ELFIQ NETWORKS

CLOUD
CONTINUITY
CONNECTIVITY

Elfiq Networks
Vital for Hospitality

ELFIQ NETWORKS

Contents

Elfiq Link Balancer Overview

A Link Balancer is a network-based appliance designed to proactively manage bandwidth and multiple Internet Service Provider (ISP) circuits or private links. The Link Balancer allows simultaneous use of many circuits and supports any kind of routed link or speed. It does not require ANY change to standard router or network configurations.

An Elfiq Link Balancers primary function is to ensure internet uptime and continuity for both the business and the guest internet. By managing multiple internet circuits, the link balancer can balance the traffic from one circuit to the others; ensuring that if a circuit does fail, the traffic is rerouted to the other active circuits; safeguarding against loss of service.

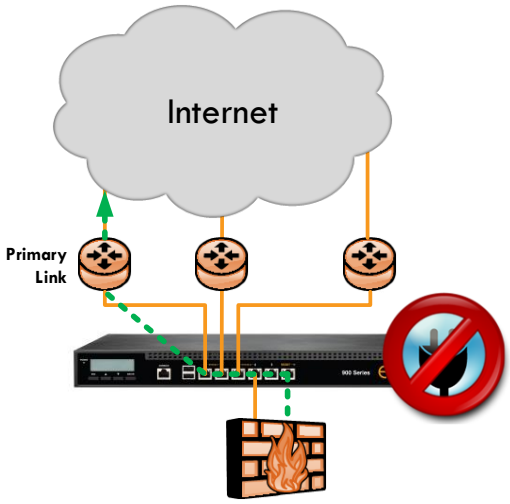
The link balancer is also used to manage bandwidth at the property; ensuring that your hotel maximizes the bandwidth available. Bandwidth control is accomplished through different tools including Time of Day Traffic Shaping, rerouting available bandwidth throughout your property to where you need it when you need it. Bandwidth control is also accomplished through Quality of Service (QoS); Layer 7 Traffic Shaping (DPI) with Elfiq's App Optimizer and PrioMap.

The Link Balancer can provide your property with the ultimate tool for not only ensuring your property never loses its internet connection; but also ensuring you have full control over it.

Internet Continuity

LAN Failsafe

This feature is another unique to Elfiq Networks' Link Balancer complete product line and by nature, a Link Balancer is a failsafe device, ensuring that bandwidth is available at all times and manage the failover process. But what if the Link Balancer itself should lose power?

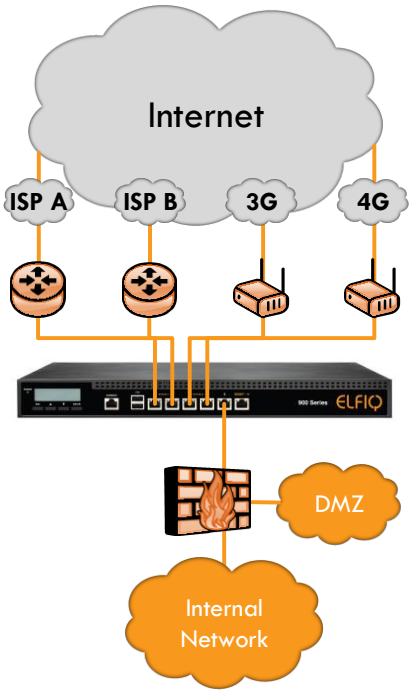


Elfiq Networks' unique Layer-2 approach enables the installation of Link Balancers without any modification to the existing network, permitting the Elfiq device to relay traffic between the primary link (link which was installed prior to the Elfiq unit) and the network perimeter devices (firewall, HSIA gateway, etc.).

All Link Balancer models provide one or multiple pairs of bonded ports to transfer IP packets so normal operations can continue until the unit can be diagnosed and powered on. When the device is in LAN Failsafe mode, the Elfiq native features are unavailable.

3G/4G Mobile Carrier Support

Elfiq Link Balancers have the capability of adding 3G & 4G mobile carrier links which can deliver significant value an internet connectivity insurance to a Hotel Property. Recently 3G & 4G connections have become fast, mature and reliable.



With an Elfiq Link Balancer, Hotels can use one or more 3G / 4G carrier links, to either augment existing internet connections or as an internet failover option when all wired carrier links are unavailable for users and critical services. In conjunction with the configuration; the link balancer can be setup to only transfer specific types of traffic or only traffic from certain users or groups.

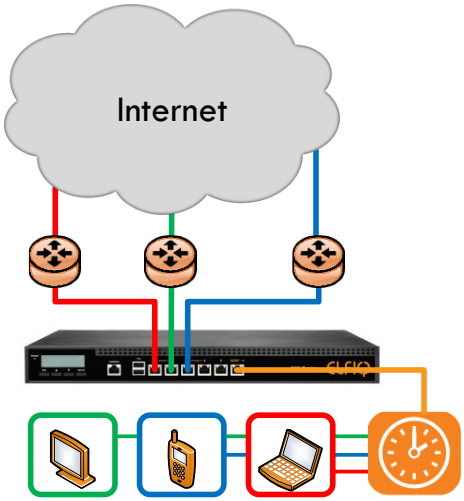
For example, should a hotel lose all their hard lined internet circuits, including fiber; cable; DSL; T1; etc. which has happened in previous conditions or natural disasters; the link balancer can be configured to stop all guest and non-essential traffic, routing only specific traffic (i.e. Admin) traffic over the 3G & 4G connections ensuring communications and business continuity.

Elfiq link balancers can also be configured to specifically only send data over the 3G & 4G connections during specific times (through our Time of Day Conditions) or to previously set limits to match monthly carrier allowances; without overage charges.

Elfiq Link Balancers can support multiple 3G / 4G Mobile Sticks in a single unit in order for organizations to maximize deployments.

Bandwidth Management

Time of Day Conditions



Elfiq Networks' Link Balancer can adjust automatically its configuration based on time-based conditions. Through this feature, bandwidth can be shifted around to different areas of the property or purposes based upon the needs of the business and the guests.

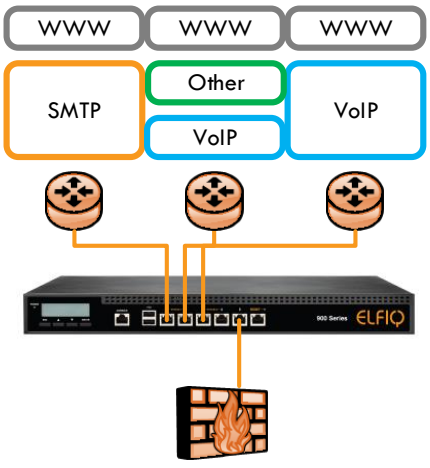
With this in mind, the property can shift bandwidth from the guestrooms to the conference center during the day, and at the end of the business day shift the bandwidth back to the guestrooms. Furthermore, bandwidth can be reallocated when not in use by the Admin Team to the guest network, augmenting additional bandwidth to the guest network that would otherwise go unused.

Additional functions of this feature include:

- Allocating bandwidth to subnetworks based on corporate priorities
- Toggle specific actions or change of configuration
- Cost-based utilisation based on time conditions to reduce costs related to burstable links or links with transfer limits
- Freeing bandwidth not used in non-peak business schedules for core activities such as site to site data replication and backup
- Distributing available bandwidth between different networks sharing a common infrastructure

Quality of Service (QoS)

The Elfiq Networks QoS feature enables hotel properties to proactively manage bandwidth allocated to services and applications, to ensure that key elements such as email, VoIP and VPN have the required bandwidth and that less desirable traffic does not capture critical throughput.



The QoS module is included in every Elfiq link balancer and enables organizations to control available bandwidth based on customer policies for ports, protocols and applications.

Once classified, the link balancer can promote, demote or block certain types of traffic. Additionally the link balancer can send different types of traffic over different links. In the provided diagram, SMTP Traffic is sent over the first circuit, while VOIP is primarily sent over the third link with overflow to the 2nd ISP. At the same time, web traffic was distributed evenly over all 3 circuits.

Should some activities consume bandwidth which should be used by more critical services such as online radio, gaming and peer to peer applications, the Elfiq Quality of Service module will restrict these activities to a specific amount of allocated bandwidth.

Layer-7 Traffic Shaping (DPI) with Elfiq's App Optimizer

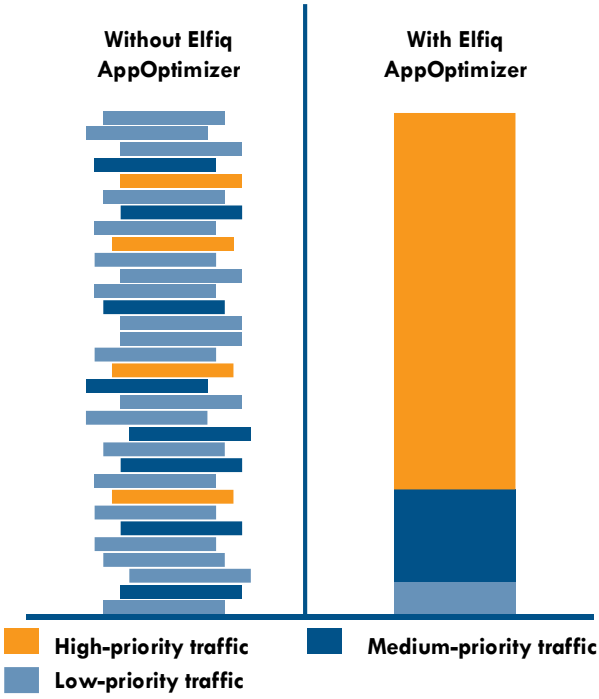
With the continuous overwhelming growth of bandwidth demands, a property faces an uphill battle providing bandwidth to satisfy the demands of their business and the guest.

This battle leaves the hotel with two possible options in relation to the ongoing need for bandwidth, either provide additional bandwidth time over time to satisfy the need, at a significant cost to the property, or take control of the existing bandwidth and fully saturate its effectiveness in your organization.

Elfiq's App Optimizer can provide the hotel with this control; brining order to bandwidth chaos; allowing the property to control what does and does not go out to the internet and in what priority.

Using world-class technology, Elfiq Networks has developed the Elfiq AppOptimizer, designed to give organizations full control over their existing and future bandwidth, guaranteeing key applications such as VOIP applications, get priority treatment and undesirables such as peer-to-peer file transfers or games are limited or no longer permitted.

The Elfiq AppOptimizer is an add-on, subscription based module for the award-winning Elfiq Link Balancer product family which provides application-layer deep packet inspection (Layer-7), classification and control including Mobile, Social Networking, P2P, Instant Messaging, File sharing, Enterprise and Web 2.0 applications.



The Elfiq AppOptimizer is able to proactively manage over 1025 applications in the following categories:

- Collaboration
- Database
- File sharing
- File transfer
- Games
- Mail
- Messaging
- Network monitoring
- Networking
- Peer to peer
- Proxy
- Remote access
- Social networking
- Streaming media
- VPN and tunneling
- Web services

PrioMap

One of the challenges we face within hospitality guest internet, is the ability to offer and deliver tiered guest internet services; which is the ability for a property to offer a guest different internet options, possibly for purchase (for example: 10 Mbps of service available for purchase; 5 Mbps of service available to loyalty guests; free guest internet at 256 Kbps). Additionally, a property wants to ensure that there is still enough bandwidth for business requirements; including administration or front desk systems.

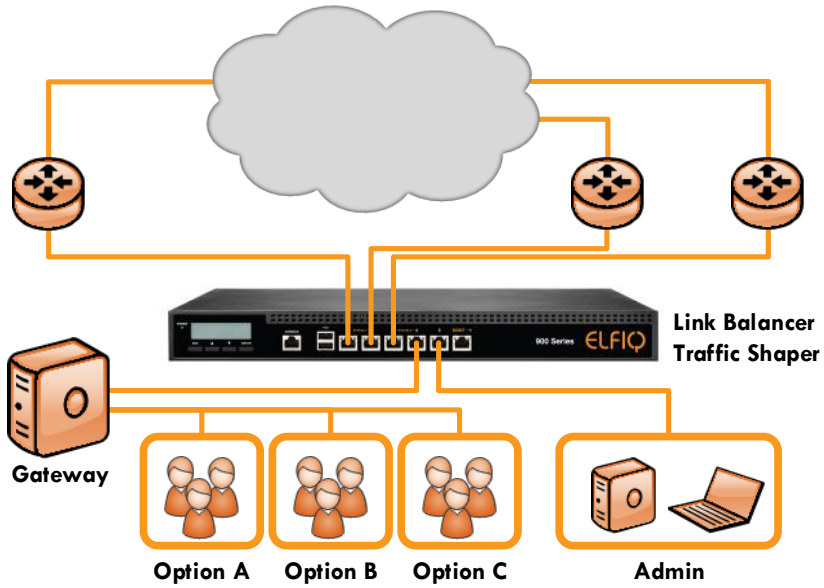
Today, the majority of tiered internet services are being controlled and delivered wholly within the guest internet gateway by increasing or decreasing the Quality of Service (QoS) limits. Although this increases the cap of how much bandwidth a guest can access at a time; if the internet link is already fully saturated; a guest who purchased a higher bandwidth tier (i.e. 10 Mbps or 5 Mbps) is not going to get any more bandwidth or higher priority of bandwidth than a guest who selected a lower tier such as the free to guest option at 256 Kbps. This leaves the guest unhappy with their tiered internet purchase; generating a call to the internet support line; and creating a flurry of activity involved to credit a guest for their recent purchase.

Enter the solution: Elfiq PrioMap

The PrioMap feature lets a device with more "internal network" knowledge, such as an Internet Gateway, mark IP packets with Differentiated Services Code Point (DSCP) to instruct the Link LB to override its default configuration and change the way the sessions are processed. Potential for Link LB configuration override include: load balancing algorithm, link selection, QoS queue, Slice ID. (Load balancing and Link Selection can have an effect only during session establishment).

By working in conjunction with a Guest Internet Gateway which can properly tag the different internet tiers, Elfiq's PrioMap feature can continue the prioritization of the Guest Internet from the gateway and out through the proper internet link; prioritized over other traffic on the network with our built in QoS; according to the internet priorities of the property.

In the below example, guest traffic is tagged by the internet gateway as A, B & C; and are then prioritized over the available links in that same order. Admin traffic is also prioritized accordingly.



Pricing and Technical information

	LB-800E	LBX700	LBX900	LBX2600
Hardware unit	2 995.00	3 295.00	4 995.00	8 995.00
Unit Remote Configuration	595.00	595.00	995.00	1 195.00
Basic 12 months*	595.00	695.00	795.00	1 095.00
Standard 12 months*	795.00	895.00	995.00	1 695.00
Gold 12 months*	1 495.00	1 595.00	1 695.00	2 495.00
AppOptimizer 12 months*	1 295.00	1 595.00	1 795.00	3 495.00
AppOptimizer Remote Configuration	395.00	395.00	395.00	595.00
Number of ISP Links	8	10	16	64
Throughput (Upload **or** Download)	240Mbps	300Mbps	350Mbps	1Gbps
Total Throughput (Upload **and** Download)	400Mbps	600Mbps	500Mbps	2Gbps
Total Throughput (With AppOptimizer)	100Mbps	150Mbps	300Mbps	600Mbps

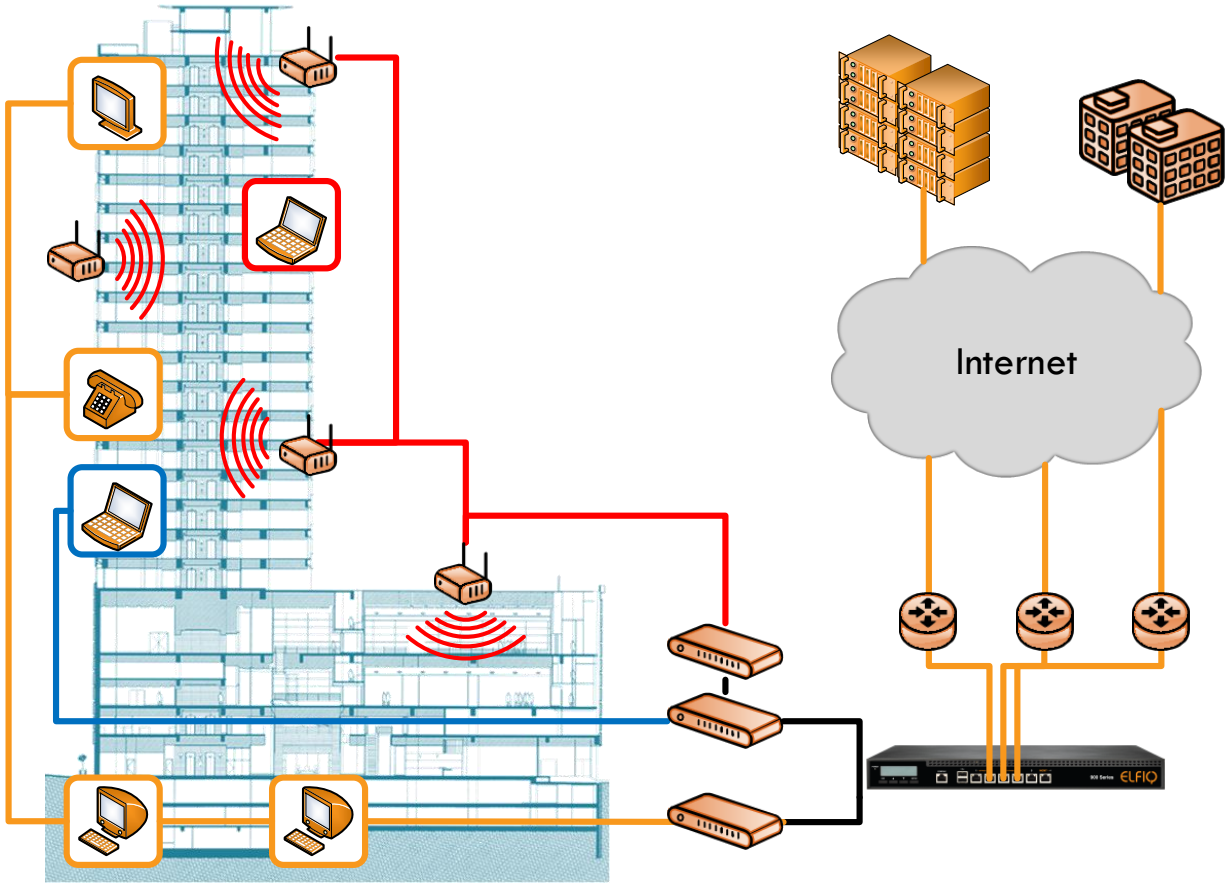
* Maintenance programs and AppOptimizer option are also available for a period of 36 months at a discounted price.
** Additional discounts are available for bulk purchases

Elfiq Networks also offers other products and features. To see the full product line, please visit www.elfiq.com/products.

To know more about our additional features, please visit http://www.elfiq.com/features.

Deployment scenario for Hospitality Clients

Guests consume significant amounts of bandwidth while travelling on business or leisure, and the number of devices they carry and expect to connect has grown significantly, to include laptops, video game consoles, smartphones and tablet/slate computers (Apple iPad, Android devices, etc.). On the business side, most internal operational systems like PMS, accounting, credit card processing, entertainment systems and reservations management will be connected to the Internet in one way or another. IP-based entertainment systems will also consume bandwidth and require uptime.



Bandwidth is now a key amenity in a hotel, and HSIA needs will keep on growing as the Internet becomes more media-rich every day and guests bring more connected devices while expecting “at home” connectivity performance. Elfiq Networks products and features can help organizations to outline a clear and efficient strategy for HSIA access while keeping guest satisfaction scores high and costs under control and having in-house business continuity options.

Elfiq Networks Hospitality Clients

About Elfiq Networks

With today's growing Internet demands, Elfiq Networks enhances network performance and business continuity through innovative link balancing, cloud computing and bandwidth management technologies. Using Elfiq Networks Link Balancers, companies can leverage simultaneous ISPs, mix public and private links for added flexibility, seamless failover, increased throughput and smarter WAN path selection. Every day, local and global organizations of all sizes and verticals rely on Elfiq Networks' Link Balancers and advanced network solutions.

For more information on Elfiq Networks' products and technologies, please contact:

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