

# RG-RSR30-X Router Series Datasheet

Ruijie Networks Co., Ltd.

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# 1 Product Pictures



RSR30-X-SPU10 Router



LPU-4HNM Line Card Box



RG-RSR30-X Series Router and Line Card Box

## 2 Product Overview

Ruijie RG-RSR30-X Series has taken box router to a whole new level. To adapt to general scenarios, Ruijie delivers a cutting-edge and flexible design consisting of two components - router RG-RSR30-X-SPU10 and line card box RG-LPU-4HNM (connection via high-speed cable). The highly flexible construction allows users to select accessories based on the actual deployment, offering unparalleled cost savings among alternatives in the market.

The RG-RSR30-X-SPU10 router offers 9 fixed Gigabit copper ports and 8 Gigabit fiber ports. The router can run independently or achieve isolation of routing engine and service forwarding engine by inserting dual control modules into the HNM slot. The Series guarantees users with highly reliable and stable performance.

The RG-RSR30-X Series fully inherits Ruijie VCPU, REF and X-Flow technologies to deliver full protection against traffic attack and guaranteed multiservice deployment with advanced QoS. The pair is highly scalable and configurable to support multiple interfaces. Built-in with a range of integrated multiservice features, NAT, IPFIX, IPv6, BGP, IPsec, MPLS VPN, H-QoS and multicasting are readily available to adapt to various deployment environments.

The innovative RG-RSR30-X Series boasts great availability, high performance, multiservice, outstanding security, hot-swapping and standby features. The router fully supports business operation and network construction, delivering a solution that enhances network values and minimizes implementation costs at the same time.

## 3 Product Features

### Flexible Deployment and Minimized Costs

- The design consists of a pair of router and line card box. Users can invest on the latter whenever necessary for exceptional cost savings.
- Users can flexibly deploy using the router and line card box as building blocks (e.g. one router teams up with two line card boxes or two routers connects with one line card box). The Series fulfills the requirements of various scenarios with full service guarantee.
- By inserting control module into the HNM slot, the router can achieve isolation of routing engine and service forwarding engine. The arrangement smoothly delivers a highly reliable and stable solution to support various demanding scenarios.

### Leading Hardware Processing Technologies

- Built on the non-blocking architecture, the Series adopts Ruijie's unique VCPU and multithreading technologies with industry-leading multicore processor to achieve isolation of data forwarding plane and protocol control plane. The design enables load balancing among multiple cores. Also, it allows demand-based resource allocation for processing cores. When the device is processing protocols and control packets, the system can allocate more resources to the respective processing core. When the device is handling an increased load of packet forwarding, the related processing core can receive more resources to complete the task. The Series thereby realizes easy resource management and control.
- The Series supports control plane CPU protection, distributive, multi-level process packet recognition and QoS mechanism. It also supports packet policy management of user-defined CPU.

### Mature and Stable Operating System

- With Ruijie's developed RGOS operating system, the Series offers three key features - complete modular design, advanced openness and robust security.
- Complete Modular Feature: Under the modular operating system, all the functions and processes are completely separated from each other. The greatest advantage of modular design is to achieve mutual failure isolation to maximize the system stability. Another highlight is that developing new function will have zero impact on the existing ones. The Series hence speeds up the availability of new functions and technologies for users.
- Advanced Openness: RGOS has a "hardware abstract layer", allowing connection with different devices through the respective hardware drivers. All Ruijie routers and switches are available on the RGOS operating system. In the future, the scale will cover wireless, storage and security products. RGOS also features POSIX (Portable Operating System Interface), which is an international standard interface allowing operating system core to dispatch and communicate with various POSIX-compliant modules.
- Robust Security: Ruijie RGOS guarantees network security from the operating system end by an extensive range of technologies. Such include RNS traffic management, protection against attack, stateful firewall and so on. These technologies enhance stable operation in complicated scenarios.

## Built-in High-Performance Service Features

- Features such as NAT, IPv6, BGP, IPsec, MPLS VPN, H-QoS and multicasting are readily available. Users do not need to purchase additional software license or service module, thereby maximizing cost savings.
- The Series supports built-in flow visualization. With the international standard Internet Protocol Flow Information Export (IPFIX) technology and up to 1:1 sampling, the Series achieves 24/7 network traffic monitoring to timely discover abnormal traffics and failure risks, ensuring network health and reliable operation. Adopting Ruijie's patented X-Flow technology, the Series can perform traffic sampling without affecting the performance of the router.
- VPN features such as IPsec, GRE and L2TP are ready to facilitate the mobile broadband private network construction of enterprises using 3G/4G. The Series provides strong processing capacity. Take SM1 encryption as an example, the encryption performance is up to 1Gbps.
- With high-performance and flexible QoS, the Series achieves refined management and control of network traffic. It offers queue scheduling, congestion avoidance, congestion management, traffic monitoring, traffic shaping, priority labeling, etc. The Series precisely guarantees bandwidth, latency, jitter and packet loss rate of different services. It satisfies "service partitioning" for various users and services. The Series also supports up to 5 levels of H-QoS features for uplink and downlink, enabling QoS deployment with high performance and centralized management.

## Highly Efficient Distributive Forwarding Technology

- The Series adopts Ruijie's unique REF, a high-speed packet forwarding technology. A high-speed forwarding table can be generated prior to packet forwarding. The system can hence directly process packet forwarding based on the table. It avoids going through the data link and network layers so as to boost the forwarding efficiency.
- Through the X-Flow technology, the forwarding performance basically will not be affected even when services such as QoS, ACL, NAT and PBR are enabled on the processing plane.

## Strong Routing Processing Capabilities

- IPv4/IPv6 static routing and various dynamic routing protocols are supported in order to meet different networking requirements. Additionally, the Series enables the policy routing feature which can flexibly control and dispatch network traffic in order to meet routing demands in the financial industry, government, enterprises, etc.
- The advanced X-Flow and fast-forwarding technologies together with leading features such as GR, FRR and BFD improve the convergence mechanism of the traditional routing protocols to achieve fast convergence of large-scale networks.

## Robust Security Design

- The Series supports targeted security access control from the link layer to the application layer for MAC address, VLAN, URL, etc. The built-in stateful firewall provides hardware anti-attack feature from the device ports to CPU. The flexible access policy helps clients to set the device access privilege.
- For cross-WAN VPN communication, the Series adopts the SM1/2/3/4 encryption algorithm of the highest security level from the Office of State Commercial Cryptography Administration to ensure end-to-end secure access of enterprise headquarters and

branches.

## Comprehensive MPLS VPN Feature

- The Series fully supports the Multi-Protocol Label Switching (MPLS) Protocol, distributed Layer 2 and Layer 3 VPN services. It also provides high-performance, security and multi-layer MPLS VPN solutions.
- Distributed multicast VPN is also supported. It can enable the high-performance multicast service online in the MPLS VPN network in order to guarantee multicast services such as video conferencing and distant learning.

## IPv6 Ready

- The Series supports various IPv6 routing technologies, such as static routing, equivalent routing, policy routing, OSPFv3, Routing Information Protocol Next Generation (RIPng), BGP4+ and IS-ISv6 to meet the future requirements of large-scale IPv6 network deployment.
- The Series also delivers multiple IPv6 transition technologies, such as dual stack, manual channel, Site Automatic Tunnel Addressing Protocol (ISATAP), and IPv6-to-IPv4 tunneling. By using these transition technologies, a smooth transition from the IPv4 network to the IPv6 network can be implemented.
- Additionally, the Series enables address automatic configuration and a wide range of IPv6 technologies such as ICMPv6, ICMPv6 redirection, ACL for IPv6, TCP/UDP for IPv6, etc.
- Full IPv6 compatibility can maximize the value of customers' existing investments and enable smooth migration from the current IPv4 network to IPv6 network.

## Carrier-Class Reliability

- Dual control engines: to avoid single point of failure.
- Key module redundancy: routing engine redundancy, power redundancy, double boot mapping files.
- Hot-swapping of key components: routing engines, service boards/modules, power/fan modules
- Modular software design: adopt full modular design to significantly lower the coupling correlation of each functional module and enhance software stability
- Wide selection of backup mechanisms: support Virtual Router Redundancy Protocol (VRRP) and integrates with Bidirectional Forwarding Detection/Device Link Detection Protocol (BFD/MLDP) to implement VRRP switchover. Additionally, link backup and the routing backup are supported.
- Unified RGOS operating system: All RSR series routers use the same RGOS operating system for easy maintenance.

## Flexible Device Management

- The Series supports user classification management and password protection. By using the multi-core CPU technology, the isolation of control and forwarding can be achieved. Devices can be managed in any environment. In terms of user authentication, different management privileges are granted to users of various levels in order to ensure the device security.



## Simplified VPN Deployment and Management

- The Series adopts Ruijie's unique VPN solution to achieve centralized VPN configuration. It enables zero configuration for access, VPN differentiation configuration and automatic negotiation deployment. The solution hence supports VPN deployment of massive branches with centralized remote maintenance.

## Energy Saving Design

- The Series truly embodies Ruijie's environmental protection and energy saving philosophy. The innovative design improves the conventional power supply. Power supply is required only upon demand for the router and line card box to save the overall power consumption.

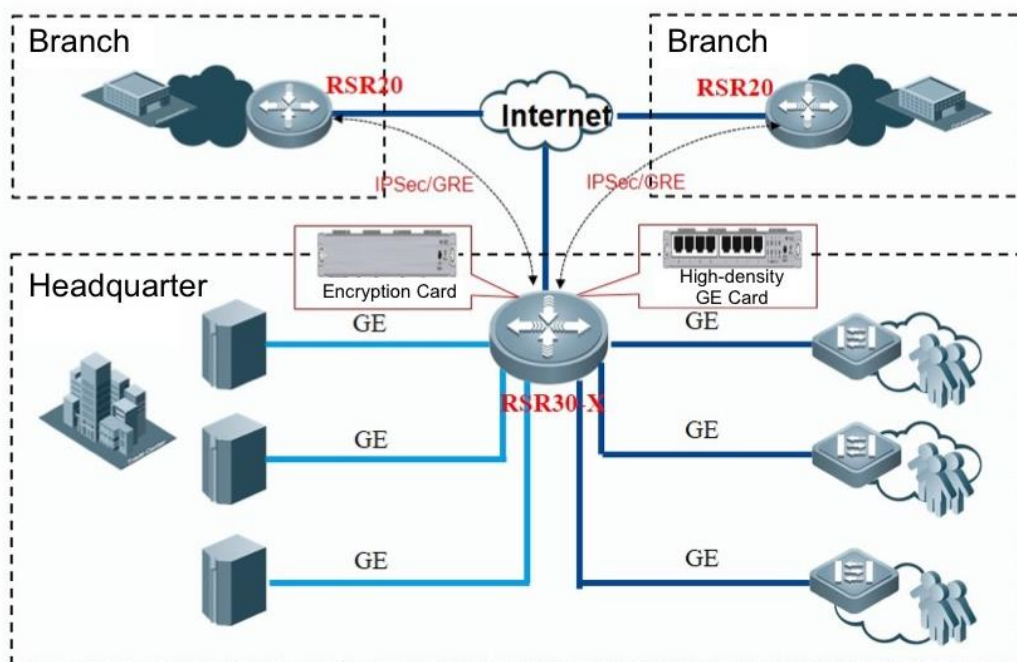
## 4 Technical Specifications

Product Model	RG-RSR30-X-SPU10 Router
Line Card Boxes Supported	2
Service Slots	10
USB	1 USB2.0 port
Fixed Ethernet Ports	9-port GE (8 are combo)
SD Slot	1
Memory	2G
Forwarding Performance	7-60Mpps
Fixed Ports on Routing Engine	1 USB2.0 port, 1 USB-Console port, 1 MGMT port, 1 Console port 1 FUNC button, 1 OFL button
Available Module	E1/CE1 10GE/GE/FE OC-3/STM-1 CPOS National encryption algorithm module
Dimensions (W x D x H) (mm)	440 x 435 x 44.2
Weight	≤9KG
Power Supply	Dual power supplies, AC/DC
MTBF	> 437,864 hours
Temperature	Operating temperature: 0°C to 50°C Storage temperature: -40°C to 70°C
Humidity	Operating humidity: 10% to 90% RH Storage humidity: 5% to 95% RH

## 5 Typical Applications

The RG-RSR30-X Series is specifically designed for IP MAN, enterprise gateway or to be deployed at the convergence layer in various large-scale IP networks. Featuring high availability, outstanding performance, multiservice, superior security, hot-swapping, and hot backup, the Series fully supports the service operation of industrial and enterprise users and the construction of bearer networks, effectively enhancing network values and reducing implementation costs.

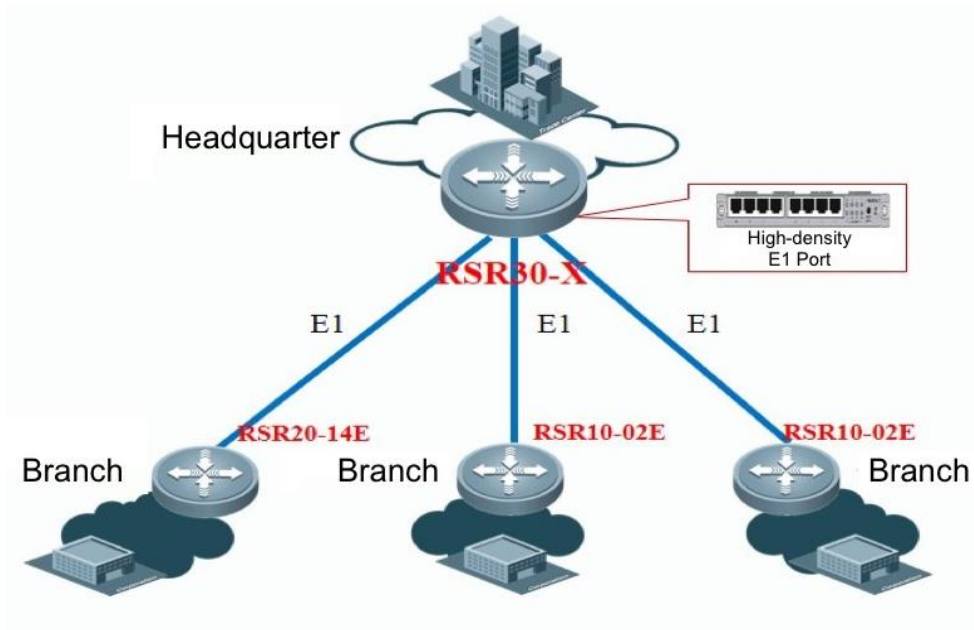
### Center and Branch Security Encryption Network Solution (High-density GE)



Application features:

- The center (headquarter) deploys Ruijie RG-RSR30-X aggregation router series. The device can connect to the internal server and enable user access through the built-in 9 GE ports or additional HNM-GE interface board.
- The center (headquarter) implements encryption tunnel using the national encryption card for guaranteed data transmission security.

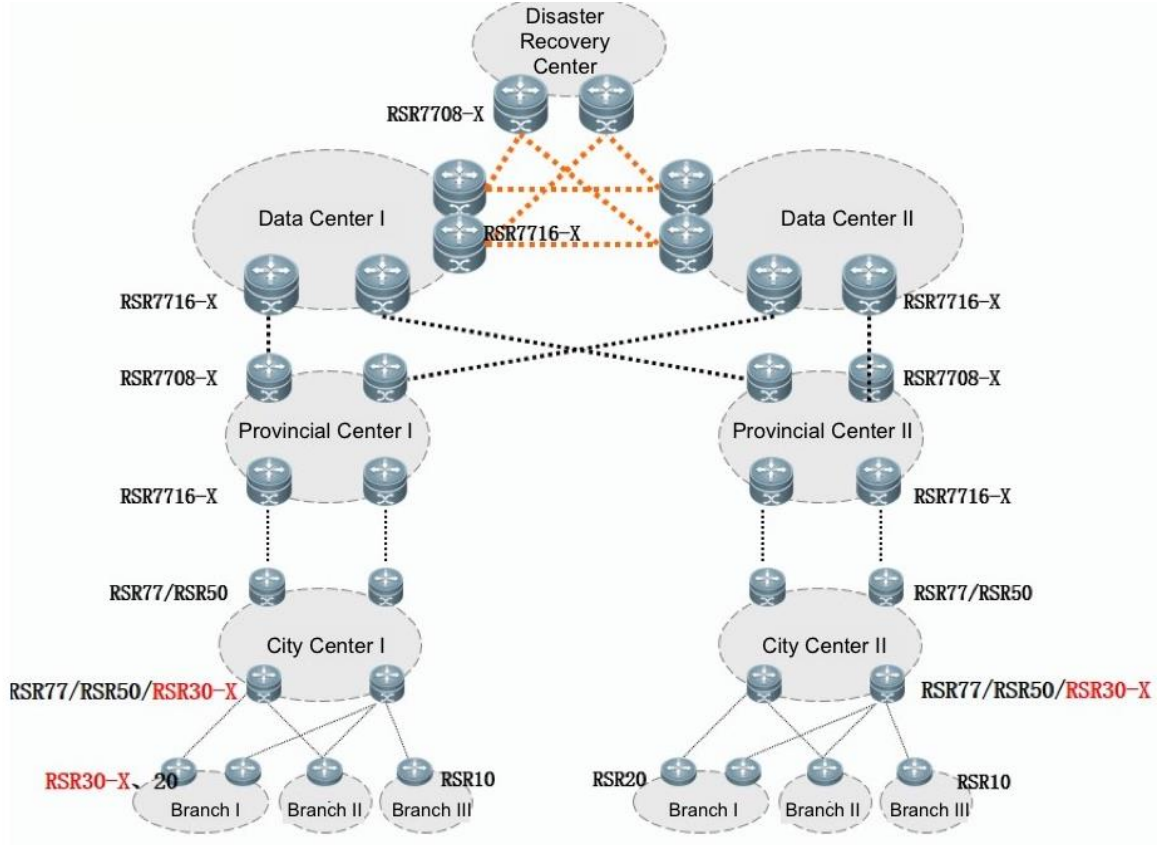
## Center and Branch Security Encryption Network Solution (High-density E1/CE1)



Application features:

- The center (headquarter) deploys Ruijie RG-RSR30-X aggregation router series. The device can connect to the branch router through the HNM-8E1/CE1 board.

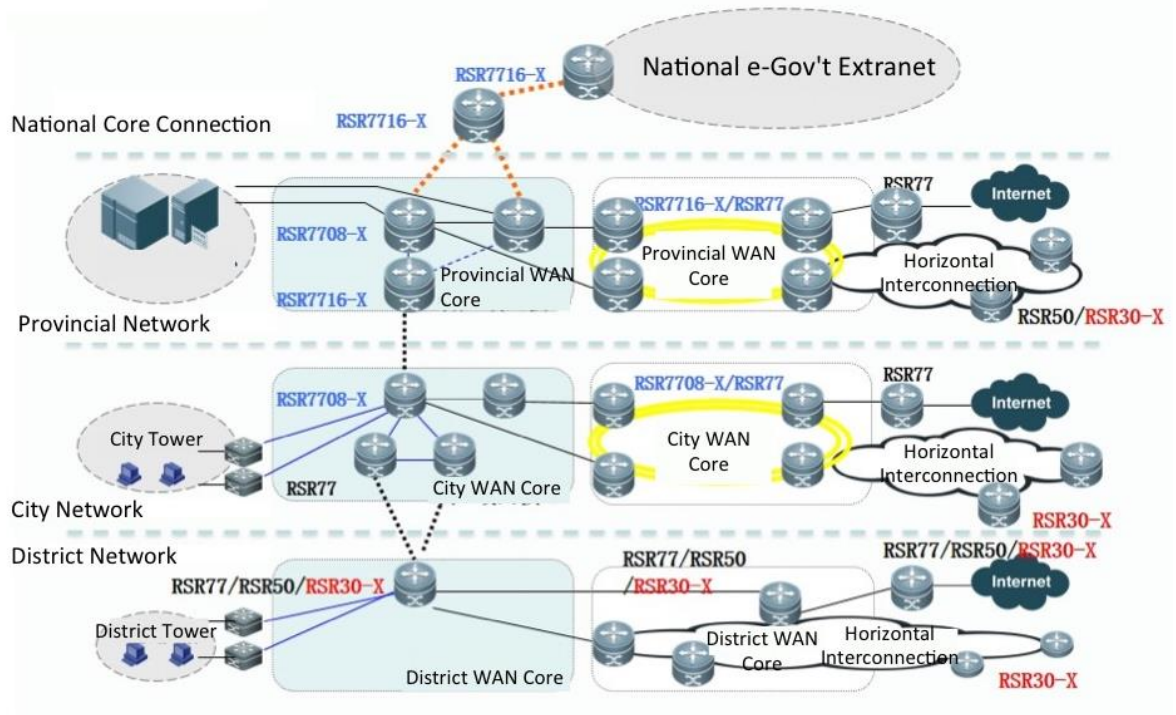
## Vertical Network Solution



Application features:

- The RG-RSR30-X Series can team up with RG-RSR77-X, RG-RSR77 and RG-RSR50 series to form an overall solution for the whole network. The solution can fully fulfill the needs of government, energy, finance and other large to medium enterprises.

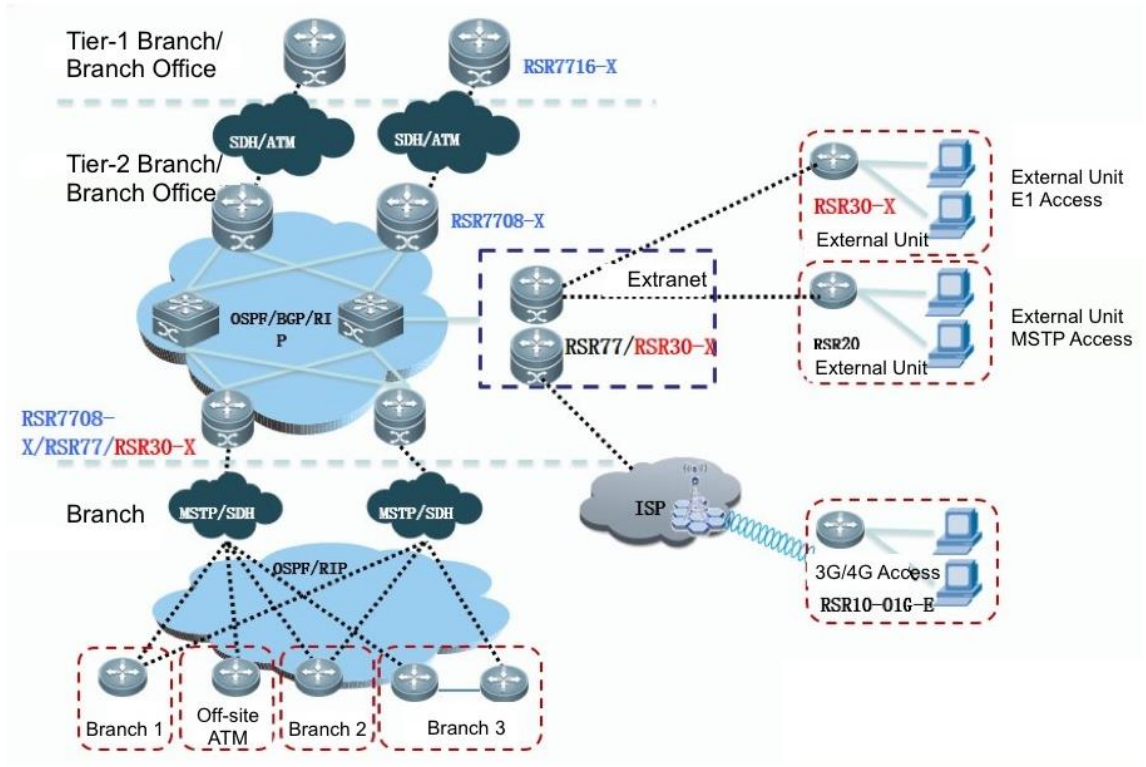
## Government Core Network Solution



Application features:

- The RG-RSR30-X Series fully supports government MPLS VPN solution and provides multiple link access.
- The solution is an ideal match for e-Government intranet and extranet, government departments and units.

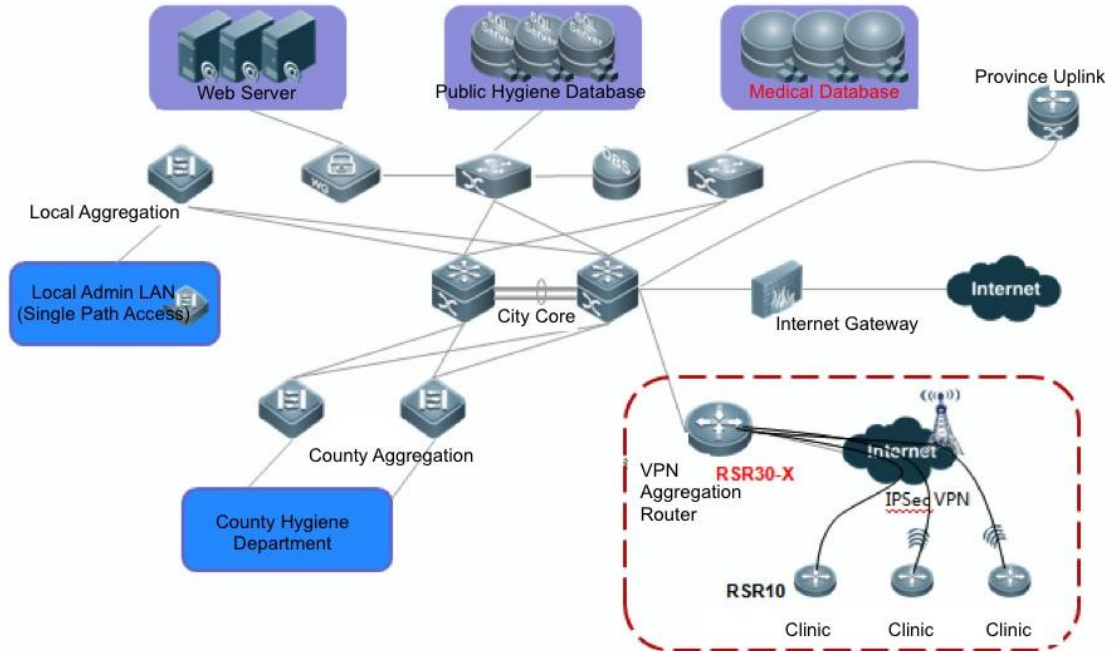
## Finance Core Network Solution



Application features:

- The RG-RSR30-X Series supports large-capacity branch aggregation. It can guarantee high performance even when multiservice is enabled. The solution allows all tier-2 branch wired links and 3/4G link access. And it can carry out aggregation in the extranet area, fully meeting requirements of the finance industry including bank, insurance, postal office and so on.

## Medical Network Solution



Application features:

- Unified VPN configuration for access devices
- Zero configuration for online access
- VPN differentiation configuration and automatic dynamic negotiation
- Branch fast VPN deployment for remote centralized maintenance



## 6 Ordering Information

<b>RG-RSR30-X Series Router</b>	
Model	Description
RG-RSR30-X-SPU10	RG-RSR30-X Series Router (dual power supplies, 9 fixed GE ports (8 are combo), 2 HNM slots, support hot-swapping). Power supply sold separately.
<b>RG-RSR30-X Series Line Card Box</b>	
Model	Description
RG-LPU-4HNM	RG-RSR30-X Series Line Card Box (40G copper cable for router connection included). 4 HNM slots, dual power supplies, support hot-swapping. Power supply sold separately.
<b>Router Accessories</b>	
Model	Description
RSR30-X Routing Engine	
RSR30-X-SPU10 Supporting Line Card Box	Optional. For LPU module expansion.
RG-RSR30-X DC Power Module	At least one for RG-RSR30-X-SPU10 and LPU respectively.
<b>Service Cards</b>	
Model	Description
8-port E1/CE1 Module	Separate adaptor and cable required.
Encryption Module	
8-port Gigabit copper + 2-port Gigabit fiber Module	Separate SFP module required for fiber port.
1-port OC-3/STM-1 CPOS Module	Separate SFP module required.

## 7 More Information

For more information about the RG-RSR30-X Router Series, please visit <http://www.ruijienetworks.com> or contact our local Ruijie account representatives.

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