Mbit/s	Megabits per second
MPLS	Multiprotocol Label Switching
ms	Milliseconds
NAS	Network Attached Storage
NAT	Network Address Translation
Outbound	Outgoing connection
PaaS	Platform as a Service
PB	Petabyte
RHEL	Red Hat Enterprise Linux

SaaS	Software as a Service
SAS	Serial Attached SCSI