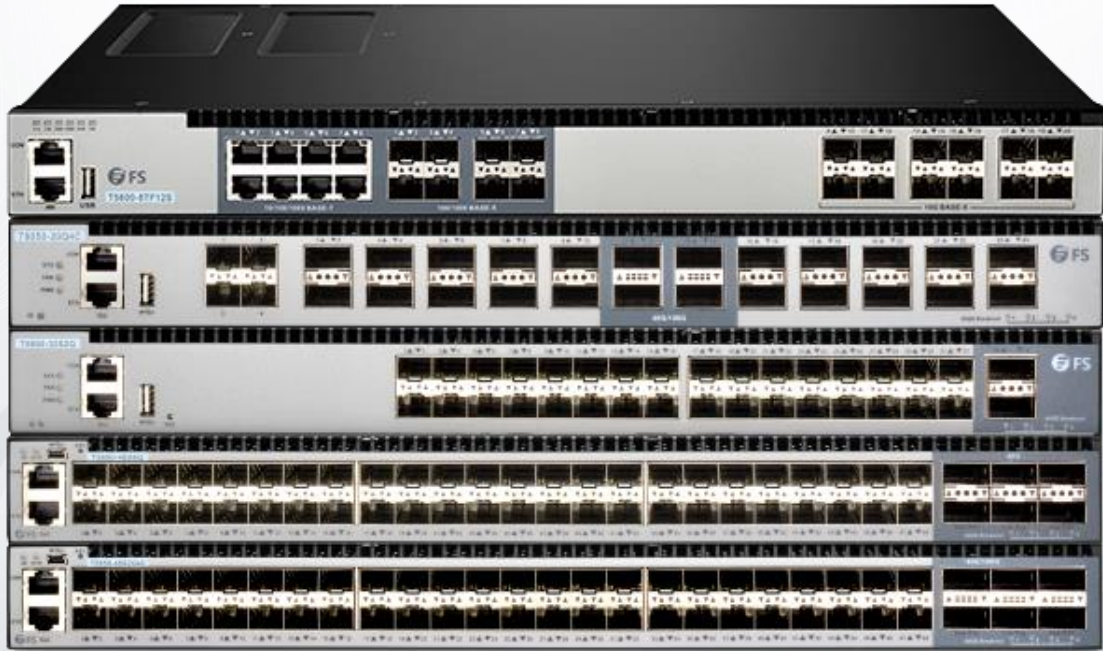


# FS Network Packet Brokers (NPB) Visibility and Security

Models: T5850-32S2Q, T5850-48S6Q, T5850- 48S2Q4C, T8050-20Q4C, T5800-8TF12S



## Overview

The Network Packet Broker (NPB) is high performance Pizza box switches to meet next generation network visibility requirements, for delivering network traffic data to out-of-band and inline network and security analysis tools.

FS Network Packet Broker (NPB) supports various of Network Packet Broker (NPB) functions, including any to any port aggregation and replication, load balancing, tunnel de-encapsulation, traffic filtering and packets editing. In addition, the system offers wide set of capabilities for management needs, as WEB GUI, Open API, SNMP etc.

## Benefits

- Supports 1G/ 10G/ 40G/ 100G Networks
- L2~L4 Traffic Aggregation, Filtering, Replication, Load Balancing
- Time Stamps, Editing VLAN of Packets, Packet Truncation, Header Modification
- Support Web GUI, CLI, Telnet, SNMP, SSH, JSON-RPC
- 1+1 Hot-Swappable Power Supplies and 3+1 Smart Fans

## Primary Features And Benefits

### 1. Network Packet Brokers (NPB) Function Highlights:

**T5850-32S2Q, T5850-48S6Q, T5850-48S2Q4C,  
T8050-20Q4C**

**T5800-8TF12S**

Provide 1G/ 10G/ 40G/ 100G ports  
 Up to 2.4Tbps switching capacity  
 Cut-Through switching mode  
 Flow aggregation / copy / distribution  
 Support packet truncation  
 Support VxLAN decryption  
 Support GRE/NVGRE encryption and decryption  
 Support M:N traffic aggregation and replication.  
 Support Ingress and Egress filter.  
 Support time stamping and Vlan port tagging  
 Support ERSPAN encapsulation  
 Support Vxlan encapsulation  
 Support to match MPLS packets and support MPLS decapsulation  
 Support to match PPPOE packets and support PPPOE decapsulation  
 Support to match PBB packets  
 Support IPFIX  
 Support UDF  
 Support port-group  
 Support Hash based load balancing, session stickiness  
 Support 5-tuple (ipsa, ipda, ip src port, ip dst port, ip protocol), IP truncation analysis, User defined fields(UDF) filtering  
 Supports console, Tenlet, SNMP, Syslog, SSH, Open API and WebUI management  
 Support to telnet other devices via management interface  
 Support to calculate the md5sum of a file  
 Support to operate the device with IPv6 address of the management interface  
 Support to set the banner of the device  
 Support Strip header for all packets  
 Support redundant power supply.  
 Low power consumption

Provide 1G Base-T/1G Base-X SPF/10G SPF+ ports  
 Support Flow aggregation / copy / distribution  
 Support M:N traffic replication.  
 Support Ingress and Egress filter.  
 Support Hash based load balancing to ensure session integrity flow output  
 Support Round Robin style load balancing  
 Support IP quintuple group (ipsa, ipda, ip src port, ip dst port, ip protocol), IP truncation analysis, User defined fields(UDF) filtering  
 Support editing the IPv6SA/IPv6DA/ IPDA/IPSA and MACDA/MACSA and VLAN of packets.  
 Support TACAS+ authentication  
 Supports console, IP, SNMP, SSH, Open API and WebUI management  
 Support port-group  
 Support redundant power supply.

### 2. System Design for Green and Energy Saving

Intelligent FAN adjustment and real-time power consumption monitoring technology are provided for the cost of maintenance redundancy and help to build a green and energy saving data center.

### 3. High Reliability

FS Network Packet Brokers (NPB) are powered by Hot-swappable power modules which supports AC/DC 1+1 redundancy; Fans support N+1 redundancy; Support Real-time environment monitoring technology to detect the chipset temperature, status of fan and power, etc.

## Product Features and Benefits:

	T5850-32S2Q, T5850-48S6Q, T5850-48S2Q4C, T8050-20Q4C, T5800-8TF12S	T5800-8TF12S
<b>Basic functions</b>	<ul style="list-style-type: none"> <li>M:N (from M source ports to N destination ports)</li> <li>Support Ingress and Egress ACL</li> <li>Support matching The L2, L3, L4, TCP/IP quintuple</li> <li>Support ACL action: copy/forwarding/discarding</li> <li>Support VxLAN and GRE/NvGRE</li> <li>Support matching erSpan id</li> <li>Support Matchin UDF (User defined field)</li> <li>Support matching The IPv6 SA and IPv6 DA</li> <li>Support remarking the ingress VLAN tag</li> <li>Support link aggregation port to be a TAP ingress port or egress port</li> <li>Support timestamp</li> <li>Support using local time</li> <li>Support stripping or editing the vlan tag</li> <li>Support editing MACDA, MACSA and IPDA</li> <li>Support editing IPS</li> <li>Support truncating the packets</li> <li>Support making a copy of the flow</li> <li>Support GRE/NvGRE decap</li> <li>Support VxLAN decap</li> <li>Support Sflow</li> </ul>	<ul style="list-style-type: none"> <li>M:N (from M source ports to N destination ports)</li> <li>Support Ingress and Egress ACL.</li> <li>Support matching The L2, L3, L4, TCP/IP quintuple.</li> <li>Support ACL action:copy/forwarding/discarding.</li> <li>Support remarking the ingress VLAN tag.</li> <li>Support link aggregation port to be a TAP ingress port or egress port</li> <li>Support stripping or editing the vlan tag</li> <li>Support editing MACDA, MACSA and IPDA</li> <li>Support making a copy of the flow</li> <li>Support Sflow</li> </ul>
<b>Load Balance</b>	<ul style="list-style-type: none"> <li>Support using HASH by session</li> <li>Support using HASH by TCP/IP quintuple</li> <li>Support using HASH by VxLAN, GRE/NvGRE inner MAC/IP</li> <li>Support using HASH by MAC address</li> <li>Support round-robi</li> </ul>	<ul style="list-style-type: none"> <li>Support using HASH by session</li> <li>Support using HASH by TCP/IP quintuple</li> <li>Support using HASH by MAC address</li> </ul>
<b>Management Interface</b>	<ul style="list-style-type: none"> <li>Support 4 level privilege control of CLI</li> <li>Support console management</li> <li>Support Telnet management</li> <li>Support SSH management</li> <li>Support WebUI management</li> <li>Support SNMP Get/Set/Trap</li> <li>Support Open API</li> </ul>	
<b>Security</b>	<ul style="list-style-type: none"> <li>Support TACAS+</li> <li>Support RADIUS</li> <li>Support local username and password</li> <li>Support CPU protectio</li> </ul>	
<b>System Management</b>	<ul style="list-style-type: none"> <li>Support direction and document management</li> <li>Support upload and download files via TFTP/FTP</li> <li>Support different system images based on same Uboot</li> </ul>	
<b>Applications</b>	<ul style="list-style-type: none"> <li>Support NTP</li> <li>Support Syslog and Log Server</li> <li>Support debuggin</li> </ul>	
<b>Interface</b>	<ul style="list-style-type: none"> <li>Support duplex full/half/auto</li> <li>Support maximum frame size 12800B</li> <li>Support reduce the rate from 100G to 40G</li> <li>Support split one 40G port into four 10G ports</li> <li>Support unidirectional</li> <li>Support transmit only or receive only</li> </ul>	<ul style="list-style-type: none"> <li>Support duplex full/half/auto</li> <li>Support maximum frame size 12800B</li> </ul>

## Product Parameters

Ports	T8050-20Q4C	T5850-48S2Q4C	T5850-48S6Q	T5850-32S2Q	T5800-8TF12S
SFP+ Ports	4	48	48	32	12
QSFP+ Ports	20	2	6	2	-
QSFP28 Ports	4	4	-	-	-
Max. 10GbE Ports	96	72	72	40	12
Max. 40GbE Ports	24	6	6	2	-
Max. 100GbE Ports	4	4	-	-	-
100/1000 Mgmt Ports	1	1	1	1	1
RS-232 Serial Ports	1 (RJ 45)	1 (RJ 45)	1 (RJ 45)	1 (RJ 45)	1 (RJ-45)
USB Ports	1	1	1	1	1

General						
CPU	PowerPC P1010					
Forwarding Technology	Store and Forward/Cut-Through					
Throughput	1071.4 Mpps	1071.4 Mpps	1071.4 Mpps	595.2 Mpps	178.6 Mpps	
Packets/Sec						
Latency	Min:700ns	Min:550ns	Min:600ns	Min:640ns	Min:0.97us Max:2.27us	
System Memory	1 GB					
Flash	2 GB					
Packet Buffer	9MB	9MB	9MB	9MB	9MB	3MB
Max. TAP Groups	512					
Max. Linkagg Number	16	16	16	16	31	
Max. Linkagg Members	64	64	64	64	16	
Max. Flow Entries						

Power Requirements					
Typical Power Consumption	120W	160W	150W	120W	-
Max. Power Consumption	160W	200W	190W	150W	47W

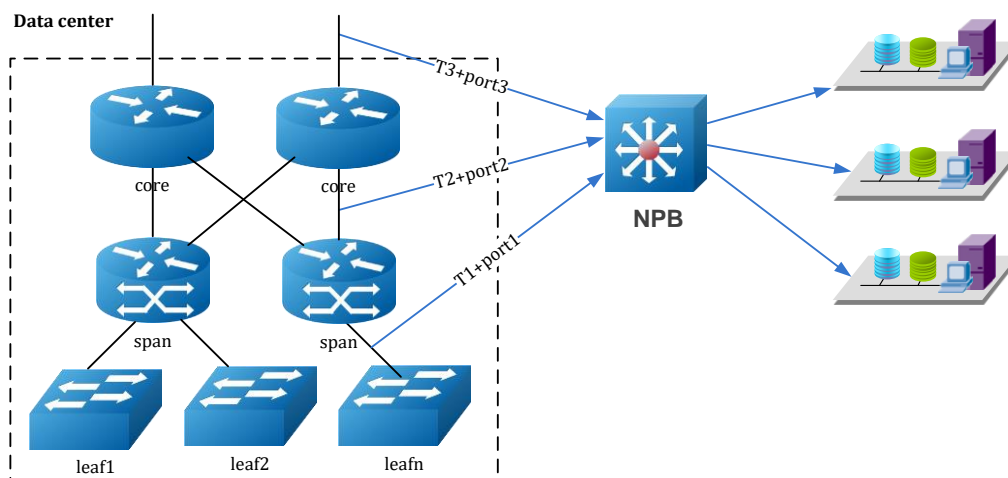
## Product Parameters

Enviromental	T8050-20Q4C	T5850-48S2Q4C	T5850-48S6Q	T5850-32S2Q	T5800-8TF12S
Operating Temperature	0 to 45 °C				
Storage Temperature	-40 to 70 °C				
Relative Humidity	0 to 95% (non-condensing)				
Physical					
Hot Plug Power Supplies	2 (1+1 redundant)			Support	
Hot Plug Fans	3+1 redundant			NOT Support	
Airflow	Front-Rear				
Size HxWxD	44.0 x 4.36 x 47.0 cm (17.5 x 1.73 x 18.5 in.)		44.0 x 4.36 x 40.0 cm (17.5 x 1.73 x 15.9 in.)	4.36 x 44.0 x 31.0 cm (1.73 x 17.5 x 12.2 in.)	

## Applications

### I. Data center application

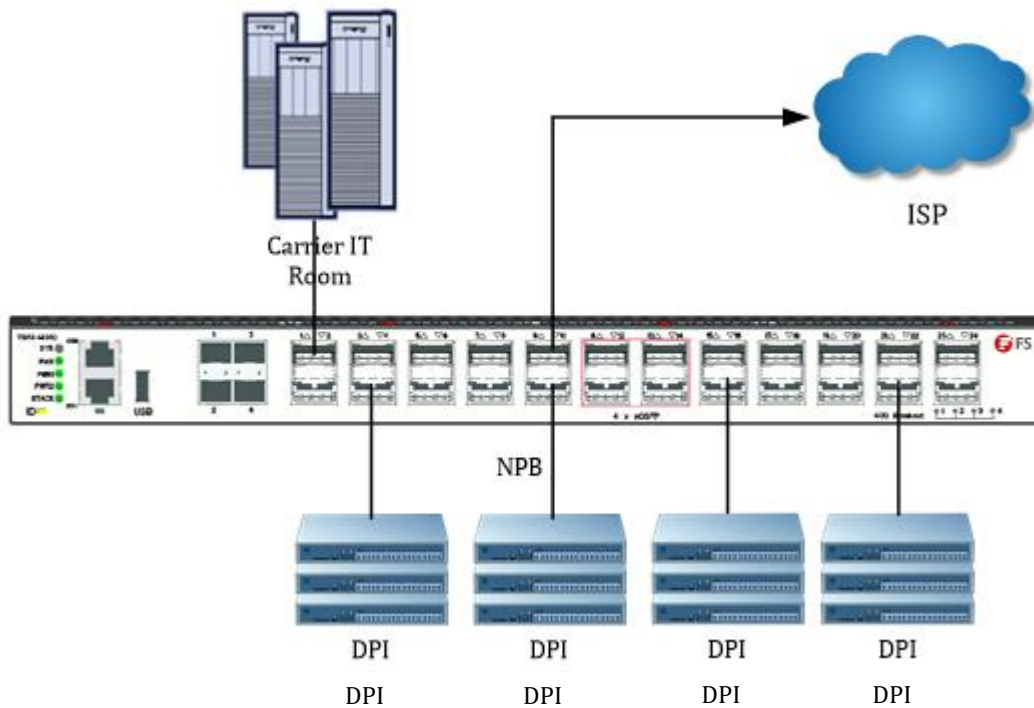
In traditional data center applications, Network Packet Brokers (NPB) are used to sample egress traffic flow of DC. With the increase of scale of data center network, there is growing requirement in deeper performance monitoring within the data center. The high performance Network Packet Brokers (NPB) can be used for such application.



As shown in figure above, user can enable the timestamp and source port label function of Network Packet Brokers (NPB) , the server cluster can access the exact packet process time in each data center layer via source port and timestamp message carried by the packets. From port1, port2, port3, user can distinguish the devices that the streams come from. Through T1, T2 and T3, packets forward latency of each device can be calculated, according to that, user can find out the bottleneck during packet forwarding for the further optimization of data center network.

## II .Application in Carrier network

Generally, Network Packet Brokers (NPB) can be used to assist DPI (Deep Packet Inspection) in carrier networks. Network Packet Brokers (NPB) is applied to forward flows of carrier at internet access point and sends a mirrored copy of the packet flow to DPI device at the same time. The DPI device is for traffic analysis, once a virus on website or illegal information has been monitored, the flows will be blocked by a five elements table sent from management channel between DPI and Network Packet Brokers (NPB) .



## Ordering Information

Product Number	Description
T8050-20Q4C	Standard 1U 19" rack mountable 4x10GE SFP+ Ports(Combo) 20x40GE QSFP+ Ports 4x100GE QSFP28 Ports Dual modular power supply Front-Rear Airflow, 3+1 redundant FAN
T5850- 48S2Q4C	Standard 1U 19" rack mountable 48x10GE SFP+ Ports 2x40GE QSFP+ Ports 4x100GE QSFP28 Ports Dual modular power supply Front-Rear Airflow, 3+1 redundant FAN
T5850-48S6Q	Standard 1U 19" rack mountable 48x10GE SFP+ Ports 6x40GE QSFP+ Ports Dual modular power supply Front-Rear Airflow, 3+1 redundant FAN
T5850-32S2Q	Standard 1U 19" rack mountable 32x10GE SFP+ Ports 2x40GE QSFP+ Ports Dual modular power supply Front-Rear Airflow, 3+1 redundant FAN
T5800-8TF12S	8x10/100/1000 Ethernet Base-T Ports, 8x1000 Base-X SFP Ports (Combo) 12x10GE SFP+ Ports Dual modular AC power supply Front-Rear Airflow





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