



IMPLEMENTING NEXT GENERATION IT AND COMMUNICATIONS SOLUTIONS

NETVISOR LTD.

PETZVÁL JÓZSEF U. 56. H-1119. BUDAPEST, HUNGARY

TEL: +36 (1) 371-2700

WWW.NETVISOR.EU



DATA CENTER SOLUTIONS

NETVISOR'S COMPETENCY FOR DESIGNING AND SUPPORTING THE OPERATION OF MISSION CRITICAL DATA CENTERS

NETvisor is a system integrator specializing in the design and implementation of **IT and communications systems**, the implementation of value added telecommunications and IT service solutions and the development and provision of business & operational support systems and services.

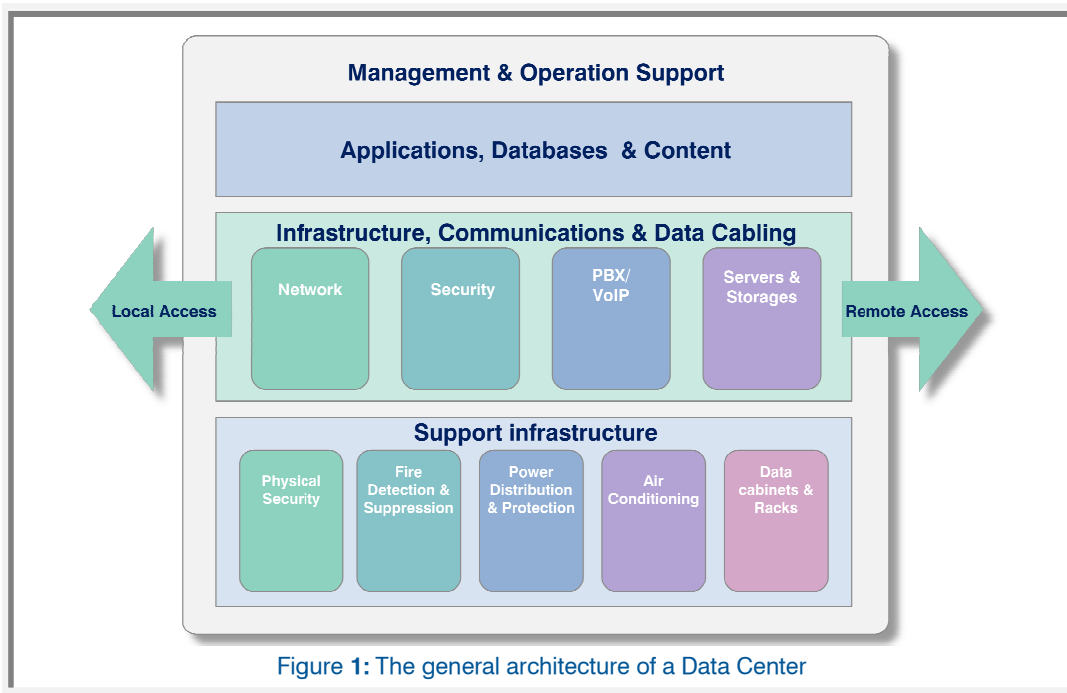
We offer a broad range of our project expertise. We have outstanding expertise in **the management, operation support, the network and network security of data centers and server rooms**. We specialize in planning, designing, constructing, monitoring and maintaining data centers, that integrate 'best-of-breed', critical infrastructure technologies and own products. The result is a highly available, scalable, manageable, and maintainable data center environment. Together with our partners we offer planning, designing, implementing and building the infrastructure of data centers.

NETvisor is highly qualified in assessing data center infrastructure risks, and based on the audit we provide recommendations for improvement and give project cost estimation and professional support throughout the implementation.

In the today's highly competitive markets, where the critical IT infrastructure downtime is measured in profit loss, NETvisor designs solutions that protect from the most frequent causes of downtime, data losses, hardware damages,

and decreased productivity. NETvisor offers high availability solutions for data centers, computer-rooms, network operation centers (NOC) and other mission critical facilities.

Figure 1 illustrates the general architecture of data centers and the services offered by NETvisor. We provide either full services as main contractor or just particular services.



DATA CENTER SERVICES OFFERED BY *NETVISOR*

1. INTERNAL AND EXTERNAL COMMUNICATION OF DATA CENTER (LAN & WAN NETWORK)

Three major aspects should be considered when designing a Data Center

- **High availability:** two main means are required to achieve this quality expectation:
 - safe and redundant architecture
 - high expertise in operation support
- **Flexibility:** The ability of starting new services without substantively changing the infrastructure and the operation processes in place is highly important in order to quickly and cost-effectively adapt to evolving needs.
- **Simplicity:** The simple architecture and the transparent processes dramatically decrease the investment costs and time; furthermore they highly increase the effectiveness of the operation.

■ Based on the above aspects the data center communication solutions and services offered by *NETvisor* are the following:

- Building highly reliable, managed, redundant and scalable LAN network (VLAN, QinQ, trunking)
- Developing redundant, high speed Internet exits with traffic routing
- Traffic distribution, load balancing for managing the concurrent mass network requests
- High speed fiber channel for serving the storage-server connections
- WAN network traffic optimization, prioritization (QoS based application controlling)
- Supporting the Voice, Video, multimedia applications - video server, soft switch

2. EXTERNAL AND INTERNAL IT SECURITY

Service providers, partners, suppliers are essential to the success of today's data centers and organizations operating them. However these participants also present security and compliance risks that must be managed to protect your assets and comply with regulations and internal security policy.

The IT security requirements of data centers can be sorted in three main categories:

- data secrecy
- data integrity
- data availability

■ For meeting the above requirements *NETvisor's* IT security services include:

- Firewall – border protection (data center and user protection), LAN segmentation are key component of a secure network
- WAN traffic encryption – hardware and IPSec VPN based solutions ensuring the secure connection among the sites and remote users protect confidential customer information
- Managing the access rights of the users to the local and remote networks for guaranteeing secured services (e.g.: IPSec/SSL VPN, complemented with AAA)
- Preventing and detecting external intrusions (e.g.: Network IPS) helps to protect your organization from unauthorized access
- Host protection services – managed Host Intrusion Prevention Service (IPS), virus detection and prevention
- Threat assessment (Unified Threat Management)



3. MANAGEMENT AND OPERATION SUPPORT

All organizations using IT depend on the business critical services provided by its servers (data center). Any fault, downtime or service outage directly impact the business processes, subsequently measuring the availability of the network, the applications, the services, the operation of the IT organization is the most effective tool for meeting the business requirements.

The operation support of data centers provides integrated monitoring of data center and IT services complemented by proactive alarm, reporting and analyzing services. The integrated monitoring system exactly shows the root cause of the faults, and its sophisticated reporting system gives advices for the modifications become necessary. The operational support system of data centers can be seen on Figure 2

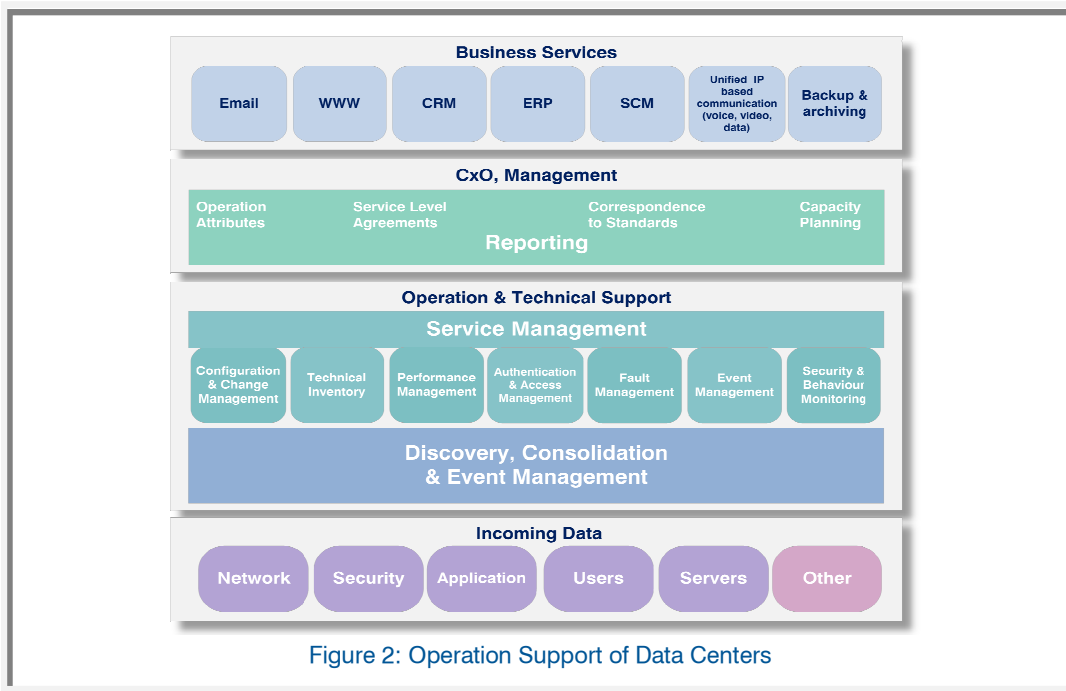


Figure 2: Operation Support of Data Centers

NETvisor offers management & operation support services described below:

- **Change and Configuration Management:** by automatically storing service essential settings and tracking all changes help in reducing costs by automating day-to-day operations, and in ensuring compliance to regulatory requirements

- **Technical Inventory:** modern technical inventory and resource management systems keeps the inventory system automatically up to date and can model the following elements contributing to the services of the data center.
 - Services
 - Contracts
 - Users, Service Providers
 - Assets with their configuration
 - Applications with their settings, etc.
- **Performance Monitoring:** on-line performance data and trends are provided for all the layers (hardware equipments, operating systems, applications, services) of the data center even by synthetic transaction measurements. The major goal of performance monitoring is to prove that the services correspond to the quality expectations and to help in capacity planning.
- **Authentication and Authorization Management:** user access rights, accesses, logins to the different elements of the network are controlled allowing customers to control user access to protected information and resources.
- **Event and Fault Management:** the availability and operational parameters are observed and monitored
 - on physical level: network equipments (servers, security tools)
 - on operating systems and middleware software level (e.g.: database server)
 - on application level (e.g.: ERP, CRM, etc.)
 - on service level
- **Service / Operational Level Agreement (SLA and OLA) fulfillment monitoring:** regular and automatic SLA reports are made based on the performance measurements and the maintenance parameters (data from the trouble ticket system) taking in account the SLA / OLA contractual specifications
- **Capacity Management:** capacity reports and trend analysis are needed for optimizing operational and capital costs, i.e. for resource planning and for increasing the utilization of IT assets.
- **Incident / Problem Management:** the events sent by network elements are collected, analyzed, and validated against the sector-specific requirements (e.g.: BASEL2, Sarbanes-Oxley, etc.)
- **Configuration Management:** serves to ensure that configurations of the LAN, WAN and security equipments conform to their requirements and the configuration changes are controlled
- **Security Information and Event Management (SIEM):** by real-time security alerting and analysis the security and risk mitigation enhance, by preparing security compliance reports for internal policy and regulations the compliance becomes simplified concluding in optimized IT and network operation.



4. DATA CENTER DESIGN & ENGINEERING SERVICES

Designing and building data centers significantly differ from usual IT projects. The difference can be summed up in one expression: **exceptional quality requirements**. The high quality requirements need high level engineering support and professional services.

 **NETvisor specializes in the following high quality professional services:**

- **Data Center design and planning:**
 - System and schematic design, equipment specification, detailed plan for designing scalable, secure (physical and logical) architecture
 - Defining the operational processes for achieving optimal IT service
- **Delivery and installation** of hardware and software components: a test system highly supports the development and configuration of the system and helps system crashes be avoided.
- **Integrations on application level:** by integrating the operation support applications the data center can automatically consequently more transparently and efficiently be operated
- **Elaboration of operational processes**, change management, fault management and escalation process development
- **Developing Disaster Recovery and Business Continuity plan** is crucial to protecting the future of your organization in the event of natural disaster or other emergency that may cause downtime.
- **Security Policy development** (preparation of IT security regulation): the security policy must include the overall security goals, an outline of the overall level of security required, the security standards and definitions of training and processes to maintain security.
- **Performing Security Audit** that includes reviewing personnel procedures and responsibilities, change management processes followed, appropriate backup procedures, the physical security of the data center, and environmental controls to ensure equipment form fire and flooding.
- **Data security services** (backup, recovery, destruction)
- **Maintenance** (regular, periodic, developing annual preventive maintenance schedule)
- **Fault Management** (fault detection, root cause analysis, ensuring alternate solutions for business continuity & disaster recovery)
- **Fault isolation and problem resolution** – data capture, analysis, netflow, port monitoring
- **Call Center (IVR)** establishment, integration to management systems

5. SERVERS AND APPLICATIONS

Business information is strategic asset and must be adequately protected, rapidly recoverable and highly available. The main components of a data center are the stored data and the applications facilitating them. The most important tasks of a data center include the secure storage of its components, provision of access to both data and hosted applications and backup of data. NETvisor supports you along with the help of its partners to achieve this goal and it is necessary to provide and maintain the following elements.

- **Servers** featuring highest reliability and efficiency, coupled with simplified serviceability and management
- **Operating systems** and their high level maintenance for a seamless, flexible and dynamic operating environment
- **Middleware softwares** enabling enterprises to create and run agile and intelligent business applications
- **Database management systems** securely protecting information, compressing data onto low cost storage partitions for faster performance, maximizing availability and eliminating idle data center redundancy
- **Virtualization solutions** offering cost savings through consolidation and lower energy, facility and labor costs
- **Storage** prepared for large data amounts and fast access requirements – highly scalable, efficient, high performing storage solutions with careful attention to power capacity, space constrains and application usage
- **Backup and archiving systems** meeting compliance and governance goals and configured according to the required service level

6. PHYSICAL INFRASTRUCTURE

Data centers are mission critical assets of your company that need to be supported by secure, reliable and scalable physical infrastructure. Data center infrastructure is built upon technologies from different vendors and many of which NETvisor works with to ensure integration of the components, like:

- **Intelligent enclosures**, data cabinets and rack-mounted systems – manageability (temperature, intrusion)



- **Console and terminal connections** – local and remote access for the fast and effective operation and maintenance
- **Power protection and distribution** – redundant power supply supported by uninterruptable power distribution and generator protection
- **Air conditioning** – data center and building cooling/heating
- **Fire detection** and automatic fire suppression systems
- **Integrated intelligent building monitoring** ensures the co-operation of the subsystems operating the data center (air conditioning, power protection and distribution, fire detection and suppression, access control systems, CCTV & IP-camera systems, etc.)
- **Structured Cabling** – intelligent manageable cabling among the servers in the enclosures, racks and networking equipments (monitoring, remote setting)

