FS N8560 Series Switches Data Sheet

Contents

Product overview

The FS N8560-48BC 25GbE Ethernet switch is ideal for medium to large data centers and cloud computing services with higher performance, low latency, zero packet loss, non-blocking features. This data center switch is a high-density ToR switch in a compact 1U form factor with full 48 10/25GbE line rates and 8 40/100GbE ports, meeting the needs of the growing demands of data center environments
N8560-48BC layer 3 switch optimizes the flexibility, efficiency and reliability of the data center network. It features industry-leading Broadcom chips, redundant hot-swappable power supplies and fans, PFC, ECN technology, EVPN, VXLAN, MLAG, etc. for scalable and flexible data center leaf-spine.

The N8560-32C provides line-rate L3 switching across the 32x QSFP28 ports, and each QSFP28 port can be configured as 40/100GbE, or as 4x 10/25GbE or 2x 50GbE via breakout cables. The compact 1U switch can be deployed as a top-of-rack (ToR) switch supporting 10/25GbE to servers with 40/50/100GbE, or as a spine switch supporting 40/50/100GbE spine interconnects.
N8560-32C supports PFC, DCBX and ECN to deliver low-latency, zero packet loss, non-blocking lossless Ethernet, VXLAN, EVPN for virtual network expansion, and supports features like GR, BFD mechanisms to ensure normal operation when the network bears abundant services and heavy traffic.

The N8560-64C 64-port 100GbE data center switch provides line-rate L3 switching across the 64x QSFP28 ports, and each QSFP28 port can be configured as 40/100GbE, or as 4x 25GbE or 4x 10GbE via breakout cables. The compact 2U switch can be deployed as a top-of-rack (ToR) switch supporting 10/25GbE to servers with 40/100GbE, or as a spine switch supporting 40/100GbE spine interconnects.
This switch supports PFC, DCBX and ECN to deliver low-latency, zero packet loss, non-blocking lossless Ethernet, and supports features like GR, BFD mechanisms to ensure normal operation when the network bears abundant services and heavy traffic. FS N8560-64C is a new generation high density 100GbE switch designed for cloud data center.

Product highlights

- Support Ansible, OpenFlow, NETCONF, etc. Configuration and Automation Tools
- Flexible 10/25/40/100GbE Interface Speeds, Support Stacking (Only for N8560-48BC and N8560-64C Switch)
- Flexible 10/25/40/50/100GbE Interface Speeds, Support Stacking (Only for N8560-32C Switch)
- Support MLAG, BGP4/BGP4+, EVPN-VXLAN, REUP, GR, BFD (Only for N8560-48BC and N8560-32C Switch)
- Support MLAG, BGP4/BGP4+, REUP, GR, BFD (Only for N8560-64C Switch)
- Low-latency, Zero Packet Loss with PFC, ECN, RDMA over Converged Ethernet (RoCE)
- 1+1 Hot-swappable AC or DC Power Supplies, 3+1 Smart Fans with Front-to-Back Airflow or Back-to-Front Airflow (Only for N8560-48BC Switch)
- 1+1 Hot-swappable AC or DC Power Supplies, 4+1 Smart Fans with Front-to-Back Airflow or Back-to-Front Airflow (Only for N8560-32C Switch)
- 1+1 Hot-swappable AC or DC Power Supplies, 2+1 Smart Fans (Only for N856064C Switch)

- Support SPAN/RSPAN/ERSPAN and In-band Network Telemetry (INT) for Visibility
- Support ACL, RADIUS, TACACS+, DHCP Snooping, etc. for Security
- Support SNMP v1/v2c/v3, CLI, Telnet, SSH, STP, RSTP, MSTP

Platform details

Switch models and configurations

Figures 1 through 3 show the FS N8560 series switches.

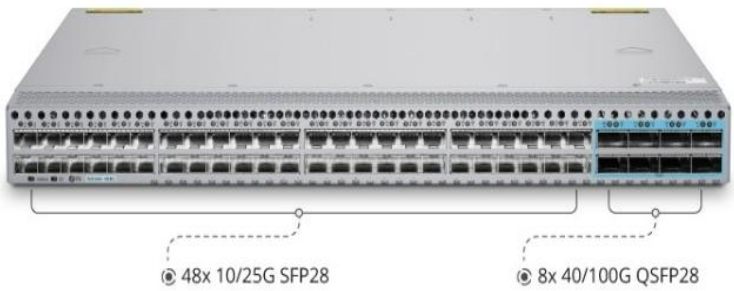

Figure 1.
N8560-48BC, 24-Port Ethernet L3 Switch, 20 x 10Gb SFP+, with 4 x 25Gb SFP28 and 2 x 40Gb QSFP+, Support Stacking, Broadcom Chip

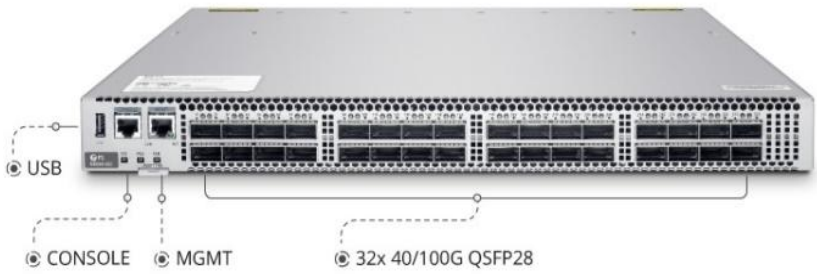

Figure 2.
N8560-32C, 32-Port Ethernet L3 Data Center Switch, 32 x 100Gb QSFP28, Support Stacking, Broadcom Chip

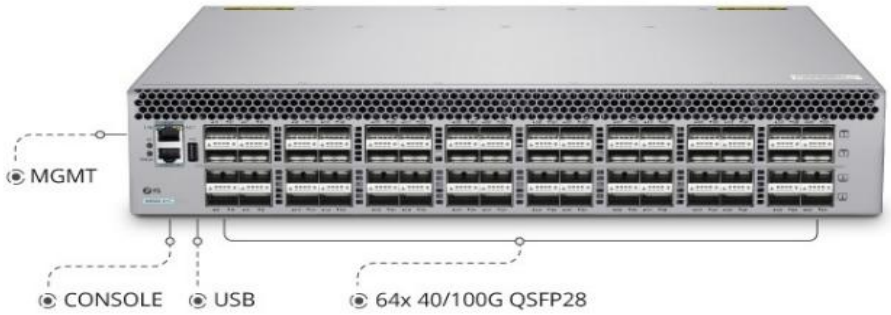

Figure 3.

N8560-64C, 64-Port Ethernet L3 Data Center Switch, 64 x 100Gb QSFP28, Support Stacking, Broadcom Chip

Switch configurations and port density

Table 1 shows the FS N8560 series configurations and port density.

Table 1. **Switch configuration and port density**

FS P/N	N8560-48BC	N8560-32C	N8560-64C
Description	48-Port Ethernet L3 Data Center Switch, 48 x 25Gb SFP28, with 8 x 100Gb QSFP28	32-Port Ethernet L3 Data Center Switch, 32 x 100Gb QSFP28	64-Port Ethernet L3 Data Center Switch, 64 x 100Gb QSFP28
Port			
10G port density	48	-	-
25G port density	48	-	-
40G port density	8	32	64
100G port density	8	32	64
10G port density with breakout cable	80	128	80
25G port density with breakout cable	80	128	80
40G port density with breakout cable	8	32	64
Management ports	1	1	1
Console port	1	1	1
USB port	1	1	1
Memory and processor			
Switch chip	Broadcom BCM56873	Broadcom BCM56870	Broadcom BCM56970
CPU	Cavium CN7130 (Quad-core, 1.2 GHz)	Intel® Xeon D-1527 (Quad-core, 2.2 GHz)	Cavium CN7230 (Quad-core, 1.5 GHz)
SDRAM	4GB	8GB	4GB
Flash memory	8GB	240GB	8GB

FS P/N	N8560-48BC	N8560-32C	N8560-64C
Latency	1μs	1μs	1μs
Packet buffer	32MB	32MB	42MB

Note:

SFP28 can be used for 10/25G connection.

QSFP28 can be used for 40/100G or 4x 10/25G connection (for N8560-48BC and N8560-64C).

QSFP28 can be used for 40/100G or 4x 10/25G or 2x 50G connection (for N8560-32C).

Power supplies and fans

The FS N8560 Series switches ship with the dual 1+1 redundant AC power supply as default.

Table 2 provides more details on the FS N8560 series power supplies and fan specifications.

Table 2. Power supply and fan specifications

Description	N8560-48BC	N8560-32C	N8560-64C
Power supply	Dual 1+1 redundant power supplies (AC or DC)	Dual 1+1 redundant power supplies (AC or DC)	Dual 1+1 redundant power supplies (AC or DC)
Fan number	4x Hot-swappable Fans (3+1 Redundancy)	5x Hot-swappable Fans (4+1 Redundancy)	3x Hot-swappable Fans (2+1 Redundancy)
Airflow	Front-to-Back, Back-to-Front	Front-to-Back, Back-to-Front	Front-to-Back
Acoustic noise	<78dB	<78dB	<78dB
Maximum fan speed	18000rpm	18000rpm	18000rpm
Max.power consumption	300W	400W	600W
Power max rating	550W	550W	800W
Input-voltage range and frequency	• Rated voltage range: 100-240VAC; 50-60Hz • Maximum voltage range: -AC input: 90-264VAC; -High-Voltage DC input: 192 V DC to 288 V DC (for N8560-64C is 164 V DC to 320 V DC		
Power supply efficiency	94% @50Load	94% @50Load	94% @50Load
Input current	3.6A	3.6A	6.38A

Description	N8560-48BC	N8560-32C	N8560-64C
Output ratings	11.4-12.6	11.4-12.6	11.4-12.6
Output holdup time	>10msec@70%load	>10msec@70%load	>10msec@70%load
Power-supply input receptacles	C13	C13	C13
Power cord rating	10A	10A	10A

Stacking

The FS N8560 Series switch models are designed for stacking switches as a single virtual switch, enabling customers to have a single management plane and control plane .

Table 3 lists the supported stacking options.

Table 3. Supported stacking options

Part Name	N8560-48BC	N8560-32C	N8560-64C
Stacking ports	48*25G+8*100G	32*100G	64*100G
Supported stack members	N8560-48BC	N8560-32C	N8560-64C
Maximum number of VSL links	48	48	48
Number of members	2	2	2

Note:

For N8560-48BC, the 25G VSL port only support 25G.

Switch performance

Table 4 shows performance specifications for the FS N8560 series switches.

Table 4. Performance specifications

Performance for all N8560 Series Switches	N8560-48BC	N8560-32C	N8560-64C
Switching capacity	4.0 Tbps	6.4 Tbps	12.8 Tbps
Forwarding rate	1929 Mpps	2980 Mpps	4288 Mpps
Total number of MAC addresses	96000	96000	72000
Total number of IPv4 routes (indirect routes)	128,000	128,000	128,000
Total number of IPv4 host routes (direct routes and ARP)	100,000	100,000	90,000
Total number of IPv6 routes (indirect routes)	64,000	64,000	64,000
Total number of IPv6 host routes (direct routes and NDP)	60000	60000	46000
Total number of IPv4 multicast routes	16000	16000	8000
Total number of IPv6 multicast routes	8000	8000	4000
QoS ACL scale	Input: 4500 Output: 2000	Input: 4500 Output: 2000	Input: 1500 Output: 1000
Security ACL scale	4500	4500	1500
STP virtual ports (port*VLANs) for MST	64	64	64
Total switched virtual interfaces (SVIs)	4000	4000	4000
Jumbo frame	9000 bytes	9000 bytes	9000 bytes

Platform benefits

Table 5 lists the software spotlights for the FS N8560 series switches.

Table 5. Software spotlights

Functionality	Description
High availability and multi-service support	Support Stacking Support Virtual Router Redundancy Protocol (VRRP) Support GR perfect restart, BFD fast forwarding detection and other mechanisms IPv4/IPv6 Dual Protocol Stack Unicast Routing Support Hot swap without affecting normal operation of other devices
Error-free network configuration	Support VXLAN-EVPN (only for N8560-48BC and N8560-32C switch) Support Ansible, OpenFlow, NETCONF, etc. Configuration and Automation Tools Support PFC, ECN, DCBX Realized lossless Ethernet low-latency forwarding based on RDMA (Remote Direct Memory Access) Support DHCP snooping Support hardware-based IPv6 ACLs Support Flow (only for N8560-64C switch)
Secure and simplified access for users and LoT	Support SNMP (SNMPv1,v2c,v3), RMON, gRPC Support the Secure Shell (SSH) and SNMPv3 Support the source IP-based Telnet device access control Support In-band Network Telemetry (INT) Support Network Foundation Protection Policy (NFPP) Support hardware CPU protection mechanism

Software requirements

The FS N8560 Series Switches run on FS OS Software version.

Table 6 lists the latest software requirements for the switch models.

Table 6. Latest software requirements

FS P/N	Description	Latest software requirements
N8560-48BC	N8560-48BC, 48-Port Ethernet L3 Data Center Switch, 48 x 25Gb SFP28, with 8 x 100Gb QSFP28, Support Stacking, Broadcom Chip, Software Installed	FSOS 11.0.5 B9P66S2 Software
N8560-32C	N8560-32C, 32-Port Ethernet L3 Data Center Switch, 32 x 100Gb QSFP28, Support Stacking, Broadcom Chip, Software Installed	FSOS 11.0.5 B9P101 Software
N8560-64C	N8560-64C, 64-Port Ethernet L3 Data Center Switch, 64 x 100Gb QSFP28, Support Stacking, Broadcom Chip, Software Installed	FSOS 11.0.5 B9P66S2 Software

Product specifications

Table 7 shows the product specifications for the FS N8560 series switches.

Table 7. Product specifications

Description	N8560-48BC	N8560-32C	N8560-64C
Environmental			
Operating temperature	0 to 45°C (32 to 113°F)	0 to 40°C (32 to 104°F)	0 to 45°C (32 to 113°F)
Storage temperature	-40 to 70°C (-40 to 158°F)	-40 to 70°C (-40 to 158°F)	-40 to 70°C (-40 to 158°F)
Operating humidity	10% to 90% (Non-condensing)	10% to 90% (Non-condensing)	10% to 90% (Non-condensing)
Storage humidity	10% to 90% (Non-condensing)	10% to 90% (Non-condensing)	10% to 90% (Non-condensing)
Temperature alarm	supported	supported	supported
Acoustic noise	<78dB	<78dB	<78dB
Physical specifications			
Dimensions (HxWxD)	1.73"x 17.4"x 16.5" (44x 442x 420mm)	1.73"x 17.4"x 22" (44x 442x 560mm)	3.46"x 17.4"x 17.7" (88x 442x 450mm)
Rack units (RU)	1 RU	1 RU	2 RU
Weight	27.6 lbs (12.5kg)	28.2 lbs (12.8kg)	36.6 lbs (16.6kg)

Description	N8560-48BC	N8560-32C	N8560-64C
Electrical			
Voltage (auto ranging)	100-240VAC	100-240VAC	100-240VAC
Frequency	50-60Hz	50-60Hz	50-60Hz
Current	3.6A Max	3.6A Max	6.38A Max
Power rating (maximum consumption)	300w	400w	600w
Mean-time between failures			
MTBF (hours)	>330000	>390000	>390000
Connectors			
Connectors and cabling	10G/25G/40G/100G module/DAC/AOC	40G/100G module/DAC/AOC	40G/100G module/DAC/AOC
Standards			
Standards	IEEE 802.3 -2005, IEEE 803.ab, IEEE802.3af, IEEE 802.1d, IEEE 802.1q, IEEE 802.3-2005（802.3ae）、IEEE 802.3ba（2010）802.1x		

Quality certification

At FS, our Quality Commitment lies in all aspects of processes, resources, and methods that enable us to build superior networks for our customers. Through a quality policy focusing on continuous improvement of products and services, we're able to achieve the highest levels of satisfaction for our customers. To that end, every FS employee is accountable for contributing to the value of the products and services we deliver.

Figures 4 shows some of the authoritative certifications obtained by FS N8560 Series Switches.

Figure 4.

Optics supported

For details about the optical modules available, visit：
N8560-48BC: Transceivers DACs and AOCs Supported on N8560-48BC Switch
N8560-32C: Transceivers DACs and AOCs Supported on N8560-32C Switch
N8560-64C: Transceivers DACs and AOCs Supported on N8560-64C Switch

Warranty, service and support

FS N8560 Series Switches enjoy 5 years limited warranty against defects in materials or workmanship. For more information for FS Returns & Refunds policy, visit https://www.fs.com/policies/warranty.html or https://www.fs.com/policies/day_return_policy.html

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- 80% Same-day Shipping: Immediate shipping for in-stock items.
- Fast Response: Direct and immediate assistance from an expert.

For more information, visit https://www.fs.com/service/fs_support.html

Ordering information

Table 8 provides the ordering information for N8560 series switches.

Table 8. Ordering information

FS P/N	Product description
Switch hardware	
N8560-48BC (Front-to-Back)	N8560-48BC, 24-Port Ethernet L3 Switch, 20 x 10Gb SFP+, with 4 x 25Gb SFP28 and 2 x 40Gb QSFP+, Support Stacking, Broadcom Chip, Front-to-Back Airflow
N8560-48BC (Back-to-Front)	N8560-48BC, 48-Port Ethernet L3 Data Center Switch, 48 x 25Gb SFP28, with 8 x 100Gb QSFP28, Support MLAG/Stacking, Broadcom Chip, Back-to-Front Airflow
N8560-32C (Front-to-Back)	N8560-32C, 32-Port Ethernet L3 Data Center Switch, 32 x 100Gb QSFP28, Support MLAG/Stacking, Broadcom Chip, Front-to-Back Airflow
N8560-32C (Back-to-Front)	N8560-32C, 32-Port Ethernet L3 Data Center Switch, 32 x 100Gb QSFP28, Support MLAG/Stacking, Broadcom Chip, Back-to-Front Airflow
N8560-64C (Front-to-Back)	N8560-64C, 64-Port Ethernet L3 Data Center Switch, 64 x 100Gb QSFP28, Support MLAG/Stacking, Broadcom Chip, Front-to-Back Airflow
N8560-32C (**Customized**)	N8560-32C, 32-Port Ethernet L3 Data Center Switch, 32 x 100Gb QSFP28, Support MLAG/Stacking, Broadcom Chip
N8560-64C (**Customized**)	N8560-64C, 64-Port Ethernet L3 Data Center Switch, 64 x 100Gb QSFP28, Support MLAG/Stacking, Broadcom Chip

Additional information

For more information about the N8560 Series Switches, contact your account manager or visit https://www.fs.com/search_result?keyword=N8560

Document history

New or revised topic	Described in	Date
Added Customized N8560-32C & N8560-64C	Updated 3, 7, 14	4/26/2024
Added Fan Type: Back-to-Front Airflow	Updated 3, 7, 14	9/12/2022
Updates to FS N8560 Series Switches DataSheet	Updated all	12/5/2022

Shenzhen（China）

Address: Room 2702, Yisibo Software Building，Haitian 2nd Road, Yuehai Street, Nanshan District, Shenzhen, 518000, China
Tel: +86(755)8357 1351
Email: marketing@fs.com

Wuhan（China）

Address: Optical Valley Software Park A6, 9th - 18th floor, Guanshan Ave, Hongshan District, Wuhan, Hubei Province, 430074, China
Tel: +86 (027) 8808 9195
Email: marketing@fs.com

Delaware（United States）

Address：380 Centerpoint Blvd New Castle, DE 19720 United States
Tel: +1 (888) 468 7419
Email：us@fs.com

Birmingham（United Kingdom）

Address：Part 7th Floor, 45 CHURCH STREET, Birmingham, B3 2RT
Tel: +44 (020) 3287 6810
Email：uk@fs.com

Munich（Germany）

Address：NOVA Gewerbepark Building 7, Am Gfild 7, 85375 Neufahrn bei Munich, Germany
Tel: +49 (0) 8165 80 90 517
Email：de@fs.com

Melbourne（Australia）

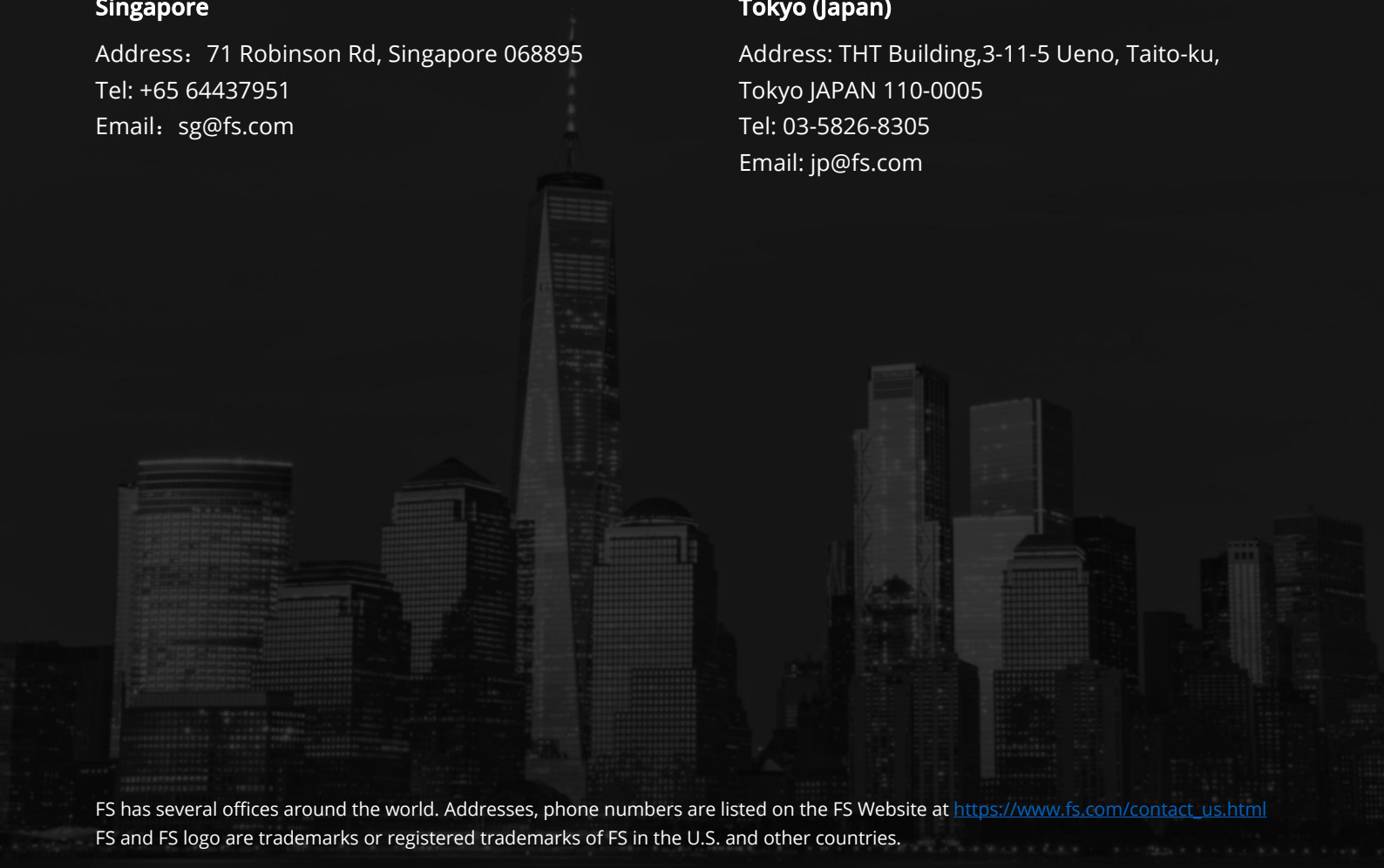
Address：57-59 Edison Rd, Dandenong South, VIC 3175, Australia
Tel: +61 3 9693 3488
Email：au@fs.com

Singapore

Address：71 Robinson Rd, Singapore 068895
Tel: +65 64437951
Email：sg@fs.com

Tokyo (Japan)

Address: THT Building,3-11-5 Ueno, Taito-ku, Tokyo JAPAN 110-0005
Tel: 03-5826-8305
Email: jp@fs.com



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