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 reduces 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**
  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.

**KEY FEATURES**

- **STAP (SkyLab Transportation Acceleration Protocol)**
  - Improved Network Performance
  - Transparent Flow Reduction
  - Transport Layer Acceleration
  - Adaptive Congestion Control
  - Secured End to End Encryption
  - Network Change Detection & Automatic Optimization
  - Network Connection Switching
  - Multi-path Delivery

SkyLab’s proprietary transport protocol that provides higher throughput and lower latency.

Provides higher throughput and lower latency.

Reduces the unnecessary number of back-and-forth transfer between both ends.

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.

Optimized congestion control mechanism for mobile radio networks that reduce the impact of packet loss and congestion problem.

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.

Detect changes of type of network and optimize STAP variables accordingly.

Seamless switchover between any connected network interface, either automatically or manually, avoiding potential network failures and loss of data.

Scheduling and delivering accelerated traffic simultaneously over multiple networks and paths for improved performance.

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**Model Specifications**

<table>
<thead>
<tr>
<th>Model</th>
<th>CPU / Core</th>
<th>Memory</th>
<th>Storage</th>
<th>USB</th>
<th>Security</th>
<th>Power</th>
<th>Environmental Parameters</th>
<th>Compliance</th>
<th>Form factor</th>
<th>Dimensions (WxHxD)</th>
<th>Weight</th>
<th>Monitoring</th>
<th>Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>STA-SX-2200</td>
<td>NXP MX70 Series MultiCore Arm® Cortex®A7</td>
<td>1GB</td>
<td>8GB eMMC</td>
<td>1x USB Micro 2.0 OTG</td>
<td>TPIN Chip</td>
<td>Input</td>
<td>12V DC ~ 2.5A</td>
<td>0°C to 50°C</td>
<td>Certification</td>
<td>CE, FCC class B, CE, BSMI, CCC, Platinum Level Certified</td>
<td>255 x 100 x 25mm</td>
<td>2.5 kg</td>
<td>Yes</td>
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<tr>
<td>STA-MA-4030</td>
<td>Intel Cabaron J1900DGB</td>
<td>4GB</td>
<td>16GB</td>
<td>1x USB 2.0, 1x USB 3.0</td>
<td>Watchdog Timer</td>
<td>AC 100-240V/50-60 Hz</td>
<td>0°C to 50°C</td>
<td>Operating temperature</td>
<td>Form factor</td>
<td>Small Form Factor</td>
<td>231.9 x 44 x 152 mm</td>
<td>12.15 kg</td>
<td>Yes</td>
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<td>STA-MZ-9500</td>
<td>Intel Xeon E3-1240v6</td>
<td>32GB</td>
<td>240GB</td>
<td>2x USB 2.0, 2x USB 3.0</td>
<td>Yes</td>
<td>AC 100-240V/50-60Hz</td>
<td>0°C to 35°C</td>
<td>Operating temperature</td>
<td>Form factor</td>
<td>Rack Mounted Server</td>
<td>437 x 43 x 429 mm</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Network**

- **Accelerated throughput**
  - 120Mbps
- **QoS throughput**
  - 120Mbps
- **Support for back-end system**
  - Yes
- **DHCP server / client**
  - Yes
- **Bridge mode**
  - Yes
- **WCCP**
  - Yes
- **Policy Based Routing**
  - Yes
- **VLAN (4096)**
  - Yes
- **1Gbps**
  - Yes
  - Yes
  - Yes
  - Yes
  - Yes
  - Yes
  - Yes
  - Yes

- **ByPass**
  - Yes
  - Yes
  - Yes
  - Yes
  - Yes
  - Yes
  - Yes
  - Yes

- **Local Web Cache**
  - No
  - No
  - No
  - No
  - No
  - No
  - No
  - No

- **VPN (IPSec KEV2)**
  - No
  - No
  - No
  - No
  - No
  - No
  - No
  - No
**Use Case Scenario**

**LAST MILE**
- PLC
- Sensor
- User Device

**MIDDLE MILE**
- Wireless network

**FIRST MILE (DC)**
- HTTP(S) Proxy (Cache)
- DNS Proxy (Cache)
- IoT Protocol Proxy
- Arbitrary Protocol

**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 containerization 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.