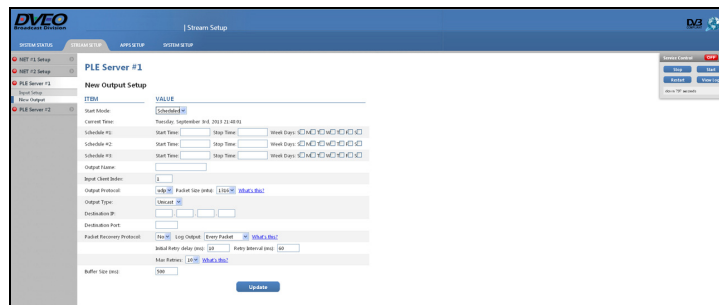


# DOZER™ ARQ: LIC

Software Applet for Packet Loss Recovery for UDP Traffic Congested Networks. This Software Implements DVEO®'s Patented Technique for Creating Adjustable Buffers and Tagging Packets, Tunneling Between End Points, and Presenting Packets in a Good Order. This Applet Works with Any Ethernet Port and Requires Only Some Extra Packet Buffer Space on the Host Memory. It Interoperates Perfectly with All IP Switches and Routers. Fundamentally it Mimics Some of the TCP Protocol Even Though Following UDP Traffic Signaling. DOZER ARQ (Automatic Repeat Request): LIC Offers Great Advantages to Companies Building Most Any Video Distribution Products, File Transfer Software Applications, VoIP Appliances, or Managed or Conditioned Lines and Networks.

## Features

- Addable feature to Proxicaster™, MultiStreamer™, Gearbox™, Brutus™, Gearbox II™, and D-Streamer™ product lines
- Automated Packet Recovery: Unlike FEC protocols, it only sends extra data when packet loss is detected by the DOZER receiver and reported to the DOZER sender
- Protocol completely corrects packet loss and jitter in transmission path
- Underlying traffic is AES128 encrypted
- Typical inputs/Outputs: 2 each Gig/E ports
- Supports IP UDP unicast and multicast, in or out
- Uses packet retransmission methodology developed by DVEO®
- Ships with designated IP addresses
- Will not examine the transport stream. It merely forwards all packets.
- IP address and ports can be remapped to different ones if necessary in the remote network
- Configurable destination port on listener for firewall traversal
- Can be configured for point-to-point or point-to-multipoint functionality
- Supports up to four destinations in primary/backup or split transmission configuration for redundant or load balanced setups
- Each device can be configured as a sender, a receiver, or both
- One DOZER transmitter can send 50+ channels to 32 DOZER receivers
- Each receiver device can output UDP on a local network to one or many different devices using second Ethernet port
- DOZER Transmitter-Receiver connections are authenticated with user name and password for additional security
- Performance certified with WAN Emulator Appliance testing



## RELIABLE LIVE MEDIA OVER IP



## Overview

We all know that the Public Internet has improved dramatically all over the world, but especially in the Western World. We have all become voracious consumers of bandwidth by using video sites like YouTube, Hulu, CNN, and other streaming services. The Internet has largely kept up. But like in any jungle, there are thin and thick areas to penetrate through. When the jungle gets thick the traffic slows down.

Despite the abundant bandwidth, mission critical video traffic has been relegated to dedicated lines, services, or CDNs. This is because of fear, uncertainty, and doubt. Our engineers recently developed a “technique” that allows video traffic to consistently bulldoze through slow and congested routers when UDP protocol is employed. Basically – we send a minimal set of unique signaling packets along with original packets. In the interest of security we encrypt all traffic with AES128.

The DOZER ARQ: LIC “bulldozes” through routers and enables IPTV operators and Over The Top video providers to improve their video distribution by enabling smooth low delay High Definition and Adaptive video streaming. It's the ideal technology for CDN operators or mobile network operators who are deploying vast networks across their own and others' backbones. The DOZER ARQ: LIC optimizes IP capacity utilization by managing and optimizing video packet throughput.

## Applications

- Streaming live news and sports programming over congested LANs or WANs
- Backup to Dedicated IP for Video Delivery with delivery over Public Internet, including studio-to-transmitter links
- Replacing satellite backhaul and dedicated point-to-point lines with DOZER at end points
- Protecting point to point traffic with strong AES128 encryption
- Eliminating packet loss across Metro WDM and other long haul backbones
- Point to Multipoint Content or Data Delivery



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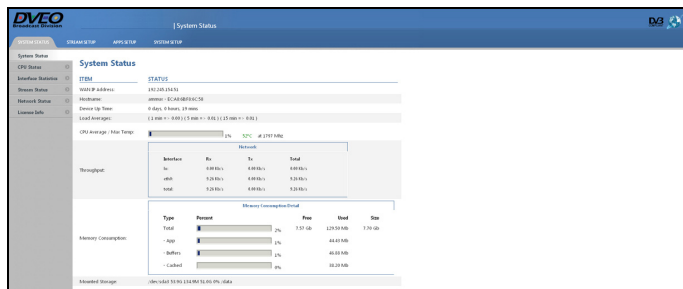
Tel: 858-613-1818 Fax: 858-613-1815

[www.dveo.com](http://www.dveo.com)

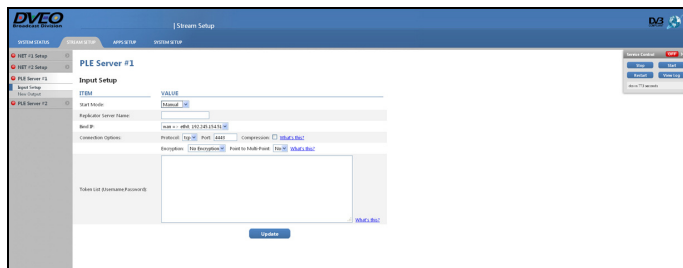
## Benefits

- Smooth Error Free Delivery of Compressed Video Across Public Internet with Guaranteed Upload and Download
- Transits Most Firewalls
- Saves Money versus Private Point to Point Connections
- Can be added to most of our products and others' products
- All Content is Encrypted with AES128 between units
- Linux® based reliability
- Can eliminate need for satellite delivery of point-to-point

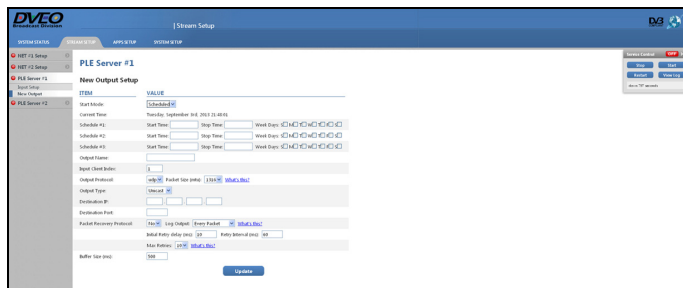
## Sample of GUIs



System Status



Input Setup



Scheduled Output Setup

## Ordering Information

DOZER ARQ: LIC  
 Also Available:  
 DOZER Rack IP/IP – DOZER ARQ: LIC in a rackmountable  
 1 RU system (typically sold in pairs)  
 Compact DOZERbox IP/IP + AES128  
 (typically sold in pairs)

## Specifications

### IP Inputs: Any Digital Bitstream Connection Between DOZERS

IP protocols:	UDP with AES128
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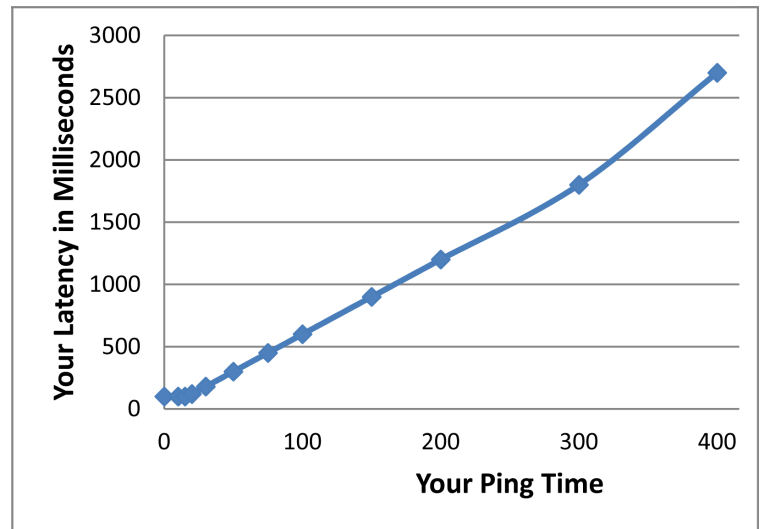
### Administration

Access:	Web interface SSH (Secure command line interface), with passwords
SNMP:	Monitoring and alerts
UPTIME™:	Optional Failover software

### Other

Latency:	About 6 times the Ping Time
Bandwidth Overhead:	7% typical, but depends on network issues

## Chart of Ping Time vs. Latency



## Licensing Pointers

1. We provide SDK with a mix of source and object code.
2. The DOZER application affects the network interface driver of the host. It will not affect any other function of the host.
3. We will rewrite your network driver if needed.