



# UNIVERGE® SV8000 Series InRouter

Fulfilling the promise of UNIVERGE®360

The InRouter offers an intelligent, all in one networking and monitoring solution for NEC communications servers. It combines multiple voice and data features into an in-skin converged networking router. The InRouter includes a single T1 WAN interface or a single Ethernet WAN and an integrated 4 port managed Ethernet switch with VLAN support.

## *Feature-Rich and Secure*

The InRouter is packed with features including:

- A VoIP application layer gateway (SIP) that resolves Network Address Translation (NAT)/firewall traversal issues
- VoIP-aware VPN/Firewall
- DHCP server
- NAT/Port Address Translation (PAT)
- Management for HTTP, HTTPS, SSH, Telnet, SNMPv1 and V

## *At a Glance*

- An in-skin solution for UNIVERGE SV8100 and SV8300 Communications Servers
- Feature-rich and secure
- Superb Quality of Service
- Simplified troubleshooting

The InRouter also includes security features such as IP Security (IPsec), Stateful Packet Inspection (SPI) firewall, and an optional media-aware Application Layer Gateway (ALG).

## *An In-Skin Solution for SV8100 and SV8300 Communications Servers*

The InRouter is an in-skin solution for your converged network appliance needs. It is a data router, Ethernet switch, firewall, and VoIP Application Layer Gateway (ALG) with a single management interface. The InRouter delivers reliability and performance.

## *Superb Quality of Service*

The InRouter provides excellent Quality of Service (QoS) through:

- Packet prioritization
- Priority queuing
- Data traffic shaping for VoIP calls
- Differentiated Services (DiffServ) marking/policing

## *Simplified Troubleshooting*

The InRouter passively monitors call quality for issues such as jitter and latency while it compiles Mean Opinion Score (MOS) statistics. It can isolate LAN/WAN problems from the router and also includes additional diagnostics such as TCPdump, PING and Traceroute.

Interfaces	
T1 WAN:	1
Framing:	ESF/D4
Line coding:	B8ZS/AMI
Line Build Out:	0,7.5,15db
Connector:	RJ45
PPP:	Yes
Frame Relay:	Yes
HDLC/cHDLC:	Yes
Ethernet WAN:	1
Auto-sensing:	Yes
10/100 Mbps:	Yes
Duplex:	Full or half
Ethernet LAN:	4
10/100 Mbps:	Yes
Duplex:	Full or half
Managed VLAN:	Yes
Loop Start:	Yes
USB ports:	2
Console Connector:	DB9 Male
Security	
SPI firewall	Yes
VoIP protocol aware firewall	Yes
Dynamic network address translation	Yes
Static network address translation	Yes
Port address translation	Yes
Denial of Service protection:	
• SYN flood	Yes
• UDP flood	Yes
• ICMP flood	Yes
• Fragment flood	Yes
IPSec	Yes
IKE key management	Yes
3DES	Yes
AES	Yes
SHA-1	Yes
MD-5	Yes
IPSec Hardware acceleration	Yes
Number of tunnels	Up to 15
IPSec	Yes

Passive Call Quality Monitoring	
Per call statistics	Yes
LAN side measurements	Yes
WAN side measurements	Yes
Mean Opinion Score (MOS)	Yes
Bad MOS score alarms	Yes
Below threshold MOS counters	Yes
MOS Degradation due to network impairments	Yes
Jitter	Yes
Packet loss	Yes
Consecutive lost packets	Yes
Total # of RTP packets received	Yes
Sum of received & expected packets	Yes
Out of sequence packets	Yes
Average packet loss burst length	Yes
Estimated jitter buffer delay	Yes
Estimated jitter buffer packet discard rate	Yes
Probability of degradation due to:	
• LAN congestion	Yes
• Router congestion	Yes
Traffic Management/QoS/Routing	
Class-based queuing	Yes
Prioritization on IP	Yes
Prioritization on VoIP Protocol	Yes
Traffic shaping	Yes
Guaranteed bandwidth	Yes
Upstream bandwidth management	Yes
Downstream bandwidth management	Yes
VoIP call admission control	Yes
Diffserv marking	Yes
Diffserv policing	Yes
IP routing	Yes
Secondary address/sub-interface support	Yes
VLAN - 802.1Q	Up to 16
System Services	
DHCP server	Yes
Local TFTP/FTP server	Yes
Automatic TFTP/FTP download on restart	Yes
Certification	
UL, CE, FCC Part 68 & 15, Industry Canada	Yes

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