



AdNet  
Telecom

[www.adnettelecom.ro](http://www.adnettelecom.ro)



AdNet Data Center  
Business for the 21<sup>st</sup> Century

## DaaS/SaaS Solution



# Our Mission

## Mission

AdNet strives to connect people, information, and ideas from around the world through providing the best telecommunication and data center services. We act on four principles to promote sustainable solutions that bring value to our clients.

- ✓ Reliability
- ✓ Performance
- ✓ Customer service
- ✓ Maximum value



## Vision

Constant Innovation keeps AdNet at the forefront of the telecommunication market. In order to develop and execute market-changing ideas, we hire and train the best talent and constantly evolve through education, customer feedback, and trusting partnerships

- ✓ A consistent connection to customers
- ✓ Innovation through a pioneering spirit
- ✓ Promoting valuable solutions to customers
- ✓ Confidence and Integrity



# AdNet SaaS

1. Solution Overview
2. Key Components of AdNet SaaS Solution
3. Benefit from AdNet SaaS Service





# 1. AdNet SaaS – Solution Overview

## Key Features and Advantages

- ✓ **Mobility** You can access your data and application from anywhere, you just need internet access and a browser. We deliver our SaaS compatible with any platform (Windows, Linux, iOS).



- ✓ **Security** All of your data and applications are stored on our datacenters and you can access them at any time without any risk – no data stored on local laptop/desktop.



- ✓ **Flexibility** Our solution provides great flexibility, you can add users as your Company grows, establish a virtual office in our cloud and reduce the need for physical office space.



- ✓ **Economy** Our solution replaces fluctuating and high costs with a predictable fixed monthly fee. Choose from our Services Plan according to your needs.



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## 2. Key Components of AdNet SaaS Solution

We want to be able to deliver our solution to a broad market range. As a result of this, beside having ISO9001, ISO14001 and ISO27001, we also have the following:

- ✓ **Our services are compliant with FSA Rule #6/April 3<sup>rd</sup>, 2015:**
  - Distance over 300 Km in straight line between our data centers;
  - Different tectonic plates.
- ✓ **Our services are licensed by the National Regulator for Online Gambling industry:**
  - License #880 from May 19<sup>th</sup>, 2016.

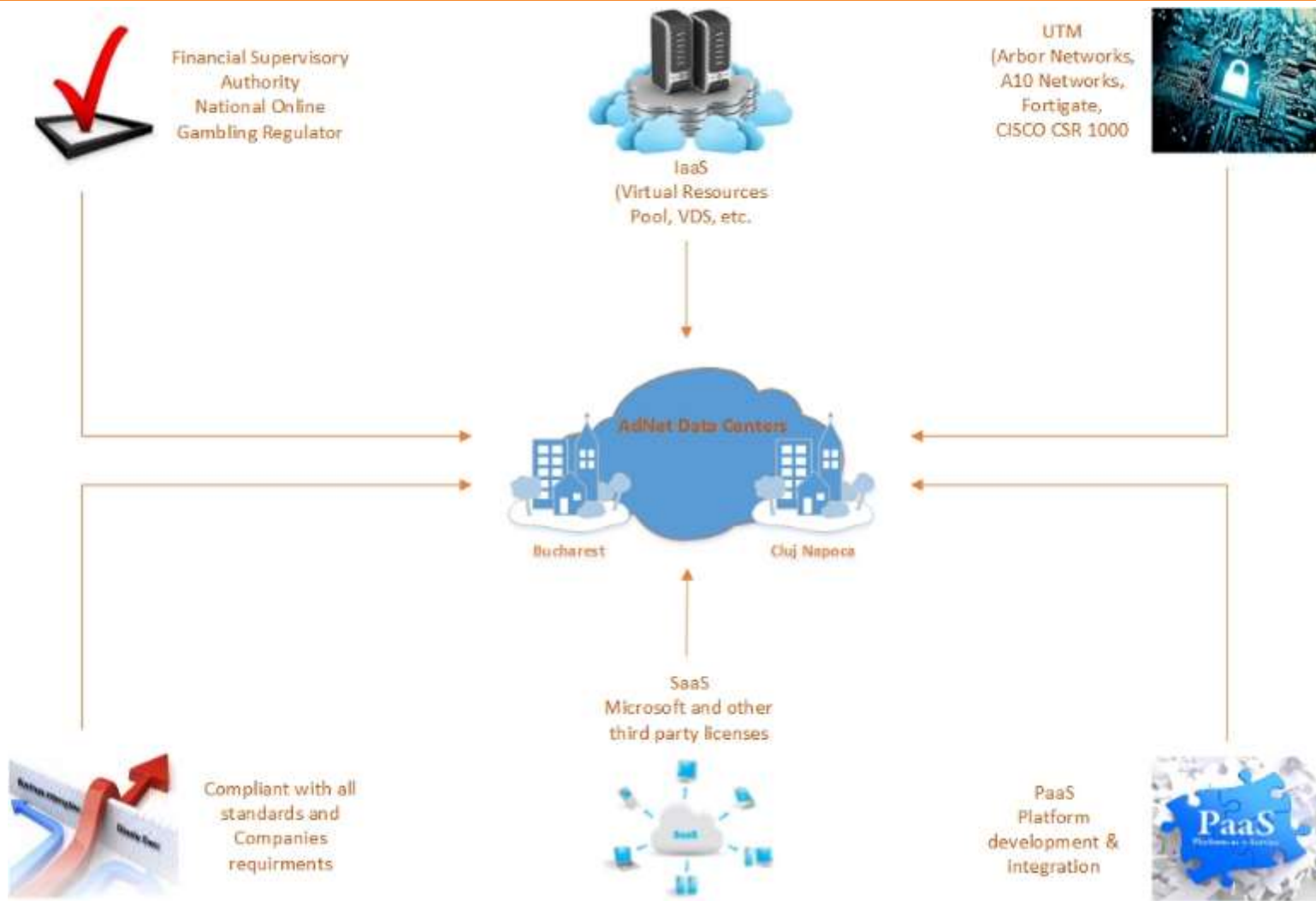


### We own and operate two data centers

- ✓ Bucharest – collocation/CISCO UCS Virtualization Platform and office space available in the building next to the data center (up-to 100 office spaces);
- ✓ Cluj Napoca – collocation/IBM Virtualization Platform and office space in the same building, above the data center (up-to 40 office spaces);
- ✓ The data centers are interconnected via two different fiber optics links, ensuring full redundancy;
- ✓ Each data center has its own AS Number and own internet connections, thus we maintain maximum independence between them, providing a reliable solution to our customers.



## 2.1. Key Facts



## 2.2. AdNet Telecom Data Center Advantages

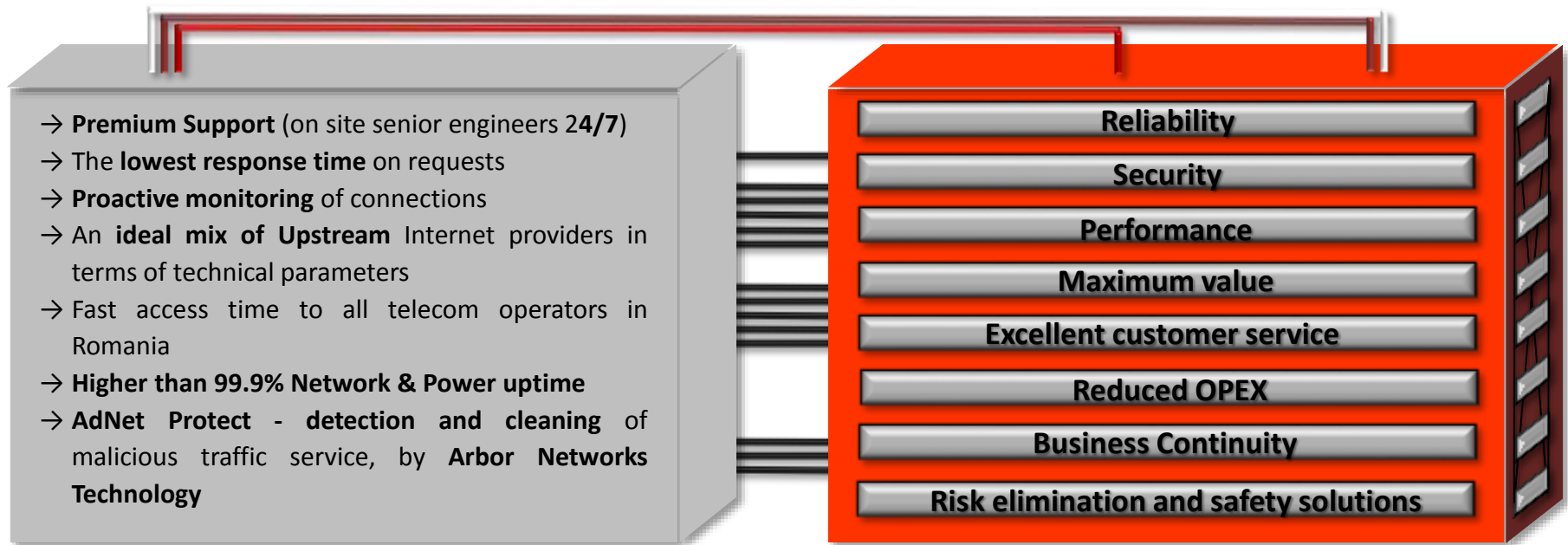
- ✓ **First modular container Data Center in Romania**
- ✓ **Built on TIER III standards**
- ✓ **Energy Efficient**
- ✓ **Self sustainable IT and telecom infrastructure**
- ✓ **Innovative monitoring and security system**
- ✓ **Complete range of Data Center Services**
- ✓ **Easily accessible**
- ✓ **Authorized by the National Regulator for Gambling**





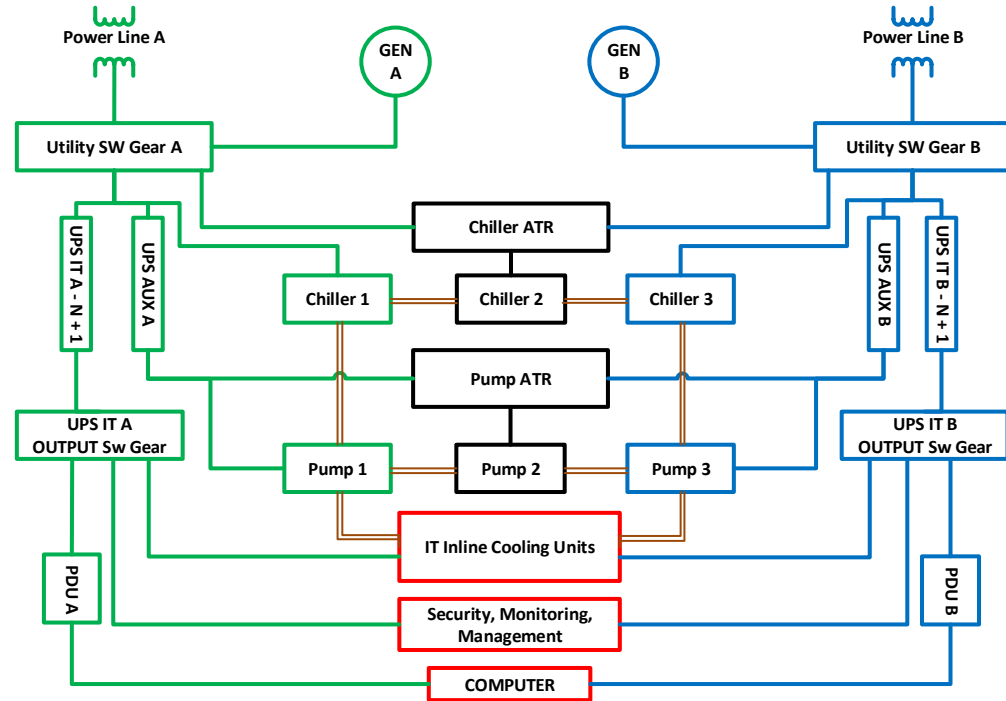
## 2.3. Professional Data Center

- ✓ State of the art collocation and virtualization hardware, software and network technologies
- ✓ Designed to consolidate IT assets in order to decrease investments and operational costs
- ✓ Virtualizing represents the optimum mixture between own IT infrastructure and AdNet next generation data center capabilities which allows your business to better focus on high revenue activities



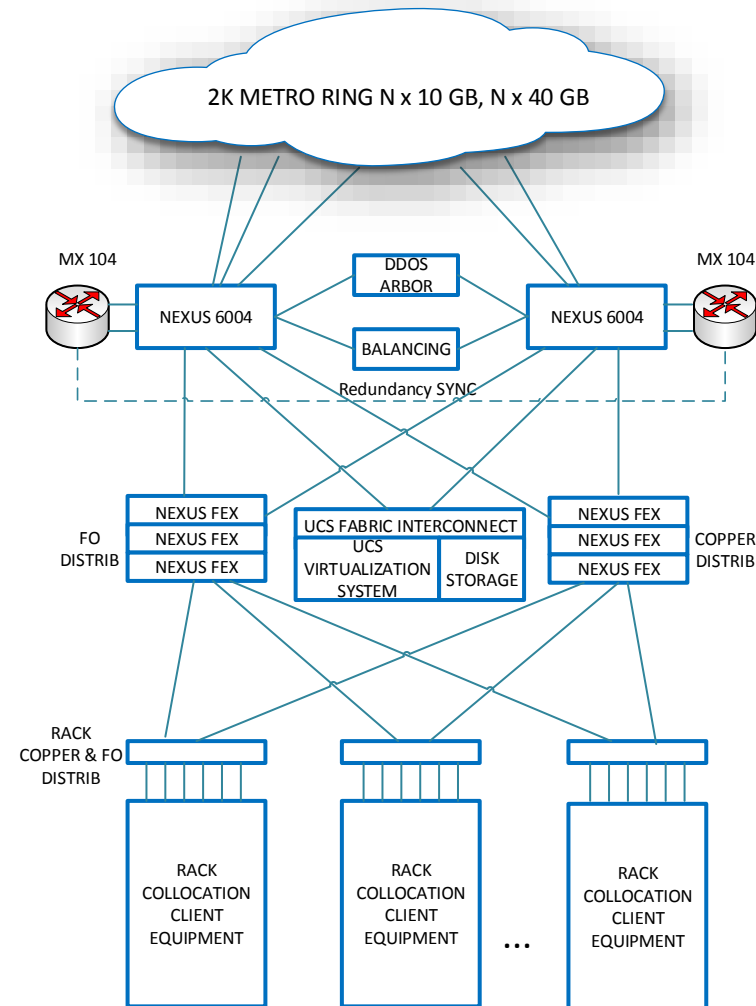
## 2.4. TIER III Design

- ✓ Availability higher than 99.982%
- ✓ Redundant power elements with independent
- ✓ Circuits paths configured in as 1+1
- ✓ Redundant cooling elements with
- ✓ independent circuits paths configured in as N+1
- ✓ Provides concurrent maintenance



## 2.5. Self sustainable IT and Telecom infrastructure

- ✓ IT infrastructure design for TIER III
- ✓ Multipath optical fiber on 3 circuits
- ✓ High end border routing equipment Juniper MX series
- ✓ Data Center L2 and L3 switching performed by Cisco Nexus
- ✓ Complex evolved virtualization platform based on Cisco UCS, HP 3PAR
- ✓ Storage and VMWare VCenter/Vsphere
- ✓ Cluster balancing technology from A10 Networks
- ✓ Advanced traffic anomaly detection and cleaning with Arbor System
- ✓ Complete internal data circuits distribution with Panduit materials



## 2.6. Racking expert and virtualization system

### Racks

- ✓ Hardened steel Racks:
- ✓ 45U racks space proving at least 42U usable IT Equipment
- ✓ Depth: 1000mm
- ✓ Width: standard 19"
- ✓ PDU: for each Rack 2 PDU three-phase power supply of 400V – Maximum power 11 KW redundant/ Rack, each PDU with 24 IEC13 sockets and 6 IEC19 sockets
- ✓ Assembling on metallic anti vibration and anti seismic system

### Virtualization system

- ✓ Cisco UCS Blade Server System
- ✓ 5 x Blade server chassis each with 8 blade server units installed
- ✓ Installed processing power ≈ 1800 VCPU
- ✓ Installed memory : 6144 GB
- ✓ HP 3PAR 7400 Enterprise Storage Dual controller with 200TB of usable space (250TB installed)
- ✓ Storage: even mix of SAS/NL-SAS disk
- ✓ Switching: Integrated Cisco switch fabric with extra 32 port 10GB for external connectivity
- ✓ VMWare VSphere/VCenter Enterprise plus virtualization system





## 2.7. Connectivity

### Physical connections (L1):

- ✓ 3 paths geographically and logically independent underground optical fiber links – 144 optical wires available
- ✓ Open Third-party fiber optic interconnection cabinet easily accessible from any underground infrastructure

### Logical connections (L2-L3):

- ✓ Data center node is included in main N x 10Gbps metropolitan multi-ring core network of Ad Net, providing high capacity resilient communications with most POP or exchange nodes
- ✓ Juniper MPLS Switches and Routers provide any type of logical connection (L2 circuits, VPLS, L3 VPN, QinQ, Dark Fiber, TDM transport, etc.)

### External connections (National&Internet)

- ✓ Ad Net is member of public Internet Exchanges: Interlan, Balkan-IX RoNIX, NxData, IBM Data Center, INES Datacenter, Cyberhost Datacenter
- ✓ Extra private national interconnection with leading ISP providers improve capacity and latency
- ✓ Optimized Balanced Access to Internet is achieved through major world wide Internet Carriers (M247/NTT, Telekom/LEVEL3)



## 2.8. Power and UPS

- ✓ Total installed power 480 kW x 2 with redundancy in 2 lines
- ✓ 2 automatic back-up diesel generators one for each line
- ✓ Accumulators pack – 108 with 100 Ah capacity for each power box
- ✓ 2 UPS of 40 kVA for chiller pumps
- ✓ 2 UPS of 20 kVA for interior modules of inline cooling units
- ✓ 2 heating pumps and 1 ice pillar for extra heat removal before Chillers
- ✓ 1 wind turbine with 2 KW – providing auxiliary power
- ✓ 80 x 250W (20 KW) photovoltaic farm – compensating in extra hot summer days



## 2.9. Energy efficient

- ✓ Optimized IT Equipment arrangement in Cold/Hot Aisle
- ✓ Advanced multistep cooling control allow for high efficiency
- ✓ Integration of green energy such as photovoltaic and wind turbine
- ✓ High performance rectifiers, inverters and accumulators in UPS system
- ✓ Targeted PUE - Power usage effectiveness lower than 1.3 for 100% load
- ✓ Actual PUE – 1.75 at 20% Load



## 2.10. Cooling

### **Adiabatic & Free cooling – Indoor for IT Containers:**

- ✓ 60 racks with average power of 7 KW arranged in 3 cold aisle with 20 racks each resulting in a total power of 140KW / cold aisle
- ✓ 24 LCU providing 20KW of cooling arranged in 3 cold aisle resulting in 8 units / row with a capacity of cooling of 160KW (7+1)
- ✓ In-line positioning with racks, Cold-Isle/Hot Isle containment with front to back airflow
- ✓ Cooling agent: thermic agent with heat transfer properties optimized for whole range of meteorological conditions

### **Chiller water cooling – Outdoor:**

- ✓ 3 x 300KW chiller units with Free Cooling mechanism
- ✓ “Air-Conditioning” type water cooling – compressors based in 12 steps (4 independent compressors / chiller unit)
- ✓ N+1 Redundant compressors, ventilators and other components (according to TIER III standards for cooling)
- ✓ Automation system for adjusting electrical energy consumption

### **Adiabatic & Free cooling – Indoor for Power containers:**

- ✓ 4 units 30KW
- ✓ N+1 redundancy type according to TIER III standards for power supply





## 2.11. Security system

### **Complex security system**

- ✓ Fire detection system
- ✓ Smoke detection sensor
- ✓ Temperature sensor
- ✓ Fire extinguisher cylinders
- ✓ Fire detection station
- ✓ Exterior fire alarm control panel from fast access from outside
- ✓ Dual power source, both from main power supply and UPS

### **Access control module**

- ✓ Emergency fire path – both mechanical and electromagnetic
- ✓ Magnetic stripe card access
- ✓ Unlimited user access with multiple roles and rights
- ✓ Control panel integration with fire detection and extinguisher system – automatic fire path unlocking
- ✓ Real time reports and history : access type, users, access path, etc.

### **Surveillance system**

- ✓ HD IP cameras
- ✓ NVR recording and monitoring
- ✓ Minimum 30 days data storage H.264



## 2.12. AdNet Telecom Business Continuity & Disaster Recovery Solution

Considering the growth of opportunities on the Data Center Services market (both in quantity and in quality and complexity of the services), we have invested in our second data center in Cluj Napoca.

Thus, we are now able to project a more complex services structure, adding more services in our portfolio.

Our key points for the BC & DR solution are:

- ✓ **Energy Efficient**
- ✓ **Self sustainable IT and telecom infrastructure**
- ✓ **Innovative monitoring and security system**
- ✓ **Complete range of Data Center Services**
- ✓ **Over 325 Km (200 Mi) in straight line from Bucharest**
- ✓ **Easy access (motorway, railway, international airport)**
- ✓ **Fully equipped office space**
- ✓ **Minimum flat fee, most of the services are activated only in case of a disaster / no CAPEX**
- ✓ **Compliant with ISO 22301 / Norma A.S.F. nr. 6/2015 / ONJN Licenses**



## 2.13. Disaster Recovery

### Addressed Threats

- ✓ **More common** - computer failure, network failure, software error, data loss, DDoS attack
- ✓ **More infrequent** - floods, earthquakes, winter storms, electrical storms, terrorist attack

### Benefits

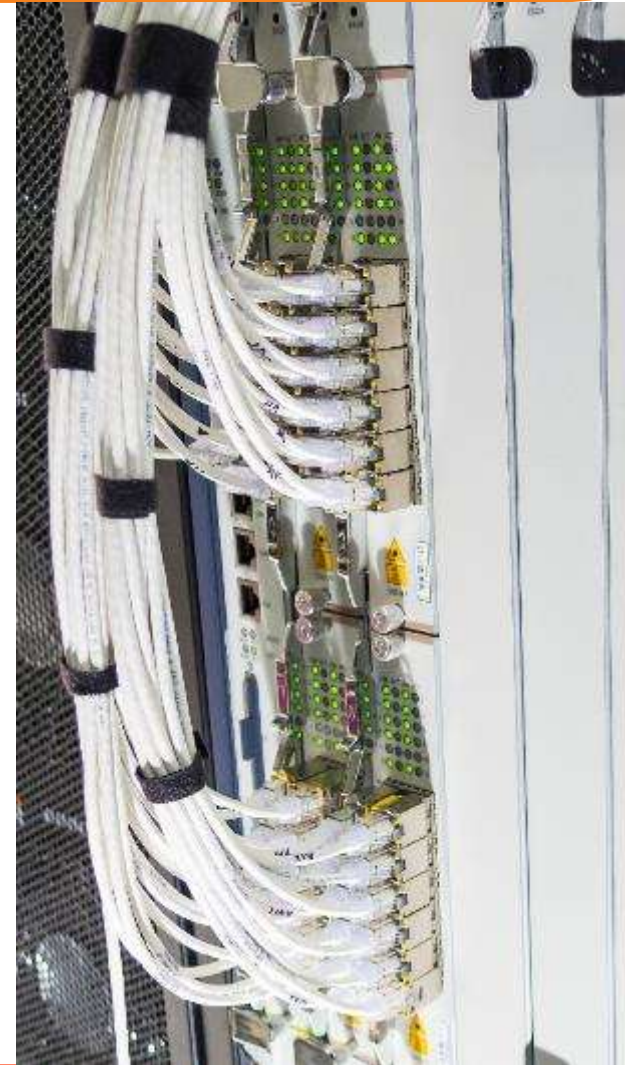
- ✓ **Reduced Cost**
- ✓ **The way it works** - data is backed up directly into hypervisors, run at remote locations by servers where the data is duplicated in the cloud.
- ✓ **Improved efficiency** – RPO (recovery point objective – the maximum permissible loss of data before business is impacted severely) and RTO (recovery time objective = maximum acceptable down time) metrics can be drastically reduced without a corresponding increase in costs resulting in a more efficient DR Plan at a far lesser cost.
- ✓ **Flexible solution** - only pay for the services used. Additional services are readily available on demand. Decide the sequence, types of data and applications that need to be backed up.
- ✓ **Security** – latest encryption technology along with a two stage authentication process to prevent unauthorized access.



## 2.14. Business Continuity

### The importance and necessity of a sound IT Business Continuity Plan

- ✓ It mitigates the risks associated with Natural disasters of all types.
- ✓ Accidents such as fire, explosions etc. which could damage IT infrastructure and cause death and/or injury
- ✓ Sabotage, both internal and external
- ✓ Power outages
- ✓ Communications failure
- ✓ Disruptions in transportation due to various factors, preventing employees from attending work
- ✓ Security issues that can bring down the network
- ✓ Environmental disasters
- ✓ Cyber attacks on the business by hackers and/or criminals
- ✓ By having a effective Business Continuity Plan in place, a business will ensure that it has the resources and/or the information it requires, to combat the emergency successfully.





# 3. Benefit from AdNet SaaS Service

## Key Features and Advantages

✓ **Accessible  
Pay-as-you-go**

Grow your business, not your IT infrastructure. Develop your projects without the risk of paying for IT services after the project is done.



✓ **Quick  
Implementation**

We deliver the services as fast as you need them, you don't need to wait for licenses or hardware to be delivered.



✓ **Better  
Experience**

Our services are full-featured software packages, users can enjoy "on-desktop" applications, not browser-based restrictions.



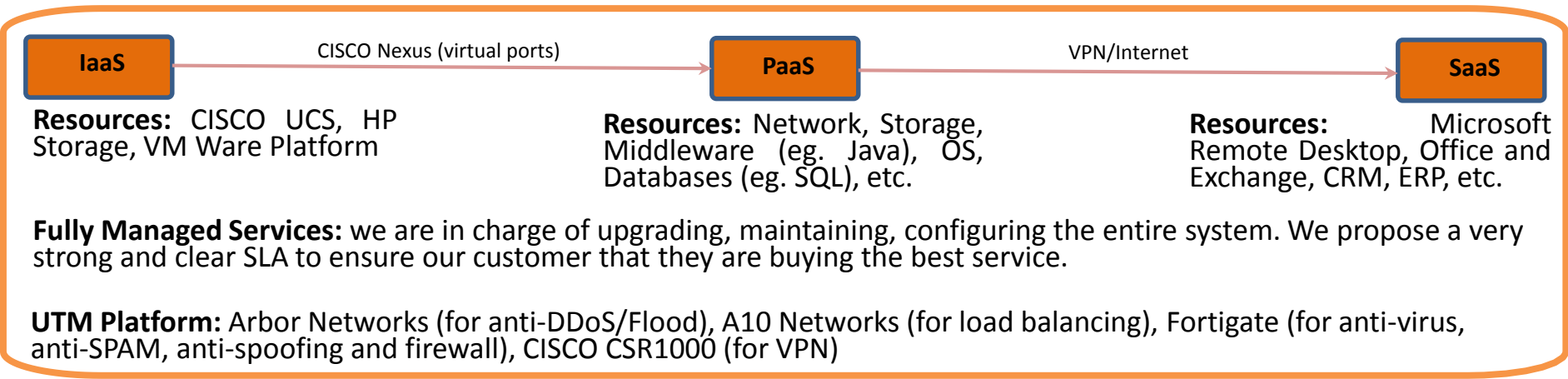
✓ **Fully  
Managed**

Daily back-up to our Disaster Recovery site, 24/7 monitoring and management, up-dates and patches as needed. Everything delivered.



# 3.1. Services Delivery

From our solution architects to our customers' users, we deliver a great working environment:



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## 3.2. High End Services

### Our RD (Remote Desktop) platform enables customers to enhance the IT infrastructure:

- ✓ **Lower cost** – by reducing the IT department, license acquisition optimization, hardware outsourcing (we estimate at least 25% compared to a “in house solution”);
- ✓ **Predictability** – no hardware depreciation (no need to up-grade local hardware, e.g.. Laptops, desktops, etc.)), no license expiry, the customer pays in each month for exactly the number of employee which he has;
- ✓ **Greater performance** – because we continuously upgrade and update the infrastructure, while keeping the same price for the customer. Also, we deliver Disaster Recovery site, which means very low downtime;
- ✓ **Easy to Use** – we deliver the user’s content (Office, CRM, ERP, E-mail, Storage) in a single place (according to the user’s rights, we can grant access only to the tools the users is allowed by the organization to use), which will make it easy and fast to use, even for those with very little computer knowledge;
- ✓ **True Portability** – the platform is accessible from any device (laptop, tablet, smartphone, etc. without the need to install the apps – it only needs a web-browser;
- ✓ **More Secure** – we are using the best tools on the market to protect customer’s data and we have the know-how necessary to deploy them in the most efficient way.



### 3.3. Our Proposal

TBD

**APPROVED**



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## 3.4. Success Stories

### Financial Company, London

**The Challenge:** to move out from the Company's offices (London, Frankfurt, Moscow and Amsterdam) the entire hardware and software infrastructure.

**The Solution:** 10 virtual server, A10 Networks for load balancing, UTM (Arbor Networks, CISCO CSR1000, Fortigate), Microsoft licenses for Windows, Remote Desktop and Office. We have designed the solution, assisted the software vendors for implementation (client's CRM/ERP/etc...), setup the VPNs, setup the user accounts and user rights. In 40 days we have delivered the full service for 300 users to our customer.

### Software Company, Cluj Napoca

**The Challenge:** the Company had "in house data room" and wanted a efficient solution for Disaster Recovery for 6 servers.

**The Solution:** we have activated one server with storage for all of the client's servers. The server which is always activated controls the entire system and activates the DR servers when needed. The clients pays only a minimum fee for only one server and a fee for each activation in case of a DR event.



Thank you



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