

# RS 2000/2100: Switch Router Family



## Service Provider Requirements

- Metro access platform for in building termination
- Metro network buildout with Gigabit, POS, ATM, T1/E1 and T3/E3 connectivity
- Flexible, regional Service Provider POP aggregation router
- Compact, feature-rich switch router for content hosting and colocation environments

## Overview

Riverstone Networks' compact RS 2000 and 2100 are the industry leading low cost wire-speed switch routers. Key applications include metropolitan area access and content/application hosting environments where performance, versatile connectivity and space are at a premium. The RS 2000 family delivers wire-speed, standards based IP switching and routing both unicast and multicast and supports a full complement of WAN interfaces.

The RS 2000 and 2100 are the only switch routers proven to maintain wire-speed layer 2/3 and 4 switching and routing with all features enabled. Prioritization, filtering or Quality of Service (QoS) policies can be extended across the entire network, to allocate appropriate resources to groups of users, or specific applications. This feature-rich application-aware platform enables pinpoint control of bandwidth and is optimized for establishing and policing Service Level Agreements (SLA's). Detailed accounting information can be gathered enabling direct confirmation that SLAs are being met. Accounting capability is enabled through the standards-based Lightweight Flow Accounting Protocol (LFAP).

## Customer Challenges & RS 2000/2100 Solutions

Challenge	Solution
Continually reconfiguring networks to implement new services as the customer base grows	Wire-speed VLANs (802.1Q) allow easy overlay of new services regardless of network topology
Establishing tiered services without degrading routing performance while having pinpoint control	Implementing hardware-based traffic management features including rate limiting, prioritization and a variety of queuing schemes enabling SLA management and standards-based Lightweight Flow Accounting Protocol (LFAP)
Implementing flexible network addressing schemes without the cost of expanding the available address pool	Wire-speed NAT enables the service provider to implement IP addresses based on demand without the need to purchase new addresses
Rapidly build out new services without the need to buy several platforms	Full complement of WAN interfaces from T1/E1 to 70km Gigabit Ethernet to POS and ATM ensures rapid deployment in multi-building rollout.



# RS 2000/2100: Technical Specifications

## Platform Features

### Highly Fault Tolerant

- Redundant power supply
- Standards-based VRRP

### Feature-rich, Wire-speed LAN/WAN Services

- VLANs based on port or protocol
- IP routing, unicast and multicast
- Security (ACLs, L2 filters)
- Layer-4 application flow switching & QoS
- Network Address Translation (NAT)
- Server Load Balancing (LSNAT)
- Hardware-based WAN compression and encryption

### Extensive Management

- Wire-speed Full RMON/RMON2
- SNMP manageable
- Telnet Client
- RS-232 (Out-of-band management)
- Command Line Interface (CLI)

## Interfaces

10/100 Base TX  
100 Base FX  
1000 Base SX  
1000 Base LX  
Serial T1/E1, T3/E3

## Ordering Information

### Part No. Product Description

G20-B	RS 2000 base unit: 16 port 10/100 Base TX with two expansion slots. Includes redundant power supplies and RS Router Services software
G21-B	RS 2100 fixed configuration: 8-port 1000 Base SX. Includes redundant power supplies and RS Router Services software

For complete ordering information, including specific modules, contact your Riverstone representative at **(408) 878-6500**. You may also visit our Website at [www.riverstonenet.com](http://www.riverstonenet.com)

## Technical Specifications

### Capacity and Performance

Up to 4,096 VLANs  
Up to 128,000 routes  
Up to 20,000 security/access control filters  
Up to 128,000 Layer-4 Application Flows  
Up to 180,000 Layer-2 MAC Addresses  
8.0 Gbps non-blocking switching fabric  
8.0 Million packets per second routing throughput  
MTBF (predicted) > 200,000 hours

### Physical

Dimensions 2.8" H x 17" W x 18.5" D  
(7.1cm x 43.2cm x 47cm)  
Weight 20 lbs. (9.1kg)

### Environmental Specifications

Operating Temp: +5° to +40°C (41° to 104°F)  
Non-Operating Temp: -30° to +73°C (-22° to 164°F)  
Operating Humidity: 15% to 90% (non-condensing)  
Power Consumption: 100 to 125 VAC Max or 200 to 250 VAC Max; 50 to 60 Hz

### Agency Standards and Specifications

Safety: Meets the requirements of UL1950, CSA C22.2 No. 950, EN60950, IEC950 and 72/73/EEC  
Electromagnetic Compatibility: Compliant with the requirements of FCC Part 15, CSA C108.8, EN55022, VCCI V-3/93.01, EN50082-1 and 89/336/EEC

## Standards Supported

### IETF Standards Support

RFC No.	Title
RFC 1265	BGP Protocol Analysis
RFC 1349	Type of Service in the Internet Protocol Suite
RFC 1490	Multiprotocol Interconnect over Frame Relay
RFC 1519	CIDR
RFC 1583	OSPF v2
RFC 1631	IP Network Address Translator
RFC 1638	PPP Bridging Control Protocol (BCP)
RFC 1657	BGP-4 Definitions of Managed Objects
RFC 1661	PPP (Point-to-Point Protocol)
RFC 1723	RIP v2
RFC 1771	BGP-4
RFC 1990	PPP Multi-Link Protocol
RFC 1997	BGP Communities Attribute
RFC 2096	IP Forwarding MIB
RFC 2131	Dynamic Host Configuration Protocol
RFC 2225	Classical IP and ARP over ATM
RFC 2236	Internet Group Management Protocol, Version 2
RFC 2391	Load Sharing using IP Network Address Translation (Load Balance)

### IETF Standards MIB Support

RFC No.	Title
RFC 1493	Definitions of Managed Objects for Bridges
RFC 1643	Ethernet Like Interface MIB
RFC 1654	BGP4 MIB
RFC 1724	RIPv2 MIB
RFC 1757	Remote Network Monitoring (RMON) Management Information Base
RFC 1850	OSPF and OSPF Trap MIB
RFC 2011	Internet Protocol using SMIv2
RFC 2021	Remote Network Monitoring Version 2 (RMON 2)
RFC 2096	IP Forwarding MIB
RFC 2233	Interfaces Group using SMIv2
RFC 2271	SNMP Management Frameworks
RFC 2618	Radius Authentication Client

### Standards and Protocols

IP Routing: RIPv1/v2, OSPF, BGP-4  
Multicast Support: IGMP, DVMRP, PIM-DM, PIM-SM  
QoS: Application level, RSVP  
IEEE 802.1p  
IEEE 802.1Q  
IEEE 802.1d  
IEEE 802.3  
IEEE 802.3u  
IEEE 802.3x  
IEEE 802.3z



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### Riverstone Networks, Inc.

5200 Great America Parkway, Santa Clara, CA 95054 USA

408 / 878-6500 or [www.riverstonenet.com](http://www.riverstonenet.com)

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