SKYLAB

Skylab Transport Accelerator

High Performance Data Delivery Enabling Global Scale Data Logistics Service

Accelerates Data Delivery with SkyLab Transport Accelerator (STA)

STA accelerates traffic by analysing traffic & routing conditions in real time to find the fastest route between the data source and the destination even on 2G/3G/4G, satellite and many types of IoT radio networks. STA reduces network latency , increases throughput, optimizes transport layer performance and reduce overall network congestion problem.

Addressing industry challenges

BANDWIDTH VARIATION
- Limited radio spectrum
- Limited base-station capability
- Constantly changing bandwidth
- Propagation delays

PACKET LOSS
- Noise Interference by other devices
- Congestion
- Retransmission

CONGESTION
- Lack of protocol support for constantly changing situation
- Snow-ball effect by intermittent failure of the service
- End to End Latency

Use Cases

LEASED LINE OPTIMIZATION
In addition to wireless networks, STA can optimized fixed line connections as well. STA addresses a number of traditional protocol weaknesses to accelerate and solidify your service without upgrading bandwidth.

SATELLITE OPTIMIZATION
While convenient, Satellite experiences can often be frustrating due to high latency, high packet loss and limited bandwidth. STA can improve user experience by accelerating connectivity in a cost-effective way, without increasing bandwidth capacity.

3G/4G OPTIMIZATION
A fast and predictable user experience is essential for any successful application. Not only will STA accelerate your applications, it will also provide users with the consistent experience they expect.

HIGH-SPEED VPN
Traditional VPNs over public internet are often unstable and unreliable. By integrating VPN technologies together with STA, users can achieve service comparable to leased lines but without the cost.

LIVE VIDEO STREAMING OPTIMIZATION
Reduce traditional protocol pitfalls of live video streaming through STA's Adaptive Congestion Control and Automatic Optimization features. Bandwidth capacity is very likely not the problem or solution to your troubles.

APPLICATION ACCELERATION
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KEY FEATURES

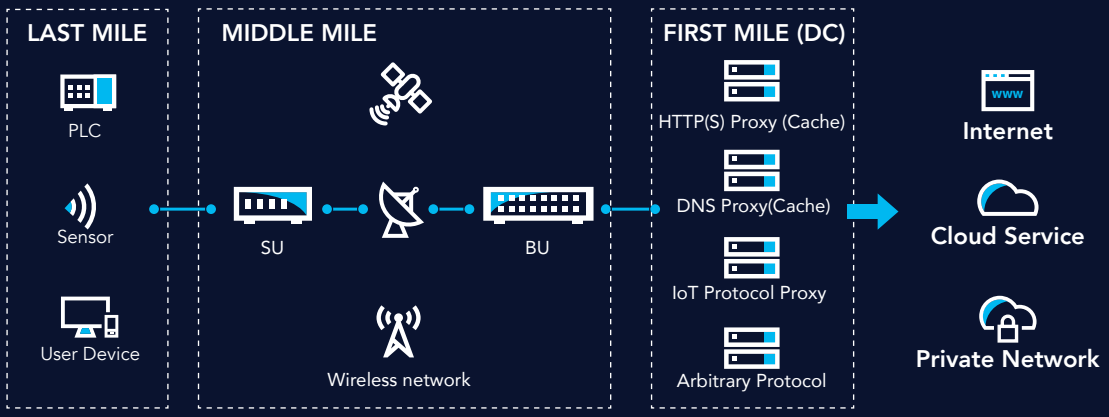
STAP (SkyLab Transportation Acceleration Protocol)	SkyLab's proprietary transport protocol that provides higher throughput and lower latency.
Improved Network Performance	Provides higher through-put and lower latency.
Transparent Turn Reduction	Reduces the unnecessary number of back-and-forth transfer between both ends.
Transport Layer Acceleration	Optimizes transport layer performance to address TCP's three-way handshake, slow start and excessive retransmission due to packet loss and congestion, and packet coalescing and compression.
Adaptive Congestion Control	Optimized congestion control mechanism for mobile/ radio networks that reduce the impact of packet loss and congestion problem.
Secured End to End Encryption	Protecting data integrity and confidentiality by authenticated encryption method using Diffie-Hellman and AES-128-GCM and AES-256-GCM cryptographic algorithms, ensures safe end-to-end secure data delivery.
Network Change Detection & Automatic Optimization	Detect changes of type of network and optimize STAP variables accordingly.
Network Connection Switching	Seamless switchover between any connected network interface, either automatically or manually, avoiding potential network failures and loss of data.
Multipath Delivery	Scheduling and delivering accelerated traffic simultaneously over multiple networks and paths for improved performance.

Model Specifications



			STA-SX-2200	STA-SC-3000	STA-MZ-9500
HARDWARE	System	CPU / Core	NXP iMX7D Series Multicore Arm® Cortex®-A7	Intel Celeron J1900 2G--2.41GHz	Intel Xeon E3-1240v6
		Memory	1GB	2GB	32GB
		Storage	8GB EMMC	16GB	240GB
	Networking	RJ45 Ports	2	4	2
		RJ45 By-pass ports	2	0	Optional
		WiFi	Optional	No	No
		BLE	Yes	No	No
		LTE 4G	Yes	No	No
	I/O Interface	Console	UART	Yes	Yes
		USB	1x USB Micro 2.0 OTG	2 x USB 2.0	2 x USB 2.0, 2 x USB 3.0
	Security	TPM Chip	No	No	Yes
		Watchdog Timer	Yes	Yes	Yes
	Power	Input	12V DC/ 2.5A	12V-3A	100 - 240Vac/6.0 - 3.0A/ 50-60Hz
	Environmental Parameters	Operating Humidity (RH)	10% to 95% (non-condensing)	10% to 95% (non-condensing)	8% to 90% (non-condensing)
		Operating temperature	0°C to 50°C	0°C to 50°C	10°C to 35°C (50°F to 95°F)
	Compliance	Certification	CE	FCC, CE, CCC	UL/cUL/CB/CE/BSMI/CCC Platinum Level Certified
	Form factor	Form factor	Small Form Factor	Fanless with metal casing	Rack Mounted Server
		Dimensions (WxHxD)	70 x 100 x 25mm	13.4 x 12.6 x 3.4 cm	437 x 43 x 429 mm
		Weight	1kg	0.8 kg	12.15 kg
SOFTWARE	Monitoring	Connection stats	Yes	Yes	Yes
		Statistics for accelerated services	Yes	Yes	Yes
		Network interface statistics	Yes	Yes	Yes
		System dashboard	No	No	Yes
		SNMP v1/v2/v3 Trap	Yes	Yes	Yes
	Networking	Number of clients (IP address)	255	255	5000
		Maximum session per connection(Multi-plexing)	3000	3000	4096
		Concurrent session	65K	65K	130k
		L7 CPS	65K	65K	600K
		Number of accelerators	4	4	No limit, only licensing related
		Number of Accelerated Sevices	8	8	No limit, only licensing related
		Accelerated through-put	120Mbps	120Mbps	1Gbps
		QoS through-put	120Mbps	120Mbps	1Gbps
		Support for back-end system	Yes	Yes	Yes
		DHCP server / client	Yes	Yes	Yes
		Bridge mode	Yes	Yes	Yes
		WCCP	Yes	Yes	Yes
		Policy Based Routing	Yes	Yes	Yes
		VLAN(4096)	Yes	Yes	Yes
		By-Pass	Yes - 1 pair	None	Optional

Use Case Scenario



Additional Features

- **Virtual Inpath Interface -** Dealing with multiple customer network segments.
- **Virtual LAN -** Supports 802.1Q VLAN tagging to separate user traffic.
- **Service Acceleration -** Easy to accelerate a service based on port, source / destination network and VLAN scope.
- **SNMP -** SNMP Version 1, 2c & v3 are supported for monitoring.
- **WCCP Version 2 -** Supports Web Cache Communication Protocol content-routing protocol that works with CISCO devices to provide a mechanism to redirect traffic flows in real-time without deploying STA MU inline the network.
- **Management -** Both the Web Interface & CLI are available for configuring the device.

Solutions overview

IoT is revolutionizing and changing the way we make decisions both at the macro and at the micro level every minute of our day. From building smart homes to smart and green cities IoT solutions need a robust and always available Infrastructure. SkyLab has designed a upstream to downstream data integration and technology solution - Data Logistic Cloud (DLC) that can drive synergies and network effects through improved Security, Latency and Scalability across multi-generations of control systems over a large scale network.

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IGX Series: A new breed of IoT gateway with a modular design for both physical device connectivity and network backhaul capabilities. Powered by an advanced multi-protocol aware middleware allowing you to interface with any kind of IoT data source and destination. This allows IGX to scale efficiently and rapidly to support billions of devices while keeping costs low

SkyLab's Multi-access Edge Computing, or MECs, are designed to be deployed at the edge along with your other devices and systems, either as a physical or virtual appliance. With additional computing, storage and processing power, using the latest in containerisation technology to ensure operability for whichever application you choose to run and however you choose to develop it. Running your applications at the edge means you can offload processing, network usage and time from the cloud, complimenting your existing infrastructure.