

A SMARTER IT INFRASTRUCTURE
FOR ENERGY



»»» Solutions for Energy

XRoads Networks

THE ENERGY INDUSTRY INCLUDES THOSE ORGANIZATIONS WHICH PRODUCE, TRANSPORT AND REFINE VARIOUS TYPE OF ENERGY. IT IS CRITICAL THAT THESE FACILITIES ARE ABLE TO DISTRIBUTE THE LATEST DATA IN REAL-TIME IN ORDER TO MEET CONSTANTLY CHANGING MARKET CONDITIONS. THE EDGEXOS PLATFORM IS DESIGNED TO ENSURE FAST AND RELIABLE CONNECTIVITY TO THE INTERNET.

The EdgeXOS platforms are designed as a long-term investment in a facilities information infrastructure. As such, these appliances have a long life span (with a MTBF of over nine years) and build-in high availability features which ensure 24/7 uptime, even in the event of a significant power or hardware failure.

With its modular design, the EdgeXOS platform can easily be upgraded as future needs dictate new innovations in the functionality of the platform. XRoads' offers firmware upgrades, advanced hardware replacement and extended warranty service to maximize your return on investment.

DELIVERING FAST AND RELIABLE ACCESS TO REAL-TIME DATA

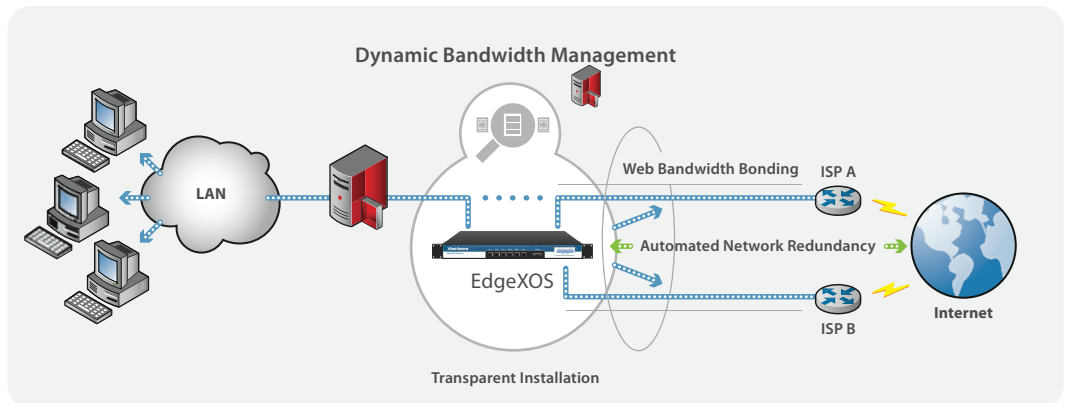
The typical facility today requires fast Internet access for downloading and uploading constant streams of mission critical data, from pipeline pressures to the latest capacity spreadsheets end users must be able to constantly send and receive information. Many energy organizations also require access to cloud-based data services, in order to perform daily tasks like send email, download files, etc.

The energy industry has several typical requirements for data connectivity including:

- **INTERNET BONDING & REDUNDANCY:** XRoads Networks has been deployed in a number of energy companies within the industry, including Schlumberger, Fluent, Santa Fe Pacific Pipeline, and Seajacks (platforms), to name a few. In most cases the enterprise class UBM platform is deployed in these cases in order to improve through and provide automated ISP redundancy for both land line and wireless or satellite network connectivity.
- **DYNAMIC BANDWIDTH MANAGEMENT:** As the access to real-time communications has become critical, and due to recent federal regulations, the EdgeXOS appliance is able to prioritize applications and ensure that critical services take precedence over email, and web access, for example. Further the EdgeXOS is able to mitigate bandwidth bottlenecks by using our dynamic bandwidth management technology which prevents "bandwidth hogs".
- **SERVER LOAD BALANCING:** Many of our energy industry customers have various data server requirements, from providing real-time plant operations data to end-users around the country and around the world. The EdgeXOS platform is able to ensure prioritized application delivery using its fault tolerant failover capabilities and XFlow network monitoring. The EdgeXOS platform also provides for quick, easy, and inexpensive method for achieving scalability through server and ISP load balancing.

The common theme for each of these end-users is the requirement of quick and available network connectivity, specifically to the Internet and cloud-based services. Internet access has become a core requirement for everyone which requires an infrastructure which is capable of providing fast and reliable connectivity.

This diagram demonstrates the typical installation and placement of the EdgeXOS platform within a multitenant networks. Installation is seamless and transparent and compatible with existing network infrastructure.



ACCELERATING INTERNET CONNECTIVITY

The EdgeXOS platform is unique in its ability to bond and accelerate multiple Internet connections. This capability provides our healthcare customers with the ability to combine two or more inexpensive broadband Internet connections to provide faster, more reliable, Internet connectivity to their customers. The EdgeXOS platform is also scalable, so as the needs of a particular facility increase, simply connect additional broadband connections.

The bonding and acceleration capability is unique in that you can take a 3Mbps DSL connection and combine it with a 5Mbps cable connection in order to obtain 8Mbps download throughput for your end-users. No other solution on the market has the ability to combine broadband links in this manner.

ENSURING 24/7 ACCESS TO CRITICAL RESOURCES

The EdgeXOS platform enables energy companies to achieve full Internet redundancy through the use of two or more Internet connections. If one connection fails, the EdgeXOS platform will automatically re-route all traffic across the remaining active connections. Once the failed connection becomes available traffic will automatically be added back in to the available paths for routing traffic.

Beyond simple failover and redundancy, the EdgeXOS also incorporates several unique capabilities in order to ensure that heavy network utilization does not cause what a guest might also interrupt as a network outage, even though the actual Internet connectivity may still be working fine.

A common problem for many offices is an event where a small group of users ends up consuming a large amount of the available Internet bandwidth. In these cases other user connectivity slows dramatically. In order to prevent this from occurring the EdgeXOS platform implements safeguards in the form of our Dynamic Bandwidth Management (DBM) function which actually throttles network users which are taking up more than their fair share of the bandwidth. This service guarantees an even distribution of bandwidth across all network users, thus preventing perceived outages by end-users who would otherwise have poor connectivity due to a few heavy users.



SECURE DATA TRANSACTIONS

The EdgeXOS platform is fully PCI compliant and incorporates a built-in firewall. Using the EdgeXOS appliance customers can establish fully secure and redundant VPN connectivity with automated failover between offices and online data centers. Additionally, the EdgeXOS platform has unique security features which can divide data requests across two or more VPN tunnels in order to prevent transmission interception attacks (also known as packet sniffing).

FULLY COMPATIBLE WITH NETWORKING STANDARDS

The EdgeXOS platform can be transparently inserted in to any network environment and is highly flexible in terms of its deployment options. When in transparently dropped in to a network it essentially bridges network traffic between the LAN and WAN connections and only a single management IP is required.

LOWER OPERATING COSTS

The EdgeXOS platform the total cost of Internet connectivity by enabling energy companies to offload some data services to inexpensive broadband connections instead of high cost T1, DS3 and MetroEthernet connections. Along with the additional redundancy provided by bonding multiple broadband connections, the EdgeXOS appliance significantly improves performance for end-users while at the same time lowers monthly Internet access charges by leveraging several low cost broadband links. Each EdgeXOS appliance is scalable which means that it can easily expand as the end-users needs grow.

XROADS NETWORKS HAS WORKED WITHIN THE ENERGY INDUSTRY FOR A NUMBER OF YEARS NOW TO DEVELOP INTEGRATED SOLUTIONS TO OPTIMIZE THE END-USER EXPERIENCE AND ROI FOR EACH PROPERTY WHILE MAINTAINING STANDARDS.

MULTI-OFFICE FACILITIES

The EdgeXOS appliance can be configured to provide guaranteed levels of bandwidth for a facility. Management can set bandwidth levels based on the allocated speed for each office, i.e. Office A gets 1Mbps, while Office B gets 10Mbps. Optionally management can configure the bandwidth to allow for burst traffic until utilization reaches 'x' amount (for example 70-80%), then apply bandwidth restrictions based on the pre-determined bandwidth package selected by the end-user.

BANDWIDTH DISTRIBUTION OPTIONS:

Hard Set – Where an office is provided a fixed bandwidth amount, i.e. 1, 3, 5, 10, 100Mbps.

Priority – Where each office receives full access to bandwidth, but in the event of high utilization some offices receive priority queuing.

Flex – Where each office receives full access to all available bandwidth, but in the event of high utilization specific shaping rules apply which limit each office to their pre-defined limits based on the bandwidth package purchased.

ADMINISTRATION ACCESS

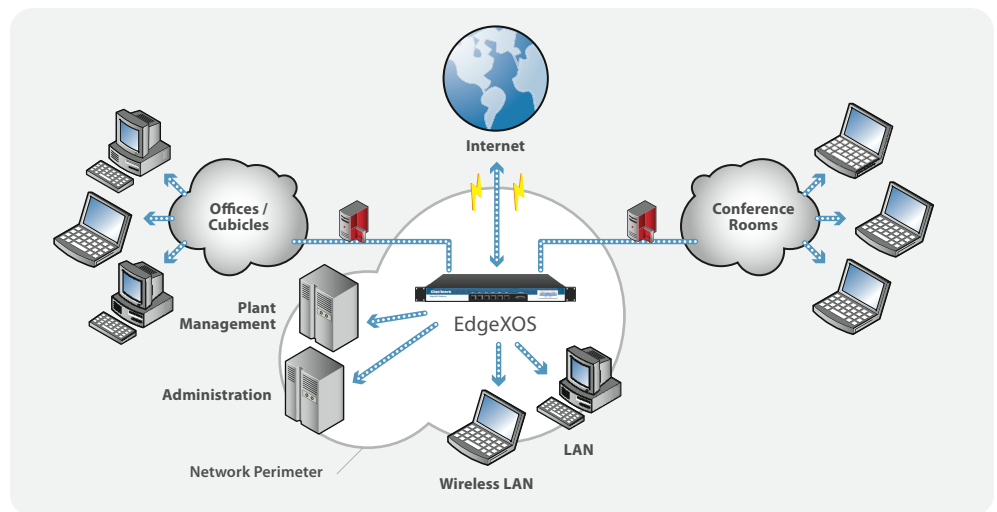
The EdgeXOS appliance incorporates a complete network security gateway which can create a firewall between the administrative network and the rest of network. The EdgeXOS also incorporates DMZ connectivity options and support for VLAN networking.

WIFI ACCESS

The EdgeXOS appliance works with all forms of wifi equipment and because we do not incorporate wifi within the EdgeXOS platform directly, we never have conflicts with other external wifi solutions. The EdgeXOS appliance is 100% compatible with and can accelerate and management traffic from all wifi solution vendors.

PUBLIC / PRIVATE NETWORKS

The EdgeXOS appliance can assist by offloading non-critical data from existing private networks to secure Internet network connections. This offloading can lower monthly costs by allowing facilities to use private network connectivity for application which require lower latency, like VoIP and video services. Additionally, the EdgeXOS appliance can provide 99.999+% redundancy by automatically failing over private data services over to secure Internet backup tunnels in the event of a private network failure, thus ensuring 24/7 access to critical data communications.



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