

S8600E Series Switches Management and Software Update

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- Switch Management
- Software Upgrade

Preface

Audience

Ruijie business partners and customers who are responsible for configuring and maintaining Ruijie wireless devices.

Revision History

| Date | Change Contents | Reviser |
|--------|--------------------------|-------------|
| 2016.3 | Initial publication V1.0 | TAC Oversea |

Note :

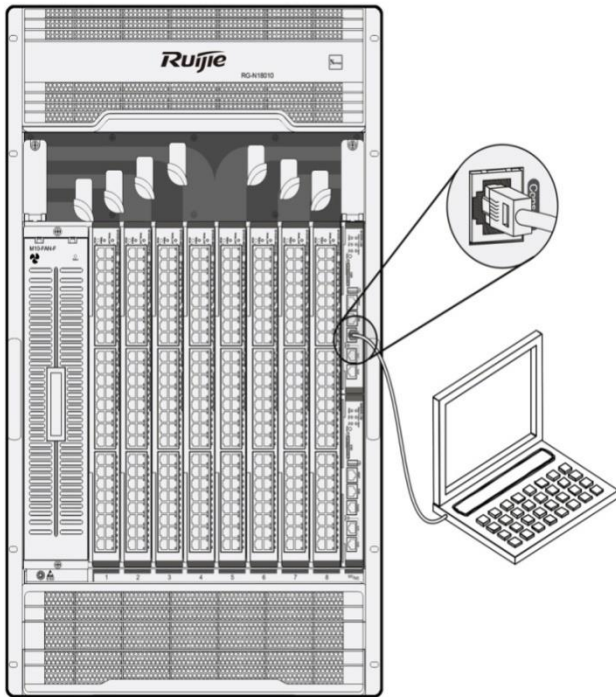
For more detail configuration , see configuration guide for each product . you can download configuration guide at <http://www.ruijienetworks.com>

For more technical enquiry , you can visit Ruijie Service portal at <http://case.ruijienetworks.com> . You need to sign up before submit a case.

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Common Switch Management Modes



1. Console Management

Used when the device is powered on for the first time or during **onsite** commissioning (Most common management mode.)

2. Telnet/SSH Remote Management

Used after initialization of CLI configurations (This management mode is recommended for the remote routine maintenance.)

3. Web-based Management

Used after initialization of CLI configurations (This management mode is used when the device management requirements are relatively simple.)

4. SNMP Management

Used after initialization of CLI configurations (This management mode supports automatic and smart management, and implements graphical management and proactive alarm function.)

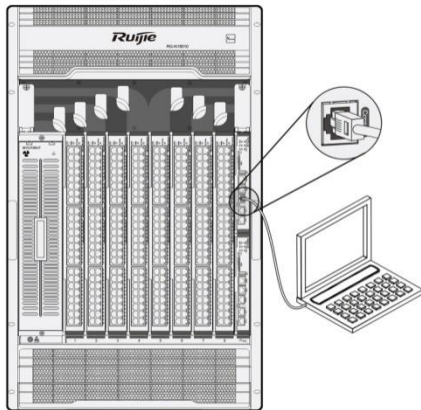
Console Management

Building the configuration environment

Starting the device

Managing the device

If a device is logged in for the first time, you must use the Console port to manage the device. One 8-core shielded cable is required. One end of the cable is an RJ-45 connector, which is inserted to the Console port on the supervisor engine of the switch. The other end of the cable is a DB-9 connector, which can be inserted to a 9-pin serial port on the terminal or the COM port of a laptop computer. (If the laptop computer is not equipped with a USB port, purchase a USB-RS232 cable.)



Configurations required to log in to a device through the Console port:

- Use the HyperTerminal or the CRT tool. (Recommended software: SecureCRT)
- Terminal settings: Baud rate: **9600**; Data bit: **8**; Stop bit: **1**; **No** parity check; **No** flow control (taking the HyperTerminal as an example)

Console Management

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Check the follow items before you power on the switch:

- ①The power cord is correctly connected.
- ②The power supply voltage complies with the requirement of the switch.
- ③The serial cable connections are correct, the terminal (for example, a PC) is started, and parameter settings are completed.

Power on and start the switch:

Note 1: When the device is powered on for the first time, fans run at full speed. After the system enters the main program, the **fan speed will automatically decrease** based on the ambient environment and the noise will be significantly reduced.

Note 2: If the power module is installed in position, but the power not supplied yet (for example, the device is not connected to the power socket, or the power socket is not connected to the power supply), the **Alarm indicator** on the power module will be on **in red**.

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When the device is started, the following information is displayed on the HyperTerminal or the CRT software :

```
Boot 1.2.4-9567cfc (Build time: May 23 2014 - 11:27:43)
DRAM: 4 GiB
NAND: 512 MiB
Flash: 8 MiB
SETMAC: Setmac operation was performed at 2014-03-05 00:23:57 (version: 11.0)
Press Ctrl+C to enter Boot Menu
Bootloader: Done loading app on coremask: 0xf
Starting Devices Initializations... [ OK ]
```

Wait three to four minutes without performing any operation. The device is successfully started, and the message "Press RETURN to get started" is displayed.

```
*Jul 21 17:24:27: %OIR-6-INSCARD: Card inserted in slot 1.
*Jul 21 17:24:27: %7: warning, default install package not exist, auto sync upgrade halt!
*Jul 21 17:24:27: %OIR-6-INSCARD: Card inserted in slot 2.
*Jul 21 17:24:27: %OIR-6-INSCARD: Card inserted in slot FE2.
*Jul 21 17:24:27: %OIR-6-INSCARD: Card inserted in slot FE3.
*Jul 21 17:24:27: %DP-5-PROB: Board probing has completed.
*Jul 21 17:24:27: %DEV_MONITOR-6-DEVICE_INIT: master role init.
*Jul 21 17:24:28: %REDUNDANCY-6-STATES_CHANGE: Redundancy states changed: role master, state alone.
*Jul 21 17:25:12: %LINK-3-UPDOWN: Interface Mgmt 0, changed state to up.
*Jul 21 17:25:12: %LINEPROTO-5-UPDOWN: Line protocol on Interface Mgmt 0, changed state to up.
Press RETURN to get started
```

Press **Enter** to enter the CLI operation window.

| Console Management

Building the configuration environment

Starting the device

Managing the device

Upon initialization, the switch supports CLI management only through the Console port. After the subsequent basic configurations are performed, the switch supports Telnet/SSH remote login and Web-based management.

CLI is a text command interaction interface between users and the switch. You can configure and manage a device or display the outputs to verify the configuration results by typing in text commands and pressing **Enter** to execute the commands.

Introduction to the CLI EXEC mode:

Ruijie> //User EXEC mode: Use limited commands to display related configurations.

Ruijie>en

Ruijie# //Privileged EXEC mode: Use commands to display the system information, manage files, restart the device, debug the device, and so on.

Ruijie#config

Enter configuration commands, one per line. End with CNTL/Z.

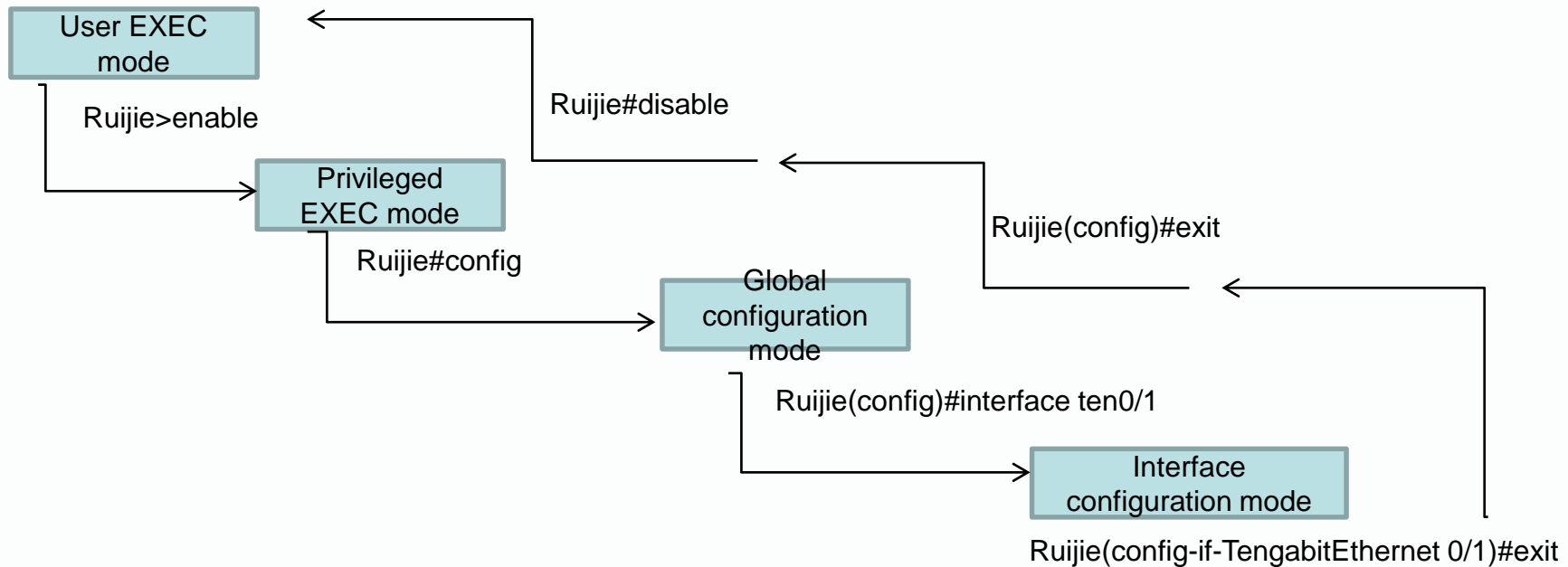
Ruijie(config)# //Global configuration mode: Use commands to configure various parameters.

At the command prompt, you can enter a question mark (?) to list the commands available for each command mode.

Console Management



Switching between different CLI modes



| Console Management

Building the configuration environment

Starting the device

Managing the device

At the command prompt, you can enter a question mark (?) to list the commands available for each command mode.

Note: The command syntax of RGOS11.X is the same as that of RGOS10.X.

Common commands are listed as follows:

Ruijie#show version /show version slots / show cpu /show memory /show interface status /show ip route /show arp /show fan / show power /show temperature...

Ruijie#show run //Displays the current configurations.

Ruijie(config-if-GigabitEthernet 1/1)#**show this** //New function, which is used to display the configuration of the current interface.

Ruijie#wr //Saves the configurations.

Ruijie#ping 8.8.8.8 //Conducts a connectivity test on the device.

Ruijie#traceroute 8.8.8.8 //Conducts a traceroute test on the device.

Ruijie#telnet 192.168.3.254 //Logs in to another device from the local device through Telnet.

Ruijie#debug ip icmp //Diagnoses functions of the device.

Configuring Remote Telnet Management

Building the configuration environment

Starting the device

Managing the device

Configuring Remote Telnet Management



```
Ruijie#config terminal
Ruijie(config)#vlan 100 //Creates a management VLAN. The VLAN ID varies with the actual planning.
Ruijie(config-vlan)#name mgt-vlan
Ruijie(config-vlan)#exit
Ruijie(config)#interface vlan 100
Ruijie(config-if-VLAN 100)#ip address 10.10.10.2 255.255.255.0 //Configures the IP address of the
management VLAN.
Ruijie(config-if-VLAN 100)#exit
Ruijie(config)#ip route 0.0.0.0 0.0.0.0 10.10.10.1 //Configures the static default route.

Ruijie(config)#enable secret ruijie //Configures the enable password.
Ruijie(config)#line vty 0 32
Ruijie(config-line)#password ruijie //Configures the Telnet login password.
Ruijie(config-line)#login
Ruijie(config-line)#exit
```

Configuring Smart Web Management

Building the configuration environment

Starting the device

Managing the device

Configuring Smart Web Management



```
Ruijie#config terminal
Ruijie(config)#enable service web-server //Enables the Web service.
Ruijie(config)#username admin password admin //Configures the local account and password.
Ruijie(config)#username admin privilege 15
Ruijie(config)#ip http authentication local //Uses the local account and password for HTTP login authentication.

Ruijie(config)#vlan 100 //Creates a management VLAN. The VLAN ID varies with the actual planning.
Ruijie(config-vlan)#name mgt-vlan
Ruijie(config-vlan)#exit
Ruijie(config)#interface vlan 100
Ruijie(config-if-VLAN 100)#ip address 10.10.10.2 255.255.255.0 //Configures the IP address of the management VLAN.
Ruijie(config-if-VLAN 100)#exit
Ruijie(config)#ip route 0.0.0.0 0.0.0.0 10.10.10.1 //Configures the static default route.

Ruijie(config)#enable secret ruijie //Configures the enable password.
Ruijie(config)#line vty 0 32
Ruijie(config-line)#password ruijie //Configures the Telnet login password.
Ruijie(config-line)#login
Ruijie(config-line)#exit
```

| More Configurations

Building the configuration environment

Starting the device

Managing the device

The preceding contents are fundamentals for configuration of a switch. For details about function configurations and scenario application guide, see the following documents:

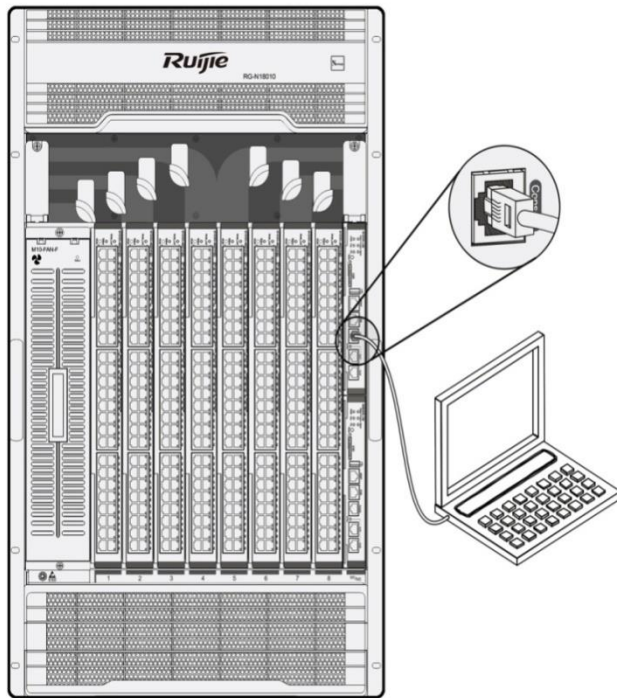
- RG-S8600E Series Switch RGOS Configuration Guide
- RG-S8600E Series Switch RGOS Command Reference
- S8600E trouble shooting guide

If you have used other Ruijie switches running on RGOS 10.X, for example, S12000, S8600, S5750, and S29 series, you will have no difficulty in operating N18000, S86E, and S78E. Although software functions are modularized in RGOS 11.X to improve software reliability and scalability, RGOS 11.X retains the original user habits and a few functions are innovated. (You can learn the innovated functions from documents describing the new features.)

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Switch Upgrade Methods



1. Onsite upgrade using the USB flash drive
Most common, simple, and reliable upgrade method

2. FTP remote upgrade Recommended when engineers cannot go to the site

3. TFTP remote upgrade Simple but the file transfer speed is lower than that in FTP mode

4. U-BOOT maintenance upgrade

Upgrade the system in any of the following cases:

1. New functions are added in the new version to meet new requirements.
2. Existing bugs need to be fixed.
3. The latest official release version for deployment should be used to implement a new project.

Onsite Upgrade Using the USB Flash Drive

Prepare

Upgrade

Verify

Preparations:

- Run the **show version detail** command to display the current version, that is, system software number.
- Verify the upgrade file used by checking Release Notes.
- (Recommended) Copy the upgrade file from the PC to the root directory of the USB flash drive.
- Insert the USB flash drive to the USB port of the supervisor engine. The USB flash drive is automatically identified.

Note: Before removing the USB flash drive from the switch, run the **show usb** command to check the USB ID, and then run the **usb remove xx** command to remove it.



USB flash drive

The system must be the FAT system; otherwise, the NTFS cannot identify the system.

The CMI is delivered together with an 8-GB SanDisk USB flash drive, which is available in the accessory box.



Onsite Upgrade Using the USB Flash Drive

Prepare

Upgrade

Verify

1. On CLI, run the upgrade command.

Ruijie#dir usb0: Checks whether the upgrade file exists on the USB flash drive.

Ruijie#**upgrade** usb0: /xxxxx_install.bin (**xxxx_install.bin** is the upgrade file copied to the USB flash drive)

2. Wait until the upgrade progress reaches 100%, or run the show upgrade status command to check the upgrade progress.

```
N18000#show upgrade status ^  
[slot: M1]^  
  dev_type: ca-octeon-cm^  
  status  : upgrading^  
[slot: 1]^  
  dev_type: ca-octeon-lc^  
  status  : transmission^
```

```
[Slot 1]:Upgrade processing is 100%^  
[slot: M1]^  
  device_name: ca-octeon-cm^  
  Status:      SUCCESS^  
[slot: 1]^  
Aug 12 02:07:30: %7:  device_name: ca-octeon-lc^  
Aug 12 02:07:30: %7:  status:      SUCCESS^
```

3. Wait until the upgrade process of all the line cards, FE cards, and supervisor engines reaches 100% and the result is success, run the reload command to restart the device. (The entire upgrade process generally takes four to five minutes and does not affect services. In this operation, the Flash file on the line card is upgraded, but the earlier version still runs on the memory.) After the device is restarted, the new version runs.

Onsite Upgrade Using the USB Flash Drive

Prepare

Upgrade

Verify

1. Wait three to five minutes until the device is restarted.
2. Run the **show version detail** command to display the version information of the engines/line cards/FEs and line card identification information.

```
Ruijie# show ver detail
System description      : Ruijie High-density IPv6 100G Core Routing Switch(N18010)
System start time       : 2014-07-21 17:23:43
System uptime           : 8:02:28.45
System hardware version : 1.00
System software version : N18000_RGOS 11.0(1)B2
System patch number     : NA
System software number  : M21055007062014
System serial number    : G1HL20H000325
System boot version     : 1.2.4.9567cfc(140523)
System core version     : 2.6.32.eddaea928cf679
System isolcpus         : 2-3
Module information:
  Slot M1 : M18010-CM
    Hardware version    : 1.00
    System start time   : 2014-07-21 17:23:43
    Boot version        : 1.2.4.9567cfc(140523)
    Software version    : N18000_RGOS 11.0(1)B2
    Software number     : M21055007062014
    Serial number       : G1HL20H000325
  Slot 1 : M18000-24GT20SFP4XS-ED
    Hardware version    : 1.00
    System start time   : 2014-07-21 17:23:39
    Boot version        : 1.2.4.9567cfc(140523)
    Software version    : N18000_RGOS 11.0(1)B2
    Software number     : M20153307062014
    Serial number       : G1HL20N0000000
  Slot 2 : M18000-44SFP4XS-ED
    Hardware version    : 1.00
    System start time   : 2014-07-22 21:16:05
```

FTP Upgrade

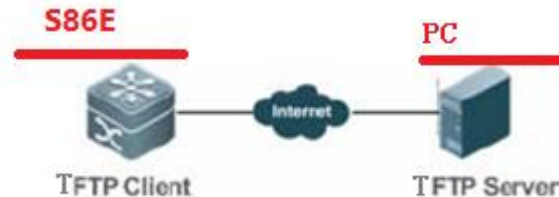


1. Start the FTP server on the device, and designate the root directory as the USB0 root directory. The reference commands are as follows:
Ruijie(config)#ftp-server username admin
Ruijie(config)#ftp-server password ruijie
Ruijie(config)#ftp-server topdir usb0: / //The USB flash drive must be installed in advance on the main engine.
Ruijie(config)#ftp-server timeout 300
Ruijie(config)#ftp-server enable
2. The local PC serves as the FTP client. Start the client software (such as FLASHFTP) and connect to the FTP server . Ensure that the PC can communicate properly with the FTP Server.
3. Use the FTP client on the PC to upload the upgrade file to the FTP server.
4. Run the **upgrade** command. (The subsequent procedures and methods are the same as those in the USB upgrade mode.)

Summary:

The only difference between the FTP and USB onsite upgrade modes lies in the file transfer mode. In FTP upgrade mode, the upgrade file is transferred to the remote device through FTP to meet the remote upgrade requirement. In USB onsite upgrade mode, the upgrade file is directly copied from a PC to the USB flash drive. The subsequent upgrade method is the same. That is, run the **upgrade** command to update the file and then restart the device to finish the upgrade.

TFTP Upgrade



1. Start the TFTP server on the PC and specify the directory of the upgrade file. Ensure that the PC communicates properly with the .
2. The S86E serves as the TFTP client. The upgrade method is the same as that in the common TFTP upgrade mode. Copy the upgrade file to the USB flash drive on the CMI, or to the built-in Flash on the CMII.
Ruijie#copy ftp://192.168.1.1/S86E_20140703_install.bin usb0:/S86E_20140703_install.bin
3. Run the **upgrade** command. (The subsequent procedures and methods are the same as those in the USB upgrade mode.)

Summary:

The only difference between the TFTP and USB onsite upgrade modes lies in the file transfer mode. In TFTP upgrade mode, the upgrade file is transferred to the remote device through TFTP to meet the remote upgrade requirement. In USB onsite upgrade mode, the upgrade file is directly copied from a PC to the USB flash drive.

The subsequent upgrade method is the same. That is, run the **upgrade** command to update the file and then restart the device to finish the upgrade.

The TFTP transmission rate is lower than the FTP transmission rate. Data is transmitted using TCP in FTP mode, and using UDP in TFTP mode. TFTP is simple and easy to use.

Patch Upgrade

Introduction to patch upgrade:

1. 11.X is a modular OS and the bug of a software function can be fixed by using a patch. After the patch is installed, the device can fix the bug and can run normally **without being restarted**. This OS is applicable to the scenario that imposes rigid requirements on the network interruption time during maintenance.
2. A patch is in the uninstalled, installed, or activated state, where:
The installed state indicates that the patch is installed on the memory of the device but the path function does not take effect yet.
Only a patch in the activated state takes effect.

1. Install a patch.

Copy the path file to a USB flash drive, and run the **upgrade** command to install the path.

The reference command is as follows:

```
Ruijie#upgrade usb0: /S86E-octeon-cm_RGOS11.0(1b2)_20140708_patch.bin
```

2. Activate a patch.

The reference command is as follows:

```
Ruijie#patch active slot all ( it means that the patch is currently effective and is ineffective after the device is restarted)
```

```
Ruijie#patch running slot all. (it means that the patch is effective permanently.)
```

3. Display the patch status.

The reference command is as follows:

```
Ruijie#show patch slot all
```

Obtaining Help

Self-service

- Official website of Ruijie Networks:
www.ruijienetworks.com
- Downloading of software and documents:
www.ruijienetworks.com/service.aspx
[ftp: //partnetportal.ruijienetworks.com](ftp://partnetportal.ruijienetworks.com)

Remote technical support

- Fault submission: case.ruijienetworks.com
- Live Chat(Skype): service_rj@ruijienetworks.com