

XipLink Software Optimization Products

Enhance user experience and network efficiency while securely scaling hybrid networks

XipLink technology delivers the most advanced satellite and wireless optimization, assuring the best possible 'goodput' at a reasonable cost. The technology has been perfected over decades of intense and dedicated focus in the Wireless Link Optimization environment and includes multiple mechanisms that operate at several layers of the networking stack.

The XipLink Optimization Software (XipOS) can be provided as a software virtual network function (XV prefix) that scales from 1,000 to 300,000 TCP sessions on a desktop or 1U platform. Aggregate throughput beyond 2Gbit/s is delivered via a highly-scalable virtualized blade server. XipOS software is deployed as a virtual function and is remotely managed using a user-friendly Graphical User Interface or can be centrally managed via XipLink central management software (XMS).

Conveniently integrated hardware appliances are available for projects where no Edge CPE is available. These appliances are identified by the XA prefix. XipLink also provides high speed, fully integrated appliances for deployment to satellite ground stations or hybrid cloud environments.

Hybrid Intelligent Link Bonded and Balanced Network



Optimizing User Experience and Capacity of LAN/MPLS/IP/TCP/UDP over wireless

XipLink devices work over any wireless, wireline or hybrid network including the following network technologies;

- VSAT and Access Networks (TDMA / SCPC / Mesh)
- Terrestrial Wireless (WiMax / Microwave / Extended WiFi)
- Cellular / LTE (2.5G / 3G / 4G / 5G Interconnect and Backhaul)
- Terrestrial (Point-to-Point and Point-to-Multipoint)
- MSS (Inmarsat®, Iridium® and equivalent)

XipLink Optimization System (XipOS)

SCPS-TP Protocol Acceleration

Fills the wireless link to capacity

- SCPS-TP based TCP acceleration
- Fixed, Dynamic, & Delay-Based Rate Control
- Ack Frequency Reduction with SNACK

Internet Optimizations

Improve QoE for browsing and video streaming

- Faster page start and finish for HTTP & HTTPS
- Video plays earlier, delivers consistent quality
- Sustain 1080p and 4K UHD video streaming

Advanced Quality of Service (QoS)

Shape the wireless link bandwidth

- Intelligent traffic shaping
- Hierarchical QoS classes
- Automatic estimation of link speed & quality
- Configurable committed & maximum rates

Header and Payload Data Compression

Exceeds the wireless link bandwidth

- Dramatic bandwidth gain, as high 10% - 30%+
- Packets Per Second (PPS) benefits for VoIP, VoLTE, Voice Apps using XipLink Real Time (XRT)

XipLink Link Balancing, Bonding & Steering

Dramatic increase in capacity with reliability

- Increase capacity and/or reliability
- Single stream scaled over multiple paths
- Steer selected traffic to specific links
- Session persistence

Advanced Cellular Compression (ACC)

Controls growth in cellular TCP & UDP traffic

- Supports 2.5G, 3G, 4G/LTE, 5G & Wi-Fi hotspots
- 30%+ traffic reduction and 100 Mbps+ TCP

Advanced Protocol Support Features

Optimizes unique formats and tunneled traffic

- Transparent VLAN support
- GRE and GTP tunnel traffic optimization
- VXLAN and MPLS support

IPSec with CMPv2

Optimizes/Accelerates traffic inside VPN tunnels

- Decrypt/optimize/encrypt (DOE) approach
- Compliant with 3GPP standards for MNO's
- Encryption up to AES-256

XipLink Byte Cache

Dramatic data reduction for multi-pass traffic

- Effective on non-encrypted repeated content
- Up to 80% reduction on applicable traffic types
- IP-layer: Effective for both TCP and UDP traffic



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XipLink Appliance Range

Integrated Appliances	Software Images ¹	Hardware Platforms ²	Aggregate Bitrate	Maximum Optimized TCP Sessions ³
XA-1K	XV-1K	XH-1	6 Mbps	1,000
XA-2K	XV-2K		10 Mbps	2,000
XA-4K	XV-4K		20 Mbps	4,000
XA-6K	XV-6K	XH-10	30 Mbps	6,000
XA-10K	XV-10K		50 Mbps	10,000
XA-20K	XV-20K		100 Mbps	20,000
XA-30K	XV-30K	XH-100	200 Mbps	30,000
XA-60K	XV-60K		400 Mbps	60,000
XA-100K	XV-100K		650 Mbps	100,000
XA-150K	XV-150K	XH-1000	1.0 Gbps	150,000
XA-200K	2 x XV-100K		1.3 Gbps	200,000
XA-300K	2 x XV-150K		2.0 Gbps	300,000

¹Software upgradeable in field within a platform group

²Refer to Platform Datasheet

³Sessions above this limit are maintained and passed through unoptimized

XipOS Software Features

User Experience	TCP Acceleration using the SCPS-TP standard, scalable TCP up to 1Gbit/s per XV image, fast start, congestion controls, acknowledgment frequency reduction, selective negative acknowledgement, DNS caching
Optimization Features	Packet Coalescing with Header Compression, Stream Compression, Byte Caching
Transparent Tunnel Acceleration	Accelerate TCP embedded in tunnel technologies: Transparent GTP (4G and 5G), GRE, VLAN, MPLS and XipLink Lightweight Tunnels (XLT)
Layer 2 Support	Layer 2 over Layer 3 (VXLAN) and VLAN Tagging
Traffic Steering with Link Balancing & Bonding	OverSite traffic steering policies steer and overflow unique groups of traffic onto one or more links, based on link status, protocol, IP source and destination address and subnets, port numbers, DSCP mark, VLAN ID, VLAN priority and MPLS label. Links are actively monitored for congestion and buffer bloat. Sessions are smoothly moved to alternate links, within seconds of a link degradation or failure. Bandwidth Bonding uses the available bandwidth of all links, for any IP traffic, including UDP and TCP/IP.
Advanced QoS	Class based weighted fair queuing (CBWFQ), Min/Max/Guaranteed Bandwidth setting, Bandwidth Pooling, Allow/Deny, Selective Optimization
Security	VPN / IPsec, Pre-Shared Secrets, X509 Certificates, CMPv2, IPsec Decrypt-Optimize-Encrypt (DOE) supports acceleration of encrypted traffic
Traffic Types Supported	IPv4, IPv6, GRE, MPLS, VLAN, GTP
Network Mode	Bridge Mode, Router Mode
IP Routing	Static Routes, BGP, RIP, OSPF
Redundancy/Resiliency	LAN By-Pass, Rapid STP, CARP/VRRP, Multiple OS partitions

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