



## **FS S5850 and S8050 Series Switches**

### **Release Note**

# Content

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# 1 Introduction

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This document describes the release information about FSOS-v6.2.26, such as new features, command line changes, behavior changes, fixed problems, etc.;

Remind you, before loading FSOS-v6.2.26 firmware, please backup configuration file to avoid potentials risks.

# 2

## Version Information

### 2.1 Basic Information

<b>Current Release</b>	FSOS-S5850-v6.2.26.r.bin
<b>Applicable Product</b>	S5850 series switch
<b>Applicable Customer</b>	General
<b>Category</b>	Official release

### 2.2 Release History

**Table 2-1** Version historical information

Current Release	Baseline Release	Release Date	Category	Important changes based on baseline version
FSOS-V6.2.26	FSOS-V6.2.25	2018-05-09	Official release	<ul style="list-style-type: none"> <li>• Support EFD</li> <li>• Support Latency Monitor, Buffer Monitor</li> <li>• Support to save OVSDB configuration</li> <li>• Support to specify account type</li> <li>• Vxlan function extended</li> <li>• RPC-API performance optimized and function extended</li> <li>• CPU Traffic Limit optimized</li> <li>• LAG function extended</li> <li>• VRF function extended</li> <li>• BFD optimized</li> </ul>

				<ul style="list-style-type: none"> <li>• ACL optimized</li> <li>• Remove License control</li> </ul>
FSOS-V6. 2.25	FSOS-V6. 2.24	2018-01-31	Official release	<ul style="list-style-type: none"> <li>• Sflow upgraded to Version 5.0</li> <li>• Sflow sampling range extended to 32-1048576</li> <li>• VARP optimized</li> <li>• Support PFC</li> <li>• Support ICMP debug</li> <li>• VXLAN optimized</li> <li>• Support CFM</li> <li>• Support EFM</li> <li>• WebUI optimized</li> <li>• Support DHCP relay on virtual IP</li> <li>• Support IPv6</li> <li>• Support G8032</li> <li>• Support BFD</li> </ul>
FSOS-V6. 2.24	FSOS-V6. 2.23	2017-09-31	Official release	<ul style="list-style-type: none"> <li>• Support ARP learning via Overlay Tunnel</li> <li>• Support Overlay centralized Gateway</li> <li>• Support OSPF multi network models</li> <li>• Support OSPF neighbor establishing based on GRE Tunnel Interface</li> <li>• Support to record MAC flapping in syslog</li> <li>• Telnet/SSH support to configure Client source IP</li> <li>• Support to configure errdisable via WebUI</li> <li>• IP SLA optimized</li> <li>• Syslog optimized</li> <li>• Sflow optimized</li> </ul>
FSOS-V6. 2.23	FSOS-V6. 2.22	2017-08-11	Official release	<ul style="list-style-type: none"> <li>• Support 'reset factory config'</li> <li>• Support to display packets received/sent by CPU</li> <li>• Support OSFP secondary IP address</li> </ul>

				<ul style="list-style-type: none"> <li>• Support SERDES loopback (internal/external)</li> <li>• Support to display management port detail</li> <li>• Support LLDP Configuration MIB node</li> <li>• PBR function optimized</li> <li>• PRC-API function optimized</li> <li>• VLAN statistics function optimized</li> </ul>
FSOS-V6. 2.22	FSOS-V6. 2.21	2017-03-31	Official release	<ul style="list-style-type: none"> <li>• Support Overlay-horizon split switch</li> <li>• BGP optimized, IBGP support VRF</li> <li>• Support Telnet\SSH inside VRF</li> <li>• Support L3-GRE</li> <li>• Some behavior changes</li> </ul>
FSOS-V6. 2.21	FSOS-V6. 2.20	2017-01-03	Official release	<ul style="list-style-type: none"> <li>• Support Ping parameters</li> <li>• Support MLAG orphan port</li> <li>• Support IP_SLA linkage with static routing</li> <li>• Support BGP 4 octet AS number</li> <li>• Support Packet length ACL</li> <li>• Support CPU capture</li> <li>• Support Vlan counter</li> </ul>
FSOS-V6. 2.20	FSOS-V6. 2.14	2016-09-12	Official release	<ul style="list-style-type: none"> <li>• Support to modify Telnet\SSH port number</li> <li>• WEB-UI optimized</li> <li>• Memory management optimized</li> <li>• RPC-API optimized</li> <li>• platform ports optimized</li> </ul>
FSOS-V6. 2.14	FSOS-V6. 2.11	2016-07-20	Official release	Platform ports optimized
FSOS-V6. 2.11	FSOS-V6. 2.9	2016-06-29	Official release	<ul style="list-style-type: none"> <li>• Smart-link optimized</li> <li>• Hardware FDB learning optimized</li> <li>• AAA optimized</li> </ul>

FSOS-V6. 2.9	FSOS-V6. 2.1	2016-06-04	Official release	<ul style="list-style-type: none"> <li>• Support WEBUI</li> <li>• Support some application to specify source IP、 source port</li> <li>• Support Telnet\SSH ACL</li> <li>• Unidirectional link optimized</li> <li>• Platform ports optimized</li> <li>• ERPS optimized</li> <li>• Smart-link performance optimized</li> </ul>
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## 2.3 Hardware Supported



### Notice

Before upgrade, please double-check the version is compatible with Hardware

**Table 2-2** Hardware supported

Series	Name
Hardware model (F means 1G optical port, S means 10G optical port, Q means 40G optical port, C means 100G optical port)	<ul style="list-style-type: none"> <li>• S5850-48S6Q</li> <li>• S5850-48S2Q4C</li> <li>• S5850-32S2Q</li> <li>• S8050-20Q4C</li> </ul>
BOOTROM version	Switch pre-installed version (version can be displayed by CLI 'show version' )
EPLD version	Switch pre-installed version (version can be displayed by CLI 'show version' )
Remark	N/A





Example to check firmware version, hardware model, BootRom and EPLD version. Some earlier switch's BootRom, EPLD version may be different, but will not impact upgrade.

```
S5850# show version
FSOS Software, S5850, Version 6.2.26
Copyright © 2004-2016 FS Networks Inc. All rights reserved.
The current running image is flash:/boot/FSOS-S5850-v6.2.26.r.bin--Firmware
version

SH-BL-01 uptime is 7 days, 12 hours, 8 minute
Hardware Type is 48S6Q--Hardware model
Hardware Version is 2.0
SDRAM size 1024M
Flash size 2048M
EPLD Version is 2.2--EPLD version
BootRom Version is 8.1.1--BootRom version
System serial number is E163GD16A00A
```

## 2.4 Version Compatibility

**Table 2-3** Upgrade compatibility table

Current Version	Historical Version	Compatibility
v6.2.26	All previous versions	YES

## 2.5 Upgrade Precaution

- Not unless special notice, UBOOT and EPLD version do not need to upgrade.
- Please double check MD5 value is identical with the value provided by FS, to prevent file damaged during transmission.
- Please carefully check the firmware version is compatible with hardware model.
- Please backup configuration file before upgrade.
- Please keep previous firmware until all procedures finished, if need to rollback.

# 3

## New Features Specification

New features added to baseline version

### 3.1 FSOS-V6.2.26

New features	Specification
Support EFD	Support Elephant Flow Detection function
Support Latency Monitor, Buffer Monitor	N/A
Support to save OVSDB configuration	Support to save configuration automatically or manually
Support to specify account type	Support to specify account service type as telnet, rpc-api, ssh, web
Vxlan function extended	--Support to transparent L2 protocol packets via Vxlan tunnel --Vxlan + Vlan mapping function optimized --Support to specify Vxlan header's DSCP
RPC-API function extended	--Separate RPC-API account and Telnet/SSH account --Support RPC-API under VRF --Performance highly optimized
CPU Traffic Limit optimized	The path to CPU optimized
LAG function extended	Support new LAG mode: 32 member mode
VRF function extended	Support to copy files under VRF

BFD optimized	N/A
ACL optimized	Support to display all ACL statistics by one command
Policy-map type qos support ACL statistics	N/A
Reboot mechanism optimized	Support countdown timer

### 3.2 FSOS-V6.2.25

New features	Specification
VARP optimized	Virtual IP could be in different network segment compared with primary IP
Support PCF	N/A
Support ICMP debug	N/A
VXLAN optimized	Support VXLAN + VLAN mapping scenario
Support EFM	Support link failure detect, fix, auto discovery, remote loopback
Support CFM	Support hardware CCM detect, MAC Ping, MAC Trace
WebUI optimized	Support to configure web timeout, and clear web users
Support Ipv6	N/A
Support G8032	N/A
Support BFD	N/A

### 3.3 FSOS-V6.2.24

New features	Specification
Support ARP learning via Overlay Tunnel	N/A

Support Overlay centralized Gateway	N/A
Support OSPF multi network models	Support broadcast, non-broadcast, P2P, P2MP models
Support OSPF neighbor establishing by GRE Tunnel Interface	N/A
Support to record MAC flapping in syslog	Syslog will make a record, when MAC flapping detected
Telnet/SSH support to configure Client source IP	N/A
Support to configure errdisable via WebUI	Add new web page to configure errdisable parameters
IP SLA optimized	Support to configure more parameters
Syslog optimized	By using 'logging sync' command, system will save immediately the log in buffer to syslog file
Sflow optimized	Support Sflow version 5

### 3.4 FSOS-V6.2.23

New features	Specification
BGP support to synchronize ARP(EVPN function)	DEMO version
Reset factory config	Support CLI and WEBUI to rest factory config
SERDES loopback	Support internal/external loopback
CPU receive/send packets NUM and rate statistic	Show cpu traffic-statistics receive/transmit
Display management port detail	Show management interface

OSPF support secondary IP address	OSPF support to assert secondary IP
BGP MD5 authentication and encryption	BGP neighbor establishing support MD5 authentication/encryption
LLDP Configuration MIB node	Support LLDP standard SNMP node
Tunble optical module	Support to configure wave length
Multi-link function optimized	N/A

### 3.5 FSOS-V6.2.22

New features	Specification
Overlay multi uplink	Overlay support to specify multi source IP address, and multi uplink scenario
BGP optimized	BGP upgraded to version v7.10
Overlay horizon-split switch	Support Overlay horizon split disable/enable
Telnet\SSH inside VRF	Address inside VRF can be managed by Telnet/SSH
<b>L3-GRE</b>	Support GRE L3 tunnel

### 3.6 FSOS-V6.2.21

New Features	Specification
MLAG orphan port	MLAG support orphan port scenario
BGP 4 octet AS number	Support AS number with 4 octet, compatible with new BGP version
IP_SLA linkage with static routing	Support track static address
Packets capture (CPU Mirror)	Support packets capture on local switch,

	and saved as pcap format
Vlan counter	Support Vlan counter
Packet length ACL	Support ACL matching by packet length
Ping parameter	Support to specify src-mac, packet length, number, interval, set DF, etc;

### 3.7 FSOS-V6.2.20

New Features	Specification
Telnet\SSH can modify port number	N/A

### 3.8 FSOS-V6.2.14

N/A

### 3.9 FSOS-V6.2.11

N/A

### 3.10 FSOS-V6.2.9

New Features	Specification
WEBUI	Switch WEB management
FEC	Used on 100G port to correct CRC packet
Tacacs/Radius Server shared-key encryption	N/A
100G port auto-negotiation with 40G port	100G ports support auto-negotiation with 40G ports
NTP\Logging server\DNS\AAA specify source IP、 port	N/A

Telnet\SSH ACL	Support to configure ACL rules to control Telnet/SSH user login
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# 4 CLI Changes Specification

New CLI changes based on the baseline version

## 4.1 FSOS-V6.2.26

Original format	New format	Remark
N/A	N/A	All Latency Monitor and Buffer Monitor commands are updated, please refer to CLI manual
N/A	remote-vtep <1-65535> encapsulation-dscp-strategy <custom-assign VALUE   dscp-copy   priority-map>;	New command to specify Vxlan header's DSCP
N/A	Statistics enable	New command under ' <i>Policy-map type qos</i> '
N/A	show policy-map type qos statistics  clear qos policy-map type qos statistics	New command to display ' <i>policy-map type qos</i> ' ACL statistics
N/A	username admin service-type <all   none   rpc-api   ssh   telnet   web>	New command to specify account type
show mac-address flapping-configuration	N/A	Command removed.  New command to display: <i>show errdisable</i>



		<i>fdb-loop</i>
N/A	port-channel group-mode <32   56>	New command to switch LAG mode
N/A	<   no> arp as-layer-3 enable	New command to process ARP packets as normal IP packets

## 4.2 FSOS-V6.2.25

Original format	New format	Remark
cpu-traffic-statistics time	cpu-traffic-statistics time	CLI moved to config mode
Pause buffer-size	N/A	CLI removed
sflow flow-sampling rate<1-8192>	sflow flow-sampling rate<32-1048576>	Sampling rate extended

## 4.3 FSOS-V6.2.24

Original format	New format	Remark
Vlan xxx remote-vtep x keep-vlan-tag	Remote-vtep x ip address x.x.x.x type vxlan keep-vlan-tag	N/A

## 4.4 FSOS-V6.2.23

N/A

## 4.5 FSOS-V6.2.22

Original format	New format	Remark
show monitor cpu packet buffer	show monitor cpu packet-buffer	N/A

clear monitor cpu packet buffer	clear monitor cpu packet all	N/A
show monitor capture strategy	show monitor cpu capture strategy	N/A
monitor capture strategy	monitor cpu capture strategy	N/A

## 4.6 FSOS-V6.2.21

Original format	New format	Remark
type echo protocol ipIcmp-Echo *	type icmp-echo *	N/A

## 4.7 FSOS-V6.2.20

N/A

## 4.8 FSOS-V6.2.14

N/A

## 4.9 FSOS-V6.2.11

N/A

## 4.10 FSOS-V6.2.9

N/A

# 5 New Behaviors Specification

New behaviors based on the baseline version

## 5.1 FSOS-V6.2.26

Item	Earlier Behavior	New Behavior
L3 MTU range	<68-9000>	<68-9216>
Port description	Don't support special character	support special character
Syslog level for ARP aging	Level 4	Level 6
FDB-LOOP default action	Set port to Errdisable status	Record to syslog

## 5.2 FSOS-V6.2.25

Item	Earlier Behavior	New Behavior
VXLAN and VLAN Translation	Do not support to configure on same interface	Support to configure on same interface
Hostname name rules	Need to start with letters and stop with number or letters	Without limitation

## 5.3 FSOS-V6.2.24

Item	Earlier Behavior	New Behavior
BGP AS number	Do not support xx.yy	Support xx.yy format

	format	
Multi destination mirror group	Do not support mirror by source vlan	Support mirror by source vlan
Show diagnostic-information	Without 'show memory-threshold, show hal message buffer'	Include 'show memory-threshold, show hal message buffer'
Show running-config, show startup-config	Privilege 2 CLI	Privilege 4 CLI

## 5.4 FSOS-V6.2.23

Item	Earlier Behavior	New Behavior
VLAN statistic	N/A	Support statistic by bytes
IS-IS	Packets drop by default	Packets transmit by default
RPC-API	100 CLI per command	1024 CLI per command
Configuration file backup	N/A	System will copy the configuration file to flash: /boot folder, when users save (Write) the file.
Show diagnostic-information	N/A	It will display the .core file in sys-diag folder
ACL statistic	Count the packets dropped by policer rules	Users can decide to count the dropped packets or not(refer to CLI doc for details)
Flow policer	Support 768 policer rules by default	Users can switch to 3840 policer rules(refer to CLI doc for details)

## 5.5 FSOS-V6.2.22

Item	Earlier Behavior	New Behavior
Vlan name description	Character limit is 16	Character limit is up to 31
Syslog recording condition	Do not record CLI operations in privileged mode	Record CLI operations in all modes
EFD function released	License required to use EFD function	Open to all users
HTTP/HTTPS independent switch	Only one switch for HTTP/HTTPS	Two independents switches for HTTP and HTTPS

## 5.6 FSOS-V6.2.21

Item	Earlier Behavior	New Behavior
Reboot-info optimized	Display less information	Display more detailed information
Extend more port type to support RF\LF	Only 10G port support RF/LF	10G\40G\100G ports support RF/LF
Optimized policer cbs\pbs mechanism	Need to adjust cbs\pbs value manually	Automatic resizing

## 5.7 FSOS-V6.2.20

Item	Earlier Behavior	New Behavior
Ports description character limit	Character limit is 20	Character limit is up to 240
RPC-API optimized	N/A	N/A

WEB-UI optimized	N/A	N/A
Memory management optimized	N/A	N/A
Platform ports optimized	N/A	N/A

## 5.8 FSOS-V6.2.14

Item	Earlier Behavior	New Behavior
Platform ports optimized	N/A	N/A

## 5.9 FSOS-V6.2.11

Item	Earlier Behavior	New Behavior
Platform ports optimized	N/A	N/A
Hardware learning optimized	N/A	N/A
AAA optimized	N/A	N/A

## 5.10 FSOS-V6.2.9

Item	Earlier Behavior	New Behavior
Enhance ports up\down event log level	Ports up\down log level is 6	Ports up/down level is 4
Enhance syslog recording range	Only recorded level 0-4 log	Record level 0-6 log
ERPS optimized	N/A	Support RRPP
Unidirectional link	N/A	N/A

optimized		
Platform ports optimized	N/A	N/A
Smart-link performance optimized	N/A	N/A
LLDP default behavior changed	LLDP disabled on ports by default	LLDP enabled on ports by default
NTP Server Hostname character limit	Hostname only accepts number, letter, - _ .	Hostname supports more special character

# 6

## Fixed Problems

Fixed problems based on baseline version.

### 6.1 FSOS-V6.2.26

Problem Description	Occurred Condition
“show ip bgp community” may cause BGP abnormal	N/A
BGP message includes 32 RT info may cause BGP abnormal	N/A
BGP route revoked may cause memory leak	In some special condition
Radius don't work on out-band management	N/A
Some tagged Vxlan packets may be dropped after decapsulation	In some special condition
PIM module crash	In some special condition
Link flapping on 40G port	Some hardware type occur link flapping when the ports are used as LAG
'ACL egress stats exclude-drop output' don't work	N/A

### 6.2 FSOS-V6.2.25

Problem Description	Occurred Condition
When LAG member changed, load balance may work abnormally in special	LAG member changes



condition.	
MLD module work abnormally, switch cannot learn MLD report.	N/A
Delete LAG interface may impact hsrvd module.	ARP loop occurs
NTP synchronization failed	In some special condition
PBR entry cannot take effect based on seq-number	NA
VXLAN cannot learn ARP by tunnel	If VNI number greater than 16bits
Packets may miss one bit after pcap convert	If packet size is multiple of 16bits
Radius abnormal	N/A
IP_SLA timeout	In some special condition

### 6.3 FSOS-V6.2.24

<b>Problem Description</b>	<b>Occurred Condition</b>
Syslog sever IP unreachable will cause CPU usage high	Incorrect syslog sever IP
Do not support 'Openssh' tool	N/A
MLAG cannot isolate igmp query parckets	N/A
SNMP ACL do not support extend ACL	N/A

### 6.4 FSOS-V6.2.23

<b>Problem Description</b>	<b>Occurred Condition</b>
Management port up or down events will record in syslog file with better method	N/A

LLDP module crash in some special condition	Vlan name in packets is not on standard format
Some BHM mechanism optimized	N/A
PBR do not function after reboot system	N/A

## 6.5 FSOS-V6.2.22

Problem Description	Occurred Condition
Rate display is inaccurate on aggregation ports	N/A
Unreasonable check on static routing track configuration	If next hop is in the target segment, static routing track cannot be configured correctly
Serial port lock VTY session	Small probability occurred
Sflow sampling frequency is inaccurate	N/A
RPC-API cause memory leak	Frequently execute RPC-API operation
Telnet process causes CPU high usage	Small probability occurred
DCHP process Crash	When dhcp client communicating with dhcp sever, vlan interface will be deleted in some particular conditions
100Gport auto-negotiation time is slow to a 40G port	N/A

## 6.6 FSOS-V6.2.21

Problem Description	Occurred Condition
SNMP ifAlias node get interruption	One port has no description in a continuous ports

FDB is not flushed when MLAG ports are in errdisable	MLAG ports are in errdisable
FDB Loop cause Peer-link ports error disable	FDB duplicated occurred frequently on MLAG ports
When MLAG failed, FDB do not synchronize to Peer-link	MLAG failed in some special conditions

## 6.7 FSOS-V6.2.20

<b>Problem Description</b>	<b>Occurred Condition</b>
Cloud Agent enable cause memory leak	N/A
SNMP IfAlias node getting range error	Get public node IfAlias when port description is oversize
MLAG+Overlay scenario, ARP will overwrite 32 bits DVR routing	MLAG+Overlay scenario, when switches use the same ip address on each side of overlay tunnel
LLDP causes switches reboot automatically in some particular conditions	Cooperation with other vendors, and DCBX enable
MLAG Peer-link could learn FDB in some special conditions	When packet's mac da match the configured gateway mac, mac address learning disable on peer link will not take effect
Mass TCP attacks cause switches reboot	Switches suffered mass TCP attacks from public network

## 6.8 FSOS-V6.2.14

Problem Description	Occurred Condition
Port ethertype modification causes ERPS abnormal	Modify ethertype on ERPS ports
ERPS switching performance cannot be within 50ms on aggregation ports	Using aggregation ports as ERPS interface
Switches do not forward packets in some particular conditions	Small probability occurred
Switches create imish.core file if suffering mass login attacks	Mass login attacks

## 6.9 FSOS-V 6.2.11

Problem Description	Occurred Condition
40G\100Gports Pathcost is incorrect in OSPF	N/A
Vlan cannot learn FDB if overlay enable	N/A
Ping function cannot work in some particular conditions	Specify VRF

## 6.10 FSOS-V 6.2.9

Problem Description	Occurred Condition
Interface tunnel operation causes switch reboot	Create, then delete interface tunnel
Multi-users AAA authentication cannot work	Multi-users AAA authentication

Specified TCP port attack causes switch reboot	TCP attack on specified port 8100
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# 7

## Version Restrictions And Cautions

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- All features that asserted to support are in product Spec manual, for some features or CLI already exist in switches but not declared in Spec manual, we consider them as testing features, so its functions are not guaranteed. Please do not use these kinds of features in production network.
- After enable hardware FDB learning, errdisable reason fdb-loop will not take effect. If you do not require high speed FDB learning, we suggest choosing software FDB learning by default, no need to active hardware learning.
- When mirror destination port is down, the port statistic will still grow, but that do not impact function
- Overlay will remove double vlan tag by default, after packets arrived on remote Vtep end, it will add only one vlan tag. We can also enable keep vlan tag function to keep vlan. After packets arrived on remote Vtep end, it is possible to change outer vlan based on VNI correspondence.

# 8 Operating System Upgrade

---

## Step 1 Copy the image (.bin) to switch **flash:/boot**

```
FS# copy mgmt-if ftp://admin:admin@10.10.25.33/FSOS-S5850-v6.2.23.r.bin flash:/boot
```



Upload the firmware provided by FS to TFTP\FTP\U, and then copy it to the switch flash:/boot from TFTP\FTP\U. For how to copy, please refer to 《E\_Series\_Switch\_Quick\_Start\_Guide\_en》 chapter 3.

## Step 2 Set the target firmware as next boot firmware.

For example, set *FSOS-S5850-v6.2.23.r.bin* as the target version to upgrade.

```
FS# boot system flash:/boot/FSOS-S5850-v6.2.23.r.bin
```

Then the switch will ask to confirm the setting. You can enter 'y' to continue, or enter 'n' to cancel it.

```
Are you sure to use flash:/boot/FSOS-S5850-v6.2.23.r.bin as the next boot image?  
[confirm]y/n
```

## Step 3 Verify the next boot version.

Use **show boot** command to verify if the next boot version is correct

```
FS# show boot  
The current boot image version is: S5850-6.1.12.fcs  
The current running image is: flash:/boot/FSOS-S5850-v6.1.12.fcs.r.bin  
The next time boot image version is: v6.2.23  
The next running image is: flash:/boot/FSOS-S5850-v6.2.23.r.bin
```

## Step 4 Restart the switch.

## Step 5 Check if the switch has been successfully upgraded.

```
FS# show version  
FSOS Software, S5850, Version 6.2.23  
Copyright (C) 2004-2016 FS Networks Inc. All rights reserved.  
The current running image is flash:/boot/FSOS-S5850-v6.2.23.r.bin
```

```
FS uptime is 0 days, 0 hours, 12 minutes  
Hardware Type is 20Q4Z  
Hardware Version is 1.0
```

SDRAM size 1024M  
Flash size 2048M  
EPLD Version is 2.2  
BootRom Version is 8.1.1  
System serial number is E130GD151004



# 9 FS Authentication Interface Module

To ensure device compatibility, and make it work at its optimum performance, we recommend that you use these FS authentication interface module.

**Table 9-1** FS Authentication Interface Module

Brand	Type	Center Wavelength	Interface Type	Support Cable	Transmission Distance	PN No.
Allray	1G optical module	1310nm	LC	LR	10km	ATR-S0201D
		850nm	LC	SR	500m	ATR-S0200D
Gigalight	1G optical module	850nm	LC	SR	550m	SFP-8524-S5CD
		1310nm	LC	LR	20km	GP-3124-L2CD
	40G/4*10G AOC	850nm	/	SR	100m	GQP-MDO400-005C
	10/100/1000 Photoelectric module	/	RJ45	/	/	GE-GB-P1RC
ATOP	10G optical module	850nm	LC	SR	300m	APSP85B33CDL03
Innolight	10G optical module	850nm	LC	SR	300m	TR-PX85S-N00
		1310nm	LC	LR	10km	TR-PX13L-NBK
	40G optical module	850nm	MPO	SR	100m	TR-QQ85S-N00
	100G optical	1310nm	LC	LR	10km	TR-FC13L-N00

	module	850nm	MPO	SR	100m	TR-FC85S-N00
	10G AOC	850nm	/	SR	100m	TF-PX003-N00
		850nm	/	SR	100m	TF-PX010-N00
	40G AOC	850nm	/	SR	100m	TF-QQ003-N00
		850nm	/	SR	100m	TF-QQ010-N00
Finisar	10G optical module	850nm	LC	SR	300m	FTLX8571D3BCL
	40G optical module	850nm	MPO	SR	150m	FTL410QE3C
	100G optical module	1310nm	LC	LR	10km	FTLC1151RDPL
		850nm	MPO	SR	100m	FTLC9551REMP
FS	10G optical module	850nm	LC	SR	300m	SPF+-85192-SRC
		1310nm	LC	LR	10km	SFP+-31192-LRC
FS	40G optical module	850nm	MPO	SR	100m	CQS-MP0400-SR4C
		1310nm	LC	LR	2km	GQM-SP0400-IR4C
		1330nm	LC	LR	10km	GQS-SPO400-LR4CP
Avago	100G optical module	850nm	MPO	SR	100m	AFBR-89CDDZ
万兆通	10G DAC	/	/	/	3m	SFP-H10G-CU3M
	40G DAC	/	/	/	1m	QSFP-H40G-CU1M
		/	/	/	3m	QSFP-H40G-CU3M
	40G/4*10G DAC	/	/	/	3m	QSFP-H40G-CU3M
LEONI	10G DAC	/	/	/	3m	L45593-C100-D30
	40G DAC	/	/	/	0.5m	L45593-D117-D5
		/	/	/	1m	L45593-D117-D10

		/	/	/	3m	L45593-D117-D30
	40G/4*10G DAC	/	/	/	0.5m	L45593-D177-D5
		/	/	/	1m	L45593-D177-D10
Amphenol	100G AOC	850nm	/	SR	100m	FOQQD33P00010
		850nm	/	SR	100m	FOQQD33P00020

If you use interface modules that are not certified by FS, you may have the following problems:

1. Some unauthenticated interface modules do not conform to the MSA protocol, causing a port to be inserted into the optical module and its adjacent port cannot be inserted into the optical module. The golden finger of some unauthenticated interface modules is not reasonable, resulting in a short circuit in the interface.
2. Some unauthenticated optical modules are not properly designed in the data bus, which can lead to abnormal data on the device bus, and even the data on the data bus cannot be read again.
3. Some unauthenticated optical modules are not reasonable in temperature monitoring, leading to incorrect temperature alarm information on the system. Or the operating temperature range of the interface module does not meet the requirements, and the low power of the high temperature times even leads to business interruption.
4. Some unauthenticated optical modules are not reasonable in register setting, so the data bus cannot read the parameters and diagnostic information correctly.
5. Some unauthenticated optical modules are not designed to satisfy EMC, not only meet the electromagnetic interference, but also influence the surrounding equipment.