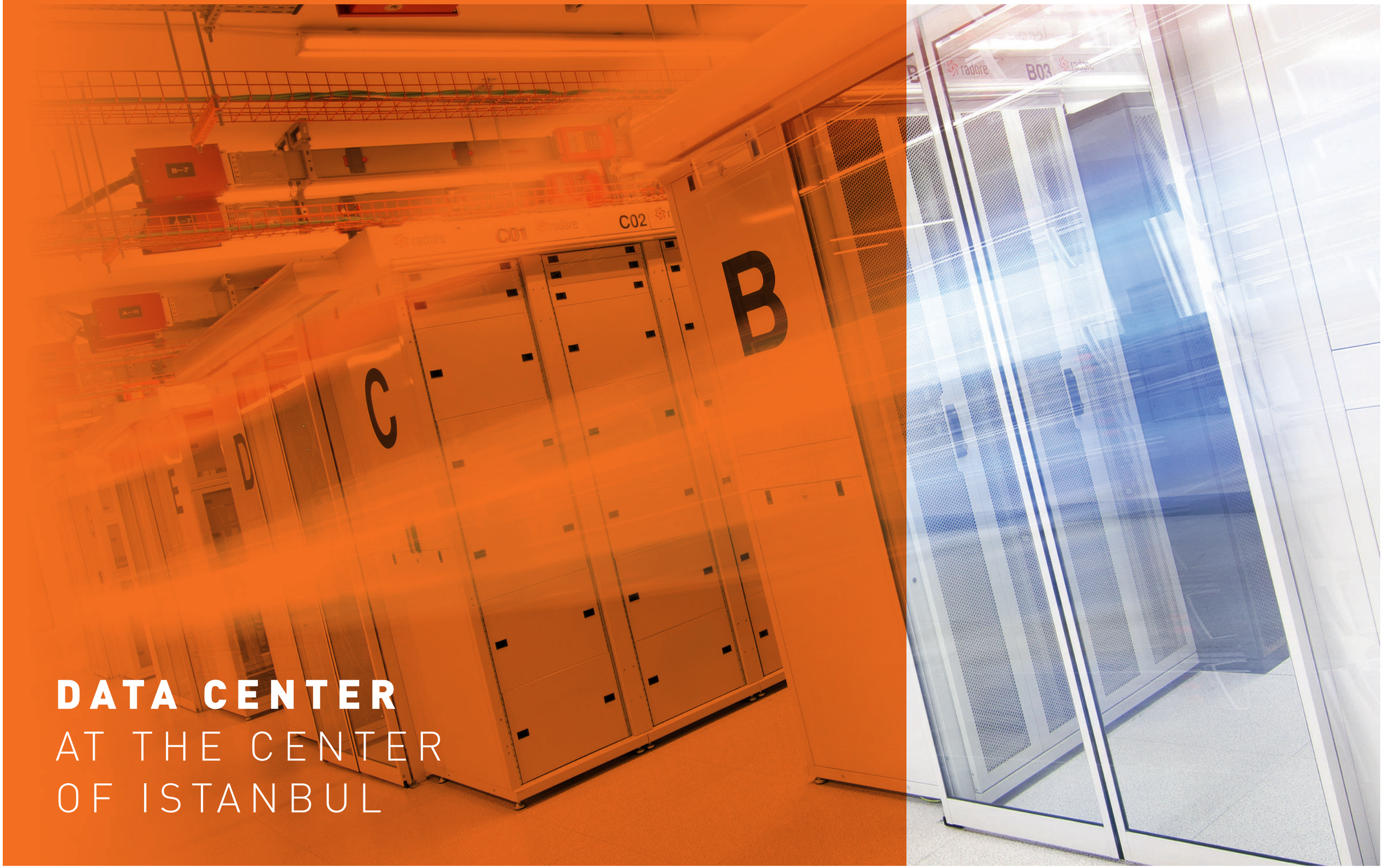


DATA CENTER
AT THE CENTER OF ISTANBUL

radore
Uptime Experts

01
ABOUT US

HISTORY

Radore Data Center Services Inc. (Radore), which was founded by Zeki Kubilay Akyol in 2004, made its first data center investment in 2005. In the same year Radore was authorized by the Telecommunications Authority as an “Internet Service Provider”.

In 2009, Radore completed its investment in a 450 m2 second generation data center located at MetroCity in Istanbul’s Levent district and subsequently began providing co-location, dedicated hosting and cloud services for its customers.

Using the motto “Uptime Experts”, Radore accepted reliable and continuous service as its standard values and has been titled as “The Fastest Growing Data Center of Turkey” four years in a row according to the 2012-2013-2014-2015 results of Deloitte Technology Fast50. With this title, Radore began investing in an office and third generation data center once again at MetroCity in 2014, completed this data center in 2015 and expanded this into a total area of 2,760 m2 including white spaces and office spaces in 2016.

Radore reinforced its position as the leading data center by partnering with Doğuş SK Girişim Sermayesi Yatırım Ortaklığı A.Ş. (DGSK) and Iş Girişim Sermayesi Yatırım Ortaklığı A.Ş. (Iş Girişim) in 2014, and with Selçuk Saraç in 2015.

GENERAL INFORMATION

Radore, headquartered in MetroCity, is a data center at the heart of Istanbul. With its total 2,760 m2 third generation data center area including 1,040 m2 white space, Radore offers the following data center services to its more than three thousand customers:

- Colocation
- Dedicated server and hardware rental
- Cloud services
- Managed services
- Content distribution network (CDN)
- Shared web hosting, domain name, SSL and license rental

Radore distinguishes itself by its backup and high-capacity Internet access, high-level physical security, state-of-the-art fully backed-up cooling and energy infrastructure. Radore's experienced technical staff is on duty twenty-four hours a day, seven days a week, including bank holidays. Thousands of significantly important applications owned by public and private sector companies as well as individuals are stored in the Radore Data Center. With long years of sectoral experience and a fully backed-up infrastructure, Radore can guarantee its customers 99.99% uptime* in SLA conditions.

(*) Uptime (availability) is the minimum guaranteed runtime or, in other words, online period of a server. The percentage of the time a server stays running or online without any interruption is called the uptime rate.

QUALITY POLICY

Always aiming to be among the leading data center companies, Radore is a fast-growing, pioneer technology company that prioritizes its customers satisfaction under any circumstance.

Radore Data Center Services Inc. accepts and promises;

- To meet customer needs and demands in the right way and on time by prioritizing ethical values,
- To elevate the efficiency of all processes to an internationally competitive level with an approach of constant improvement,
- To conduct trainings for the development of its employees,
- To perform internal audits in order to check the effectiveness of the Quality Management System, as well as its conformity with standards and legal regulations,
- To be a constantly learning organization by accepting contributions from its suppliers, business partners, customers and employees,
- To act in common actions with all parties in order to ensure sustainable growth and long-term success and in order to achieve all above conditions, together with its employees, to abide by the rules of the Quality Management System and to constantly improve the efficiency of the system.

INFORMATION SECURITY POLICY

In order to manage all kinds of risks towards work flow continuity and information assets, Radore Data Center Services Inc. accepts and promises;

- To certify and constantly improve the Information Security Management System to ensure it meets all needs,
- To manage risks against information assets,
- To conduct constant trainings for the development of its employees in order to increase information security,
- To abide by all legal regulations and contracts in the scope of information security,
- To check the compliance of its Information Security Management System with standards and legal legislations by applying internal audits and to abide by the rules of the Information Security Management System and to constantly improve the efficiency of the system together with its employees in order to achieve all above conditions.

CERTIFICATES AND AWARDS

All certificates and awards received by Radore since its establishment are listed below in chronological order:

- 2005 – Internet Service Provider G-ISS-125
- 2006 – Microsoft SPLA Partner
- 2008 – Microsoft Gold Certified Partner
- 2011 – Brocade Premier Partner
- 2012 – Dell Registered Partner
- 2012, 2013, 2014, 2015 – Deloitte Technology Fast50 Winner
- 2014 – Fastest Growing Companies of Turkey – “Turkey 100” Award (AllWorld Network, Tepav, TOBB)
- 2015 – ISO 9001 (Quality Management System), ISO 27001 (Information Security Management System), PCI-DSS (PCI Data Safety Standard) Certificates
- 2015 – VMware vCloud Air Network (vCAN)
- 2016 – “Best Data Center” Award (Technology Awards – TMT News 2016)

BEING PART OF RADORE

Radore gets its power from the Radore employees who work side-by-side, trust each other enough to turn backs on each other and communicate even with a glimpse of an eye. The unique Radore experience that Radore provides for its customers comes to life through the efforts of all Radore employees. Each Radore employee treats the consigned data, which is priceless, with utmost attention, does whatever it takes to provide a perfect experience for the customer.

A Radore employee:

- Protects what makes Radore unique.
- Focuses only on the solution in case of a problem.
- Has no sense of giving up.
- Has only one face.

Radore employees are considered as Radore's most valuable asset. This investment is strengthened by means of ongoing education, development and motivation programs.

The aim is to enhance the occupational knowledge and skills of Radore employees, thus raising qualified professionals for the future.

SPONSORSHIPS

Once a start-up itself, Radore reached its current status by passing through all various phases. Today Radore aims to pave the way for great ideas that will shape the future, by sponsoring projects and supporting their way to success.

Sponsorship projects are evaluated by the Radore Sponsorship Committee according to topics such as analysis values, design and project scope as well as Radore's corporate social responsibility criteria. The primary condition is that the project should be future promising in fields like science, technology, Internet, culture, sports or arts.

Below are some of Radore's ongoing sponsorships:

- www.altinoktavakif.org.tr
- www.birsilgibirkalem.org
- www.ciz.io
- www.itugae.com
- www.r10.net
- www.tegv.org
- www.tohumotizm.org.tr
- www.zaytung.com
- www.zumbara.com

BUSINESS PARTNERS

Radore works with professional business partners in order to produce more suitable and faster solutions for its customers. Radore's business partners are as follows.

Servers and Processors: Dell, Intel

Operating Systems and Software Licenses: Arcserve, CloudLinux, Cpanel/WHM, DirectAdmin, Linux, Litespeed, MaestroPanel, Microsoft (Services Provider License Agreement Business Partnership), Odin/ Plesk, OnApp, R1 Soft, vRanger, VMware (vCloud Air Network Business Partnership), Wordpress

Network: Barracuda, Brocade, Citrix-Netscaler, Dell, Fortinet, RioRey, Voxility

Data Center Infrastructure:

Transformer	ABB Elektrik
Distribution Boards and UPS	ABB, Newave ABB
Generators	Caterpillar
Busbar	EAE Elektrik
Fire Detection and Extinguishing Systems	Honeywell
Security Systems	Meyer
Imaging Systems	Samsung
Fire Extinguishing Systems	Siemens and 3M
Cooling	RC Groups + Climaveneta

02

SERVICES

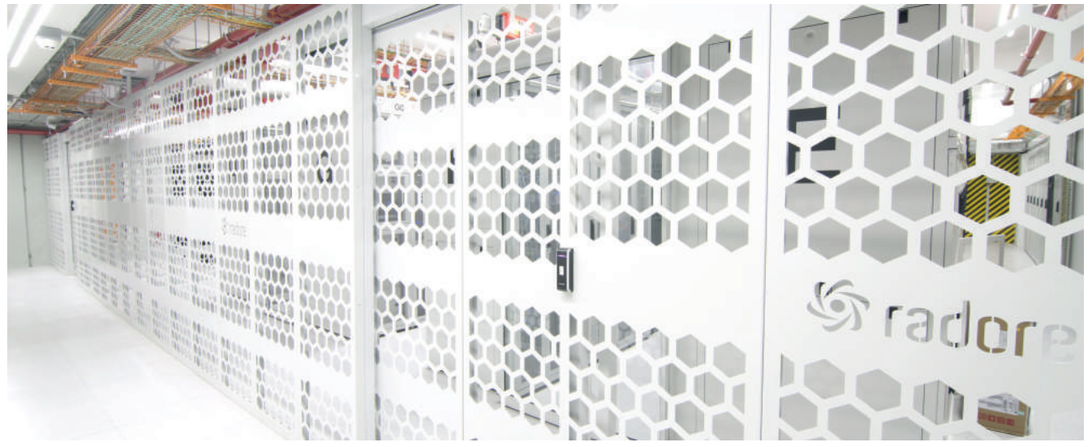
1.CO-LOCATION

With continuously monitored physical conditions, power, cooling, network infrastructure and physical security criteria, Radore Data Center provides a professional platform for businesses that want to keep their IT systems secure.

The data center spaces are especially configured to host rack type servers and network hardware. Spaces or racks that will be rented may be selected based on the required qualities and TIER II or TIER III standards.

WHAT ARE TIER II AND TIER III STANDARDS?

Data centers have specific standards. And one of the institutes that assesses and certifies these standards is Uptime Institute. Uptime Institute assesses the data centers based on their design, application and operation standards with its four TIER certificate degrees. Radore is the only data center that can offer service both in TIER II and TIER III standards with its infrastructure in line with TIER standards, one of the most important certificates of the world for data centers.



1.1. TIER III DATA CENTER

At TIER III data center, customers may rent private data center spaces, private cages, shared or private racks. At TIER II data center, service is provided with an uptime rate of 99.982%. This rate is 99.99% at Radore. Moreover, the system is not affected from any disabled component in circumstances such as maintenance etc. since the components are also backed-up besides the multiple, private distribution channels. TIER III data center is suitable for large scale organizations with support services providing service 24/7, having automation processes and being capable of tolerating short term interruptions.

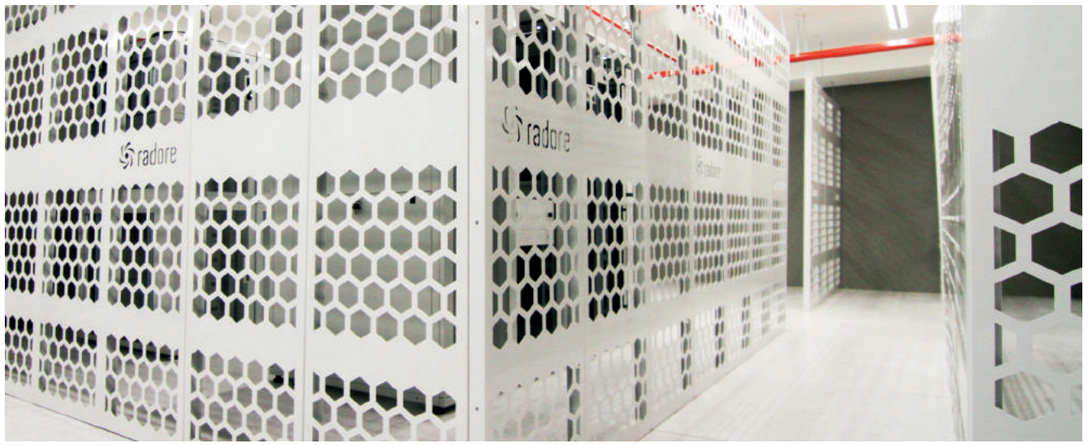
1.1.1. Private Data Center Space

Within the Radore Data Center, there is one 110 m2 private data center room. This room, which has been designed for customers who may need a private data center space, has a capacity of 50 racks. Office space for operational business management is provided free of charge to customers who rent this private data center room. Office space for operational business management is provided free of charge.

1.1.2. Private Racks

At TIER III data center, there are private rack options such as 21U and 11U besides 45U rack rental option.

- All racks are keycode-protected and locked.
- Private and unlimited Internet access options is defined for all customers using racks; if multiple racks are being utilized, direct access between racks can be provided.



1.1.3. Shared Racks

Customers with 5U or less unit needs can rent shared racks, which have the same security specifications as private racks. Connection via local port is provided as part of this service.

1.1.4. Private Cages

Only individuals authorized by Radore customers can access these racks distinguished by a modular cage system. Entrance to the cages and access to the racks are protected with security hardware such as card reader or biometric recognition system, password and lock. Customers, who come through Radore's main entrance, can access their private cages and conduct their work without the assistance of security support by passing through the security points and reaching their private space.

This service is provided for customers, who need at least four racks to be configured together. Along with the dedicated private cage space, the cooling infrastructure is also configured in relation to the number of racks utilized. Power costs can be calculated according to monthly usage.

Radore's rack space customers can work in offices designed exclusively for them within the Radore office complex. Private offices are open to use 24/7 for long term operations such as monthly and yearly and shared customer offices are open to use 24/7 for short term operations.

1.2. TIER II DATA CENTER

At TIER II data center, customers may rent private data center spaces, shared or private racks, private cage and ATX server as private rack.

At TIER II data center, the uptime rate is 99.749%, and the distribution channel is singular and the components are backed-up. The system is partially unaffected when the components are disabled in case of maintenance etc.

TIER II data center is suitable for small and medium scale organizations, which use IT systems actively only during working hours and do not have online service obligation.

1.2.1. Private Data Center Space

Even though there are private data center rooms available within Radore Data Center hall, new private data center spaces can be built upon request. The customers, who may need a private data center space, may rent as much as rack as they want based on their requirement. Office space for operational business management is provided free of charge for customers who rent this private data center room.

1.2.2. Private Racks

At TIER II data center, there are private rack options such as 21U and 10U besides 40U rack rental option.

- All racks are keycode-protected and locked.
- All racks at TIER II data center is backed-up with second power line. For the racks found in both data centers, backed-up uplink connection can be provided via the second uplink upon request.
- Private and unlimited Internet access options is defined for all customers using racks; if multiple racks are being utilized, direct access between racks can be provided.

1.2.3. Shared Racks

Customers with 5U or less unit needs can rent shared racks, which have the same security specifications as private racks. Connection via local port is provided as part of this service.

1.2.4. ATX Hosting

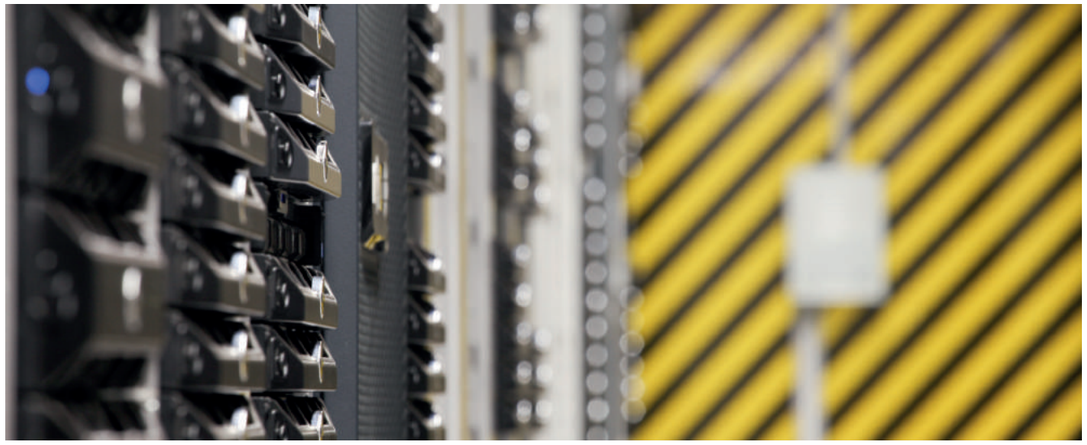
1.2.4.1. Cage Rental

There are four types of racks produced especially to suit customer needs: There are smaller-capacity spaces for ATX-type servers besides cage spaces. Cage capacities are 60, 120, 150 and 180 ATX.

- All cages are card reader-protected and locked.
- For all cages, Internet access backup via the second uplink can be provided upon request.

1.2.4.2. Shared Cages

Customers who need to host 60 or less ATX servers can rent shared cages, which have the same security specifications as the private cage spaces. Connection via local port is provided as part of this service.



2. DEDICATED SERVER and HARDWARE RENTAL

Radore offers server and hardware rental services to its customers besides co-location services.

As a registered partner of DELL, Radore provides customers, who want to host their projects on a private, unshared server, with the latest technology physical servers, which can be configured, have unshared and unlimited Internet access (100 Mbit/s) and are under warranty against hardware problems. Provided that the hardware is rented from Radore, the customer can benefit from advantages such as hardware guarantee and fast service. Within four hours after the renting procedures, the servers are set up with iDRAC access and delivered to the customer. All servers are under warranty against all sorts of hardware problems and guaranteed hardware replacement is provided within four hours during working hours and within six hours out of working hours. All physical server racks are fed by redundant power sources and all servers that support redundant power sources possess the infrastructure for power backup.

Moreover, customers may rent hardware from Radore for additional needs of the existing project infrastructure or a new infrastructure to be developed. As part of this service, Radore's experienced system and network managers work together with the customer to create the cost- and performance-wise most efficient planning of the project.

3.CLOUD SERVICES

Radore cloud services enable customers to create their own cloud servers or virtual data centers by providing flexible use of the defined resources such as CPU, RAM and disk. Virtualization and network services for the platform are provided by Radore. Forming the platform on R-Enterprise Cloud, R-Cloud and R-OnAPP Cloud does not necessitate any investment in technical infrastructure or employment of manpower. Thanks to the "High availability" provided by the cluster structure, system sustainability has been maximized. The ports of the switches used in network infrastructure have 10 Gbit/s capacities.

Dell Compellent SC9000 series (fibre channel) is used in the storage infrastructure, Dell PowerEdge M600 series is used in the server infrastructure, Brocade and Dell switches are used in the network infrastructure, and VMware infrastructure is used for the virtualization platform of R-Cloud and R-Enterprise Cloud.

Dell Compellent SC8000 series (fibre channel) is used in the storage infrastructure, Dell PowerEdge M600 series is used in the server infrastructure, Brocade and Dell switches are used in the network infrastructure, and OnApp infrastructure is used for the virtualization platform of R-OnApp Cloud.

3.1. R-ENTERPRISE CLOUD

With the resource pool creation capability of VMware vSphere - most widely used virtualization program in the industry - a customer-specific resource pool is created using CPU, RAM, disk and vSwitch components assigned to the customer on R-Enterprise Cloud. Thus, the customers own their own virtual data center. Moreover, two exclusive vSwitch that have no connections with the servers of other customers are provided. One of these is used for uplink (Internet) and the other is for local connections. Customers manage their cloud platforms as they want by opening as much as virtual server allowed by their resources within the exclusively created resource pools with R-Enterprise Cloud.

3.2. R-CLOUD

Web sites with up to 20,000 visitors per day can be hosted on R-Cloud platform, and requirements for terminal server, accounting software, e-mail server, file storage server and DNS server can be fulfilled on R-Cloud.

R-Cloud's features;

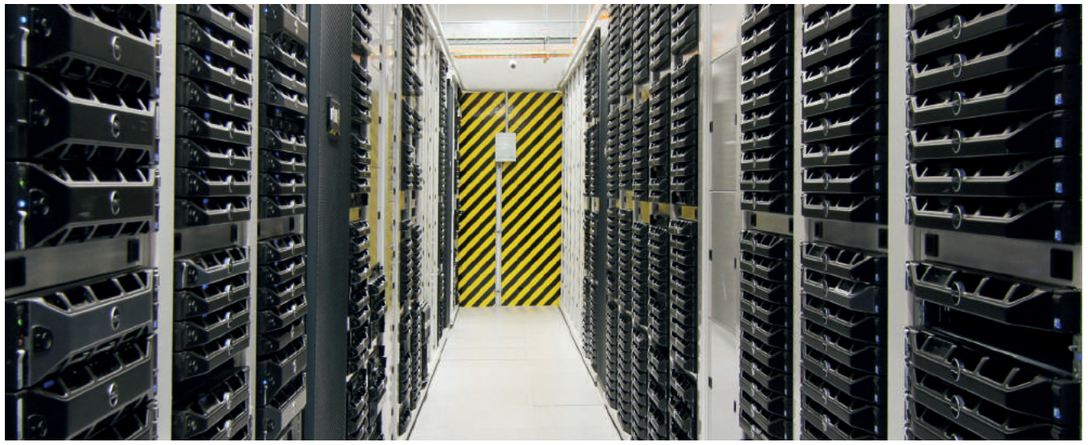
- Cluster structure preventing loss of data
- High availability
- Internet access backup
- Flexible use of resources
- Local network advantage
- Secure backup

3.3. R-ONAPP CLOUD

R-OnApp Cloud may host the small or medium scale websites, and meet the requirements for terminal server, accounting software, e-mail server, file storage server, DNS server, VPN server and finally small or medium scale application servers such as project management, failure tracking and CRM.

R-OnApp Cloud's features;

- High availability
- Load balancing
- Automatic scaling (Linux)
- Wide operating system draft library
- Manageable firewall



4.4.LOCATION BASED CONTENT DELIVERY NETWORK: CDN (CONTENT DELIVERY NETWORK)

In short, CDN is the service of streaming web-based contents through servers located at multiple locations. To be more specific, it is a platform composed of geographically distributed server, software and network components that enable end-users' fast and backed-up access to digital assets such as photos, videos, music, setup files, CSS and JavaScript.

Radore provides four types of CDN services: Pull CDN and Push CDN, Video On Demand (VOD) and Live Streaming. Via advanced management panel, Radore CDN customers can view in detail the analysis results of their CDN accounts (daily and monthly data transfer, received requests and total requests), and manage their cache memory.

4.1. Pull CDN

Pull CDN connects to the FTP server of the customer, pulls the static contents and enables streaming of the content from the location closest to their visitors. In other words, it is used to cache the images, JavaScript, CSS and HTML files in websites. Pull CDN is recommended for frequently changing files smaller than 3MB.

4.2. Push CDN

Push CDN requires static content to be uploaded to the FTP by the customer itself. It is recommended for files larger than 50MB such as setup files and game patches. Due to its structure, the files that will be loaded here should be larger than 3MB. Otherwise, they cannot be delivered from CDN. If it is a frequently changing and small file, then Pull CDN should be preferred instead of Push CDN.

4.3. Live Streaming

It is a very important tool for content providers to reach their users through live streaming and to interact with them. OnApp offers CDN live streaming features with Wowza Media Server.

4.4. Video on Demand

It is used for fast forward/rewind capable video streaming just like in YouTube. Video on Demand brings video content when user requests so. It is important to note that all, but only the requested section of video is delivered.

5.SHARED WEB HOSTING, DOMAIN NAME & SSL

Dell Compellent SC4000 series (fibre channel) is used in the storage infrastructure, Dell PowerEdge R700 series is used in the server infrastructure, Brocade and Dell switches are used in the network infrastructure, and VMware is used for the virtualization platform of the shared web hosting services provided by Radore.

In this infrastructure, database, email and web servers are separated and system sustainability has been maximized by means of the "high availability" feature provided by the cluster structure. Thanks to the flexible private virtualization infrastructure, limit problems are avoided even in cases of high capacity needs. The uplink capacity of the servers used for shared web hosting services is 10 Gbit/s.

In addition to specific product packages optimized according to customer needs, the below services are provided free of charge as part of the shared web hosting services:

- E-mail management
- FTP password change
- DNS management
- Sub-domain management
- Database management
- File management
- Traffic reports

With Hosted Exchange, Radore customers can carry out their processes easily on their e-mail accounts linked to their domain names. Hosted Exchange of Radore enables its customers to process more in less time thanks to its MaestroPanel, the next-generation web hosting control panel software.

The customers have the chance to use Hosted Exchange with multiple domains, direct different domains to the same Exchange server and benefit from all services of Exchange. And the customers have individual panels that they can manage their e-mails themselves as another advantage of MaestroPanel. With this panel, multiple operations can be performed in a very short amount time such as opening an e-mail account, increasing the limit, creating and managing conference rooms.

Moreover, system availability is optimized without interruptions thanks to the "high-availability" ensured by DAG cluster structure.

Domain registration and management is one of the core services that Radore offers since its day of establishment. Radore uses RRP Proxy for its domain registration and management services. For over 4,000 domains registered under its roof, Radore provides the below services free of charge:

- Domain transfer (obtaining authorization code and locking/unlocking the transfer lock)
- Advanced DNS management
- Name server identification and management
- Whois assignment and management
- Domain transfer between accounts
- Whois information hiding

Radore prefers SSL Store's RapidSSL branded products for SSL certificates used to secure data transfer in websites. Application and follow-up processes within the SSL Service are carried out by Radore customer managers.

6. MANAGED SERVICES

In addition to standard services, Radore provides the below mentioned managed services in accordance with customer needs. Managed services are elaborated during project and proposal phases. Customers can benefit from these services by either purchasing monthly packages or hourly services.

6.1. MANAGED SERVICE

6.1.1. Planning and Installation

The Infrastructure analysis for projects to be hosted at Radore Data Center is conducted by system administrators under the light of prior knowledge that customers share. Following the proposal and confirmation process, system administrators complete the installation of the project infrastructure, perform the necessary tests and put the project into operation. After the activation of the project, its performance is being observed by monitoring services.

6.1.2. Monitoring

6.1.2.1. Performance Tracking

The server performance is being monitored by observing the performance of installed services, ping and http services on the server, with use of Zabbix. System administrators step in when an intervention is necessary. Monitoring services are also provided for different services according to the specification of the project.

6.1.2.2. Traffic

With the agent software on the server, the system resources and services identified by Radore are monitored. The port on the switch that the server is connected to is monitored via Cacti software. Port monitoring with Cacti can be followed by customers over id.radore.com.

6.1.2.3. Server Source

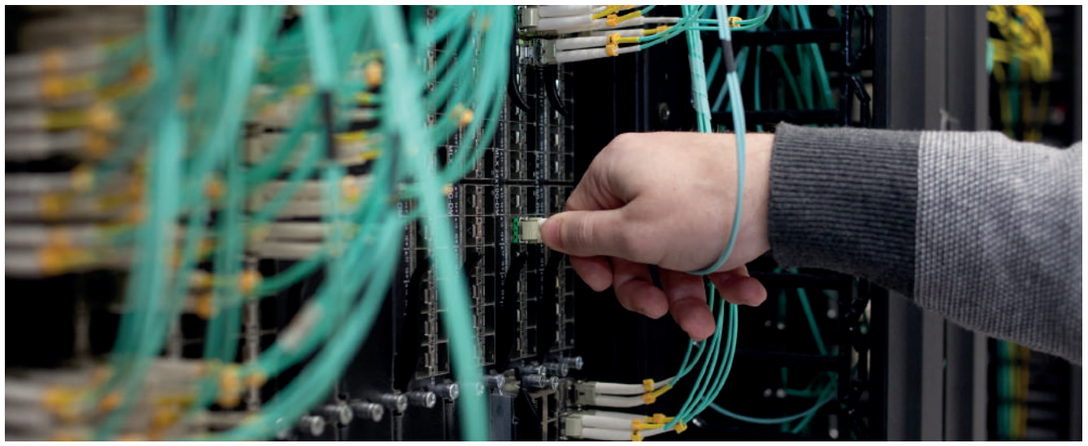
Server component sources such as processor, RAM and disk are being monitored via Zabbix through the agent software installed on the server. The server performance of customers, who receive managed services, is followed with this service, and required actions are taken in advance.

6.1.3. Server Management

The server's operating system, updates of services and components and other applications are being analyzed by system administrators. Optimizations and improvements for server performance are provided with periodical examinations.

6.2. NETWORK SERVICES

With Radore Network Services, the performance issues are removed besides ensuring the safety of the servers. The cloud or physical servers are secured practically and rapidly, and the undesired traffic is prevented thanks to the security applications included to the services. The network may be optimized by preferring performance applications, and thus the user experience may be enhanced.



6.2.1. Security Applications

The network security applications that do not require investment in infrastructure may protect the customer network against various attacks. Since the hardware products run with full backup (HA - High Availability), the other system is activated rapidly without any break in case of a crisis. The undesired traffic may be prevented with security applications, the infrastructure resources may be managed, and time and money may be saved.

6.2.1.1. Firewall

The issues that may be faced due to online networks and unauthorized access to the servers may lead to significant financial losses, decrease in brand value and hard-to-recover losses in customer satisfaction levels. With the firewall service providing protection against more than 2000 attacks, the quality of the services may be maintained by regulating the network traffic as source/target IP protocol- (UDP, TCP) and port-based.

6.2.1.2. IPS (Intrusion Prevention System)

IPS service identifies the malicious traffic accessing the servers and provides protection against more than 2000 attacks. If the services are protected with IP, Port or Protocol based fixed rules, the security standards may be carried to a higher level using IPS service in the next step.

6.2.1.3. VPN

With VPN service, remote access to server network is enabled, and thus the customers experience the comfort of working on their own network wherever they are and identify the users that may access the servers. VPN service is offered in three ways: SSL VPN, site-to-site VPN, SSL site-to-site VPN.

6.2.1.4. VDOM

With the VDOM service of Radore, unlimited number of IPsec/SSL VPN users can be defined site-to-site VPN needs can be fulfilled. By accessing the VDOM firewall service using the user information assigned to them, the customers may carry out all their security operations themselves. Thus, the customer may use their very private virtual firewall service without infrastructure investment or maintenance cost.

6.2.1.5. WAF (Web Application Firewall)

WAF protects from the increasingly repeating application attacks and prevents the loss of critical customer data. While ensuring the security of web applications, it doesn't have any impact on performance or response times. WAF service ensures security without affecting the performance in all web projects, where data security is important.

6.2.1.6. DDoS

The protection service that Radore offers against DDoS (Distributed Denial of Service) attacks is designed by considering customers with visitors residing in Turkey. Two services that work independently are commissioned to complete each other based on the source location of traffic at the moment of attack (inside or outside Turkey).

6.2.2. Performance Applications

In addition to its central position enabling direct access to fiber and Ethernet network infrastructure, Radore removes speed, performance and optimization issues in web projects with its performance products designed based on customer needs.

6.2.2.1. Load Balancing

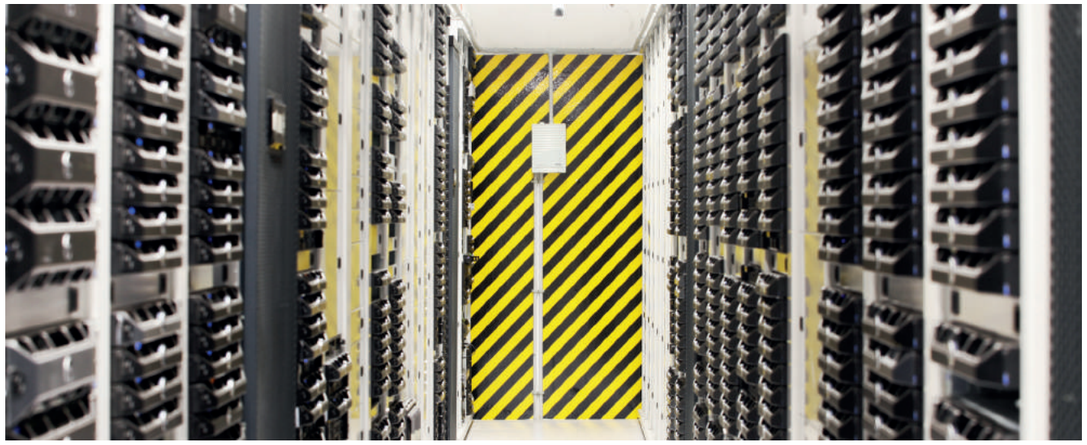
Load Balancing service balances the load between both the application and database servers. With this service, the incoming traffic may be distributed between application servers and the traffic from the internal network to database servers may be regulated. Thus, the customer achieves a rapid and backed-up structure.

6.2.2.2. SSL Offloading

Since SSL encryption-decryption processes are provided within the framework of Radore performance applications, the customer may use infrastructure resources to improve its services. Thanks to SSL Offloading, which is integrated with Load Balancing, the performance of servers will increase together with the backed-up structure.

6.2.2.3. HTTP Caching

With HTTP Caching service, the losses resulting from traffic load are removed by offering access to the visitors of customer page from the cache. Thus, the waste of server resources is prevented.



6.2.2.4. VNSL (Virtual Application Accelerator)

With VNSL service that is designed as fully backed-up and through ready-to-serve hardware, all steps required for performance optimization are taken instantly and personally by the customers with their private passwords.

6.3. BACKUP (BACKUP SPACE & BACKUP SERVICE)

Backup service is provided in two different ways, namely Backup Space and Backup Service. Backup Space service means only providing the space that the data will be located. As part of this service, NAS and ISCSI spaces are provided. Data must be backed up into this area by the customer.

With the Backup Service, on the other hand, data is backed up by Radore as “image backup” or “file based backup” in pre-defined periods. If this service is utilized, the Backup Space Service is no longer needed. Backup periods are defined based on the term of the received service. The backup process is performed by selecting the closest period for backup when the customer requests backup. The Backup Service is provided with R1 Soft and vRanger software.

6.4. DISASTER RECOVERY

Disaster Recovery aims to ensure business continuity. In case of natural disasters such as earthquakes or floods close to where the IT infrastructure for an application exists; the infrastructure is relocated immediately to ensure continuity. As part of the Disaster Recovery service, Radore manages positioning and monitoring of an identical or optimized version of its IT infrastructure by installing it in data centers in different cities.

6.5. LICENSE RENTALS

Operating systems, control panels and database licensing of our business partners like Microsoft, Odin, cPanel, DirectAdmin, MaestroPanel, CloudLinux, LiteSpeed and many more is provided as part of co-location and dedicated server services.

03
DATA CENTER

1. INFRASTRUCTURE

1.1. BUILDING

Radore Data Center has four data center halls on a total area of 1.040 m2. It is located on the -4th floor of MetroCity in Levent/Istanbul. The construction of MetroCity was completed in 2002 and the complex was opened to public in 2003. MetroCity is built in conjunction with M2 underground line. Turkey's Internet infrastructure is planned and set up tracing the underground transportation lines. Located in a strategically important spot with respect to Internet, Radore's Internet infrastructure directly connects to the Internet Service Providers (ISPs). Radore's central location enables easy access from anywhere in the city. MetroCity is being monitored twenty-four hours a day, seven days a week, via its advanced security systems, fire detection and extinction systems and smoke evacuation systems. The MetroCity building was constructed in accordance with the NFPA standards. Precautions to ensure the fire extinction systems work effectively in case of an earthquake were taken and throttling valve systems were installed. In addition, there are fire brigade connection points on building entrances so that the fire station can interfere effectively in case of emergency.

1.2. POWER

The power capacity of Radore is 3.7MW in total: 2.1MW available (white spaces, air-conditioning infrastructure and office spaces) and 1.6MW auxiliary. Power for the data center is supplied via three different distribution transformers, two of which are main and one is spare. These power distribution units, which are located in MetroCity, are property of Radore. Radore's transformers are connected to the medium voltage ring network, which enables feeding from two locations in cases of need for backup.

The Synchronization Control Grid follows the power flow instantly for the transitions (generator-generator, transformer-transformer and generator-transformer) and conducts the transitions automatically in cases of breakdown, low/insufficient voltage or frequency. The UPS infrastructure steps in during transitions, which can last up to 30 seconds, providing uninterrupted power supply. The battery pack of the UPS system has a minimum runtime of 15 minutes.

Behind the transformer system equipped with backup and automated transition, there are three 1,100 kVA Caterpillar (CAT) diesel generators waiting on standby and automatic mode ready to produce power for the data center in case the utility power supply should be interrupted. These generators are supplied by two fuel tanks with 3.5ton capacity and one fuel tank with 10ton capacity which belong to Radore and one shared fuel tank of MetroCity with a capacity of 30ton. In case of power cuts, one of the tanks works actively, while the other feeds the active one to maintain uninterrupted power.

The UPS system utilized in the Radore is configured in form of 5 x (N+1) with one redundant. Data Center UPS Infrastructure has five different UPS systems;

1.Group	15x50 kVA Newave (ABB) Modular UPS, (N+1)
2.Group	10x100 kVA Newave (ABB) Modular UPS, (N+1)
3.Group	10x100 kVA Newave (ABB) Modular UPS, (N+1)
4.Group	5x100 kVA Newave (ABB) Standalone UPS, (N+1)
5.Group	5x50 kVA Newave (ABB) Modular UPS, (N+1)

Double-feed is ensured for TIER III data center spaces with A and B power lines. Power line A is supplied by the 1st and 2nd Group and power line B is supplied by the 3rd Group UPS. At TIER II data enter, 4th Group UPS system is used. In addition, the office area and network infrastructure are supplied by the 5th group UPS devices, which are assigned to these areas only and provide power for a minimum of 120 minutes.

Power for the server racks is supplied by a backed up “busbar” system. The busbar system prevents cable-hardware chaos and provides endurance against natural disasters. With busbar, troubleshooting is made easier and the cooling system works more efficiently.

Along with the backed up busbar system, the server racks are backed up by two different Power Distribution Units (PDU), which are supplied by two different UPS units.

1.3. AIR-CONDITIONING

Air in Radore’s white spaces is cooled using the “free cooling” technology. “Free cooling” is an economic method of using low external air temperatures to assist in chilling water, which can then be used for climatization.

Components of the “free cooling” infrastructure that Radore Data Center uses consist of;

- 3 x 840 kW RC chillers (external units to cool the water),
- Sensitive RC air-conditioners providing air circulation inside the data center (internal units),
- Circulation pumps required to provide the necessary pressure for circulating the water between the above-mentioned two units.

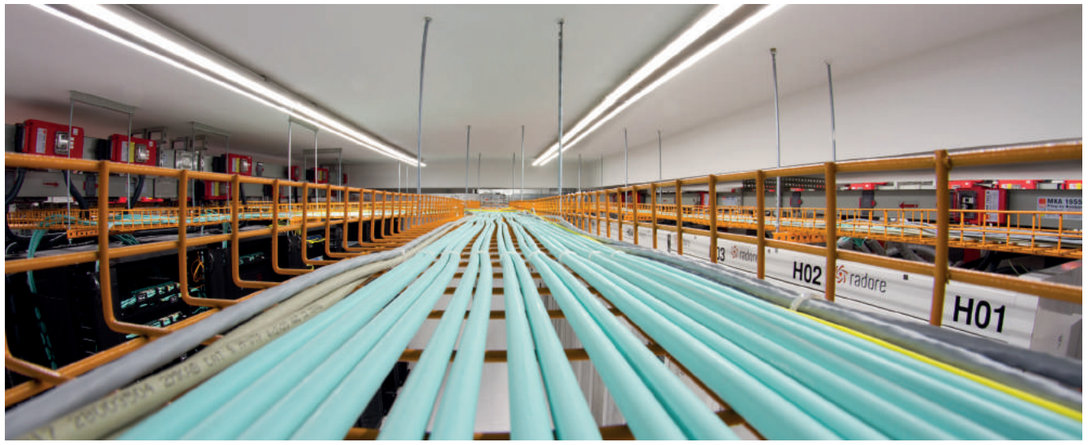
Radore Data Center possesses 5,850,000 BTU (2x840kW) active and 2,900,000 BTU (840kW) spare cooling power. The whole cooling infrastructure is configured with N+1 redundancy. 30-35°C hot air trapped in the hot air corridors of the data center is absorbed by sensitive air-conditioning units and cooled by the cold water coming from the chillers until it reaches a temperature of 16-23°C. The chilled air is immediately directed to the cold air input of the server systems. When the ambient air temperature drops to a set temperature, a processor can by-pass an existing chiller giving power savings of up to 70%, without compromising cooling requirements. Power savings decreases Radore’s annual PUE ratio (1.51) below sector average.

1.4. PHYSICAL SECURITY

Radore is monitored 24/7, physically and digitally. Apart from the authorized staff, access into MetroCity out of hours as specified by the MetroCity management is not allowed. Power and cooling units are located on a different floor than the data center. Only Radore’s authorized staff can enter this area. All visitors to the data center, including customers, are accompanied by authorized Operation Center officials.

In addition to the physical security provided by MetroCity, all means of access to Radore are monitored digitally and physically 24/7 and the footage is being recorded.

Along with the physical security measures, Honeywell air sampling smoke detectors are in place for fire detection. The fire prevention and extinguishing systems include Siemens and 3M branded Novec 1230 gas, FM200 gas and aerosol powder technology fire suppression systems. The office and data center spaces are guarded 24/7 with humidity and water sensors.



2. NETWORK

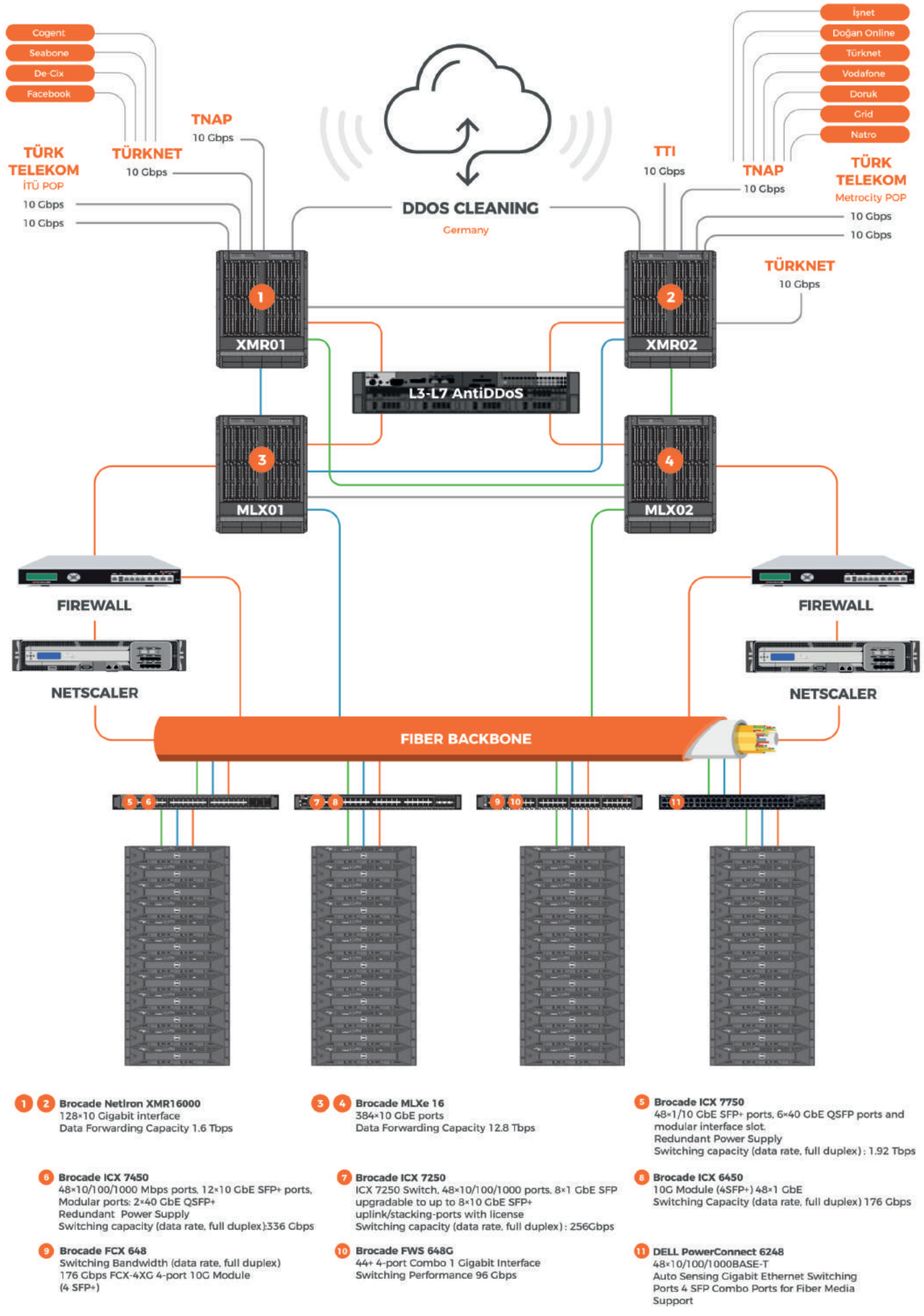
Radore is authorized by the Information Technologies and Communication Authority to provide Internet access and hosting services. The relevant Internet Service Provider License number is G-ISS-125. Radore Data Center offers Internet access via three different Internet service providers (Türk Telekom, Türk Telekom International and optionally Telecom Italia/Seabone). In addition, Radore has peering* with seven different service providers over the Turkey Network Infrastructure Platform (TNAP).

From its locality, Radore can connect directly to the fiber infrastructures of Türk Telekom International, Superonline, Vodafone, TurkNet and Grid Telekom. The connection is established using Brocade Netlron XMR 16000s with full redundancy and 1.6 Tbit/s capacity. The connection to Radore customer is established again by using Brocade Netlron XMR 16000s with full redundancy. Radore customers connect to the network backbone again through Brocade MLXe-16 aggregation routers with full redundancy.

10 Gbit Ethernet interfaces are used in Radore's network infrastructure. 100 Gbit Ethernet access capacity is available on demand. Thanks to the high capacity used in the network, Radore Data Center can meet instant or permanent capacity needs of its customers without making any physical or software changes on the network. In case of need, redundant Internet access can be provided independent from a single service provider. All network devices on the level of the main backbone are supplied by a backed up power source.

Brocade products are being used on the network layer of the data center backbone; RioRey and Citrix products are used along with Brocade products for services such as DDoS firewall, TCP multiplexing and load balancing. Switches used in the racks can be chosen from Dell or Brocade products.

(*) Peering is voluntary sharing of access equities in order to exchange the traffic among users of different Internet service providers.



3. MONITORING

Radore Data Center Infrastructure team is responsible for the follow-up, monitoring and maintenance of the power, cooling and security components that make up the data center's infrastructure. All components of the infrastructure are monitored non-stop by the infrastructure team with procedures of daily, weekly and monthly periodical maintenance. Parameters of the power distribution systems are monitored and measured 24/7 via the Energy Quality Analyzer. The white spaces and office areas are monitored via the fire warning switchboard; the white spaces are additionally monitored 24/7 by heat, humidity and water level sensors installed in 26 different spots. As to the cooling infrastructure, water discharge of the chiller compressors, incoming and outgoing water temperatures, as well as ambient air temperature are measured daily.

For the sustainability of redundant Internet access Radore provides for its customers, Radore Network Team monitors all components of the network backbone instantaneously, twenty-four hours a day, seven days a week. Incoming and outgoing data are followed via ARGUS software in the network infrastructure and the server can be controlled instantly using the Argus software.

CONTACT US

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- TK ISS Certificate No. G-ISS-125

Social Media:

- facebook.com/RadoreHosting
- twitter.com/Radore
- linkedIn.com/company/radore
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Banka Bilgileri:

Garanti Bank	IBAN: TR72 0006 2000 3400 0006 2956 44
Isbank	IBAN: TR81 0006 4000 0011 2990 4493 81
QNB Finansbank	IBAN: TR10 0011 1000 0000 0011 3080 06