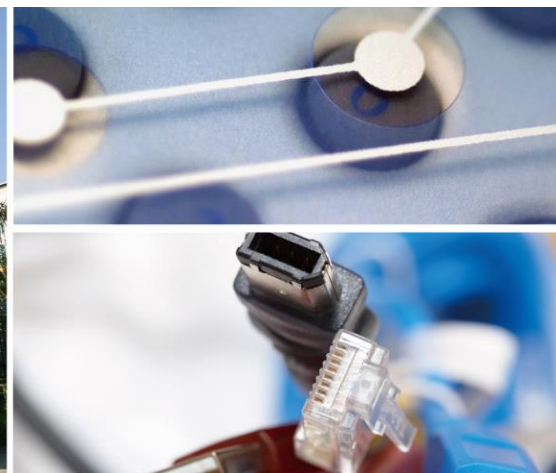


■ Introduction to RG-RSR77-X Series Routers

www.ruijie.com.cn



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.

- The RSR77-X series routers, characterized by high availability, high performance, rich services, and high security, support the enterprise service operation and bearer network construction, effectively improve the network value, and save network construction costs. The RSR77-X series routers are fully compatible with service cards of the RSR77 series routers, and fully integrate rich service features of the RSR77 series routers, thereby protecting production network investment of customers.
- The RSR77-X series switches separate router supervisor from switch fabric modules, and support hot backup of dual supervisors and dual switch fabric modules.
- The RSR77-X series routers include the RSR7708-X router and the RSR7716-X router.
 - The RSR7708-X router adopts six horizontal slots, supports dual supervisors, dual switch fabric modules, as well as redundant backup of supervisors and switch fabric modules. It provides four horizontal service slots and a maximum of eight service processing module slots.
 - The RSR7716-X router adopts 11 horizontal slots, supports dual supervisors, dual switch fabric modules, as well as redundant backup of supervisors and switch fabric modules. It provides 8 horizontal service slots and a maximum of 16 service processing module slots.

Product Overview

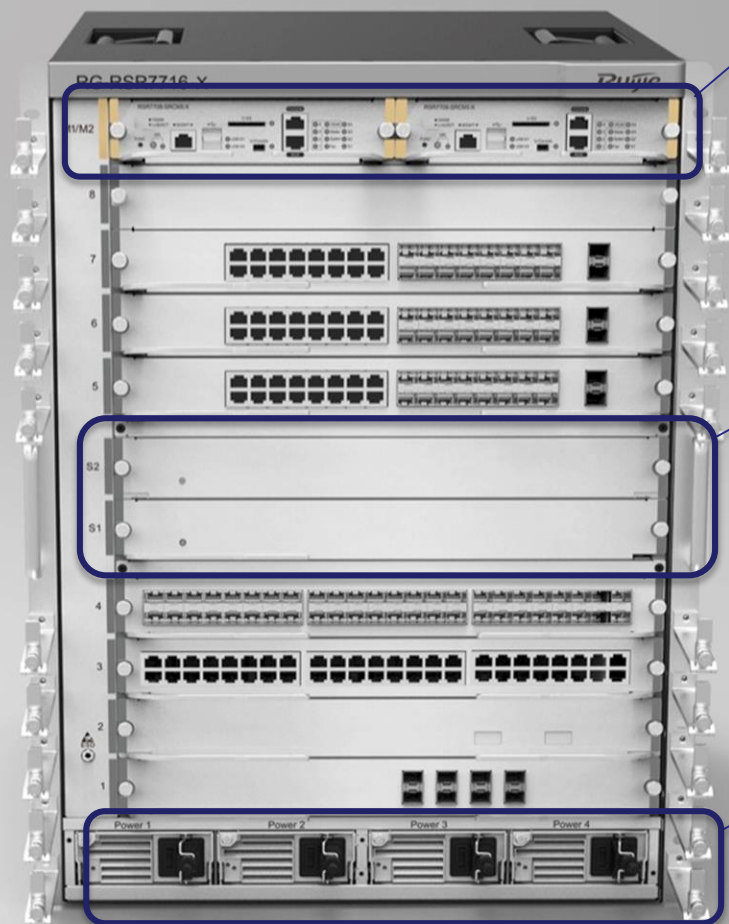
Ruijie 锐捷网络



RSR7708-X, RSR7716-X

RSR7704, RSR7708, RSR7716

Product	RSR7704	RSR7708	RSR7716	RSR7708-X	RSR7716-X
Switching Capacity	160Gbps	320Gbps	960Gbps	16Tbps	32Tbps
Forwarding Performance	120Mpps	240Mpps	480Mpps	2880Mpps	5760Mpps
Service Line Cards	2	4	8	4	8
Service Sub Cards	4	8	16	16	32



Supervisor slot x 2

The supervisors of the router are separated from switch fabric modules, and hot backup of dual supervisor and dual switch fabric modules is supported.

Switch fabric module slot x 2

Independent slots are provided for dual switch fabric modules and the active/standby and active/active work modes are supported.

Power module slot x 4

AC and DC power modules, and the N+N redundancy mode are supported.



Partitioned redundant fan module x 1

The device uses three heat dissipation partitions separated physically, which is exclusive in the industry and effectively improves the ventilation efficiency. The embedded fan tray redundancy mechanism of the module helps prevent single points of failure.

Dustproof filter

Partitioned redundant fan module x 1

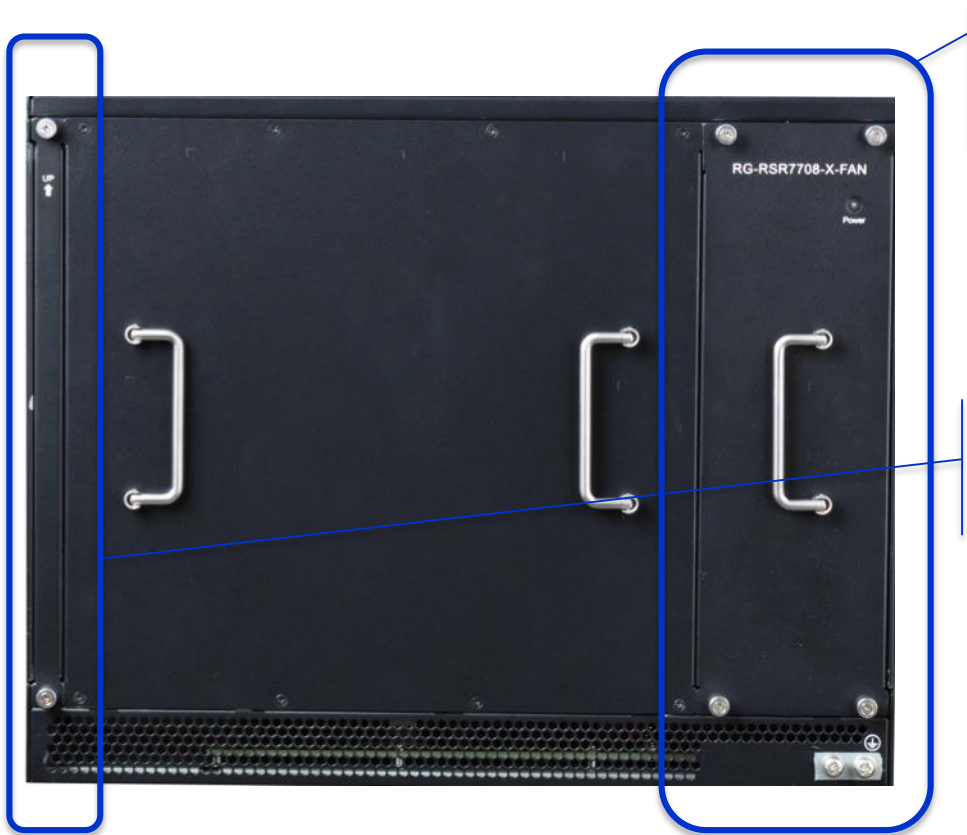
Partitioned redundant fan module x 1

Supervisor slot x 2

**Switch fabric module slot
x 2**

Power module slot x 2



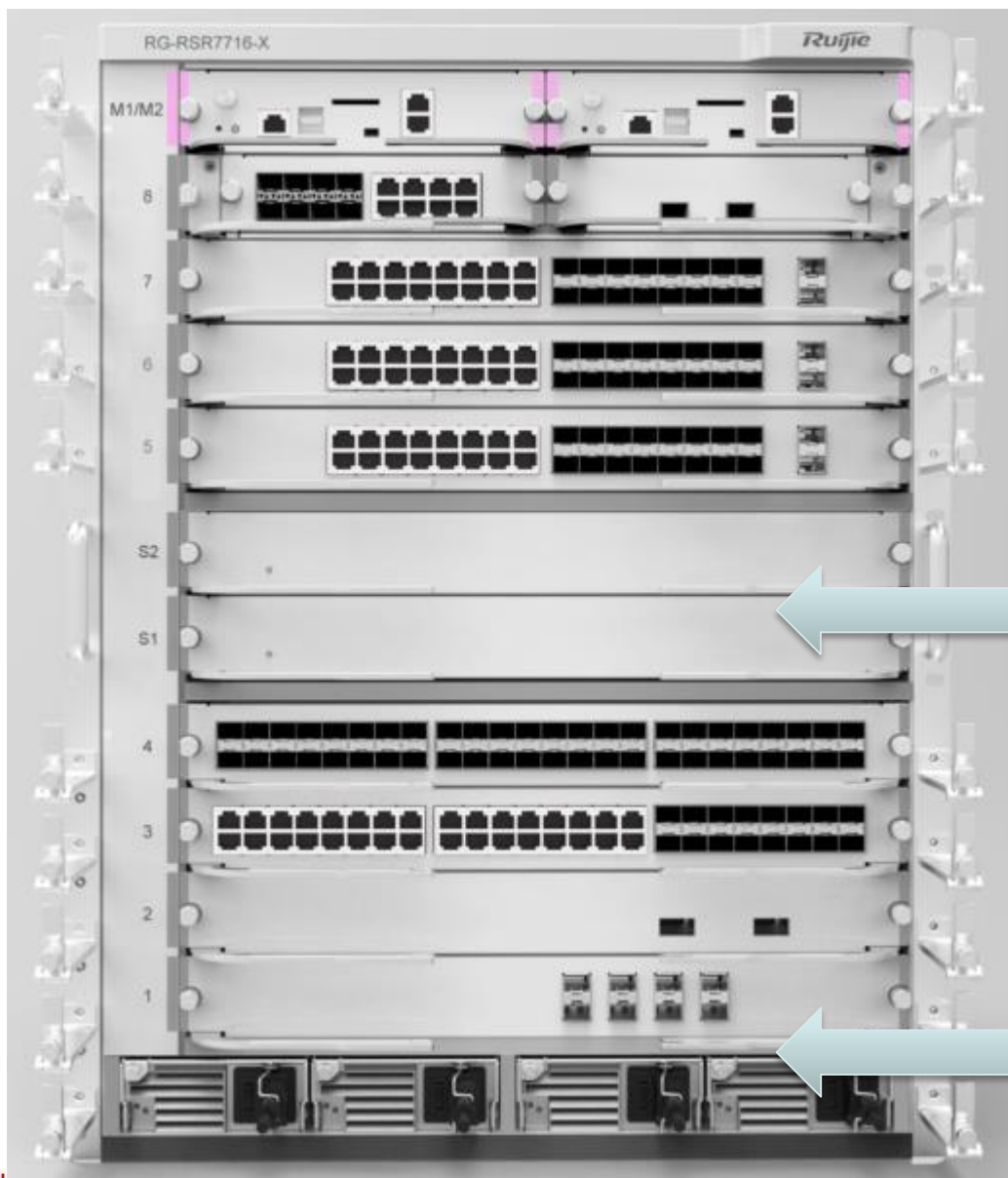


Fan module

The embedded fan tray redundancy mechanism of the module helps prevent single points of failure.

Dustproof filter

Availability - Improved Greatly



Enhanced zero packet loss
Independent switch fabric
modules

Universal power supply
N+N power modules

RSR7716/08-X Available Modules

Modules in blue font are added to the RSR77-X series routers and are not supported by the RSR77 series routers.

The RSR77-X series routers do not support the modules in red font.

		RSR7708/16	RSR7708/16-X	
Host	Chassis	RG-RSR7708	RG-RSR7708-X	
		RG-RSR7716	RG-RSR7716-X	
	Control engine	RSR7708-SRCMI	RSR7708-SRCMI-X	
		RSR7716-SRCMI	RSR7716-SRCMI-X	
Switch fabric module	None	RSR7708-SF-X		
	None	RSR7716-SF-X		
Power module	RG-PA300I	RG-PA600I/RSR-PA1600I		
SIP	SIP (universal)		RSR77-SIP1	
			RSR77-SIP2	
			RSR77-SIP-1	
Line card	FNM card (universal)	FNM-16E1/CE1 FNM-1POS-STM16 FNM-4POS-STM1		
		FNM-2CPOS-STM1 FNM-1CPOS-STM1 FNM-4GE-1		
	DFNM card (earlier cards are universal)	DFNM-2XFP	DFNM-8GE	DFNM-16GE
		DFNM-48SFP	DFNM-32GT/16SFP	
	None	DFNM-16GE/2XS		
NME/DNME card	NME-1POS-STM1 NME-6FE NME-1ATM-STM1			
	NME-4HS DNME-8E1/CE1 DNME-SEC			

The maintenance and configuration modes of the RSR77-X series routers are consistent with those of the RSR77 series routers. The major difference is that the supervisors of the RSR77-X series routers are separated from switch fabric modules, and the installation method of the separated supervisors and modules is similar to that of other line cards.

View the installation status of switch fabric modules:

```
RSR7708-X#show version slots
Dev Slot MaxPorts Configured-Module Online-Module Status
-----
1 M1 1 RSR7708-SRCMI-X RSR7708-SRCMI-X master
1 M2 none
1 F1 0 none
1 F2 0 RSR7708-DSF-X RSR7708-DSF-X active
1 1/0 0 none
1 2/0 0 none
1 3/0 0 none
1 4/0 0 RSR77-SIP1-X RSR77-SIP1-X running
1 4/1 2 FNM-2XS FNM-2XS running
1 4/2 8 FNM-8GE FNM-8GE running
```

Switch the active/standby switch fabric module:

```
RSR77-X#redundancy forceswitch dsf
```

Maintain the switch fabric module table:

The software of switch fabric modules does not need to be upgraded.

Switch fabric modules only internally forward data, their entries are invisible externally, and the entries do not need to be viewed or maintained.

Maintenance: RSR77-X - Intelligent Fans

The RSR7708-X router is equipped with one fan tray that contains nine fans. The fan tray is hot swapping. It supports intelligent fans, which intelligently adjust the speed based on the actual environment. When the temperature of the main chip of cards is very high, fans run at full speed.

```
rsr7708-X-KJ#sh environment fans
FanTray-1, Status OK, Speed 40%, Current Temperature 29
Slot  Status  Fan Speed(RPM)
```

Slot	Status	Fan Speed(RPM)
1/1	OK	3450
1/2	OK	3450
1/3	OK	3600
1/4	OK	3600
1/5	OK	3600
1/6	OK	3750
1/7	OK	3600
1/8	OK	3600
1/9	OK	3450

The RSR7716-X router is equipped with three fan trays, which are in the upper, middle, and lower positions and are controlled independently. The fan trays are hot swapping. It supports intelligent fans, which intelligently adjust the speed based on the actual ambient environment. When the temperature of the main chip of cards is very high, fans run at full speed.

```
rsr7708-X-KJ#sh environment temperature
Slot  Module-type  Current(°C)  Warning(°C)
```

Slot	Module-type	Current(°C)	Warning(°C)
Slot-M1	RSR7708-SRCMI-X	28 - - - -	90
Slot-F1	RSR7708-DSF-X	26 27 - - -	100
Slot-F2	RSR7708-DSF-X	26 28 - - -	100
Slot-1/0	DFNM-16GE	29 34 48 - 36	95
Slot-2/0	DFNM-16GE/2XS	29 37 46 92 44	95
Slot-3/0	RSR77-SIP1	- - - - -	95
Slot-3/1	FNM-1CPOS-STM16/4CPOS-STM4	- - 49 - -	95
Slot-3/2	FNM-2XS	- - 46 - -	95
Slot-4/0	RSR77-SIP1	- - - - -	95
Slot-4/1	FNM-2CPOS-STM1	- - - - -	95
Slot-4/2	FNM-16E1/CE1	- - - - -	95
FanTray-1	RSR7708-FAN-X	- - - - 27	-
Power-1	RG-PA1600RI	- - - - 40	-

```
Current Temperature Description
Column 1: inlet
Column 2: outlet
Column 3: core area 1
Column 4: core area 2
Column 5: others
rsr7708-X-KJ#
```

The 600 W power module is not recommended for the RSR7716-X router and the 1600 W power module is recommended.

The device power consumption can be calculated using a formula.

**Totally power consumption = Supervisor + Fabric engine +
Line cards + Fan**

RSR77-X - Intelligent Power Module

Power configuration: On either RSR7708-X or RSR7716-X routers, if no 16GE/2XS module is configured, 600 W power module is sufficient . If a 16GE/2XS module is configured, the 600 W power module is insufficient and the 1600 W power module is required.

The RSR77-X series routers support mixed insertion of the 600 W and 1600 W power modules. **[not recommended]** The routers work in redundancy mode first. If the power is insufficient to sustain the router running in redundancy mode, the routers automatically switch to the non-redundancy mode and give alarms, requesting users to configure power supply to enable the routers to work in redundancy mode. The 600 W and 1600 W power modules support mixed insertion. The redundancy mode of the routers adopts 600 W power modules.

If the device power is insufficient to sustain card running, the OAM powers off a card with a larger slot ID till the device power is capable of sustaining the running of all the remaining cards.

If the power modules work in non-redundancy mode, users need to add power modules to ensure that the device works in redundancy mode. Users can run a command to disable the function of logging non-redundancy mode alarms.

Command: power non-redundant warning disable

```
rsr7708-X-KJ#sh environment powers
```

```
Power Supply      : 1600W
Power Consumed    : 969W
Power Reserved    : 45W
Power Mode        : Non-redundant
```

```
Power Supply information:
```

Power-ID	Power-Type	Supply(W)	Status
Power-1	RG-PA1600RI	1600	OK
Power-2	N/A	N/A	N/A

```
Power Consumption information:
```

Slot	Module-type	Status	Consumed(W)
------	-------------	--------	-------------

Reserve(W)	Slot	Module-type	Status	Consumed(W)	
	Slot-M1	RSR7708-SRCMI-X	ON	45	0
	Slot-M2	-	OFF	0	45
	Slot-F1	RSR7708-DSF-X	ON	20	0
	Slot-F2	RSR7708-DSF-X	ON	20	0
	Slot-1/0	DFNM-16GE	ON	110	0
	Slot-2/0	DFNM-16GE/2XS	ON	230	0
	Slot-3/0	RSR77-SIP1	ON	110	0
	Slot-4/0	RSR77-SIP1	ON	110	0
	FanTray-1	RSR7708-FAN-X	ON	324	0

```
rsr7708-X-KJ#
```

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