

JUNIPER NETWORKS AND REDSKY TECHNOLOGIES: ENHANCED 9-1-1 SERVICES

Maintain E9-1-1 Compliance with EX Series Ethernet Switches and E911 Manager

Challenge

An enterprise's mission-critical functions include E9-1-1 services, which provide the ability to pinpoint the exact location of a 9-1-1 caller. Without E9-1-1, only the billing address of the organization would be known, creating a safety issue for most organizations.

Solution

E911 Manager, combined with EX Series Ethernet Switches, tracks the location of all IP, digital, and analog phones, updates the IP PBX with accurate emergency numbers, and manages location records, saving two to three critical minutes in responding to emergency calls.

Benefits

With this integrated solution, Juniper and RedSky solve the E9-1-1 requirements of enterprises, governmental agencies, and educational institutions in an open environment, ensuring that PSAP and emergency responders have the correct, precise location of each emergency caller, and the ability to scale to meet future needs.

Juniper Networks, the industry leader in delivering high-performance networking solutions, and RedSky Technologies, provider of best-in-class Enhanced 9-1-1 (E9-1-1) solutions, provide a joint solution that allows organizations to deploy Juniper Networks® EX Series Ethernet Switches while maintaining E9-1-1 compliance across their networks.

The Challenge

Today's enterprises are capitalizing on best-in-class solutions from multiple vendors to drive better performance across their data and voice networks. Each of these components must work together in order for the entire solution to deliver the results the enterprise seeks. Solutions must support other vital functions of both data and voice networks and must be scalable to match the evolving needs of the organization. Additionally, solutions must be open to take advantage of best-in-class solutions from multiple vendors.

An enterprise's mission critical functions include E9-1-1 services, which provide the ability to pinpoint the exact location of a 9-1-1 caller. In a corporate or campus environment, this would be the floor, room, or quadrant where the caller is located. Corporations, schools, and government entities using multiline telephone systems to support multi-floor and campus environments require detailed location information to determine the caller's exact location. Without E9-1-1, only the billing address of the organization would be known. This would create a safety issue for most organizations. Fifteen states currently have E9-1-1 regulations, and all enterprises face liability issues if they don't have a risk mitigation strategy that includes E9-1-1.

RedSky's E911 Manager™ is an automated software solution for E9-1-1 that is compatible with most major IP PBXs and is certified with Juniper Networks EX Series Ethernet Switches. When integrated with an IP PBX and EX Series switches, E911 Manager fully automates the E9-1-1 process, allowing IP phones to move anywhere in the network and have their locations tracked and updated. The result is a reliable and scalable E9-1-1 solution that provides a complete audit trail, along with reports and notifications to ensure that phone location data is being properly maintained.



The Juniper Networks/RedSky Enhanced 9-1-1 Solution RedSky E911 Manager

E911 Manager tracks the location of all IP, digital, and analog phones, updates the IP PBX with accurate emergency numbers, and manages location records in regional Automatic Location Identification (ALI) databases. Tight integration with the IP PBX, using APIs, ensures that phone registration information is received within seconds. Phone locations are monitored, and the caller's location is presented to emergency responders at the Public Safety Answering Point (PSAP) when a 9-1-1 call is initiated. E911 Manager also provides a real-time alert whenever a 9-1-1 call is in progress.

E911 Manager is notified by the IP PBX each time an IP phone is added to or moved on the network. Network discovery techniques are used to find the new physical location of the phone and the information is provided to the IP PBX.

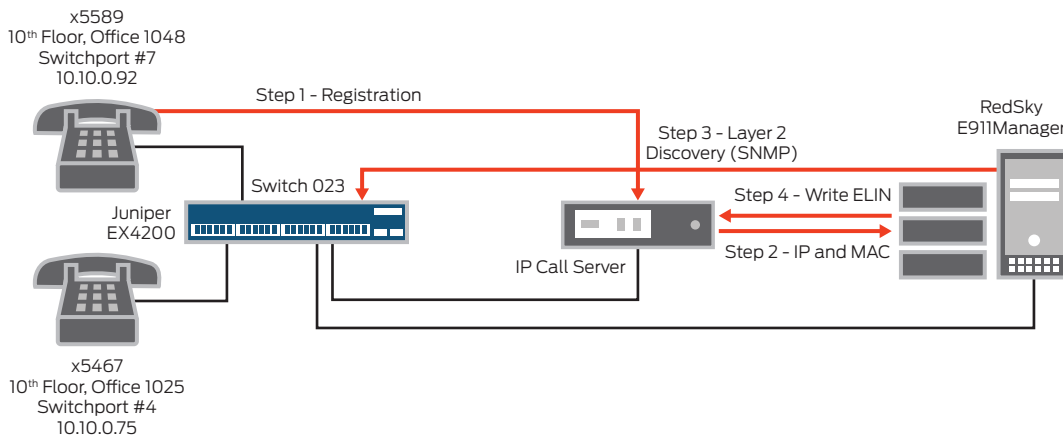
Location information for digital and analog phones is also maintained by E911 Manager through an administrative interface. ALI records are created in the proper NENA II format based on the regional ALI database requirements, and automatically uploaded to the Local Exchange Carrier (LEC) ALI database using fully automated interfaces. Because E911 Manager is not in the 9-1-1 call path, there is no single point of failure.

Emergency On-Site Notification (EON), an optional feature of E911 Manager, can alert anyone in the enterprise that a 9-1-1 call is in progress and provide the exact location of the caller. E911 Manager constantly monitors the PBX and notifies subscribers through their chosen notification method whenever a 9-1-1 call is in progress. Notifications can be sent out as "screen pops" to security desktop computers, or as short message service (SMS) or email messages. This information can save two to three critical minutes in responding to an emergency call.

Solution Components

E911Manager Matrix

IP Address	MAC Address	ERL	Address	Switch	Switchport	Extension	ELIN
10.10.0.75	00-04-8B-85-80-EE	FL10RM1025	925 W Chicago	023	4	X5467	3125551169
10.10.0.92	00-04-8B-85-78-8D	FL10RM1048	925 W Chicago	023	7	x5589	3125551245



Juniper and RedSky Enhanced 9-1-1 Joint Solution

Juniper Networks EX Series Ethernet Switches

EX Series Ethernet Switches support a rich SNMP implementation, including support for RFC-1493 BRIDGE-MIB, RFC- 2011 SNMPv2-MIB, along with the proprietary JUNIPER-VLAN-MIB. By querying information contained in these MIBs, RedSky's E911 Manager can track IP phones as they move around the enterprise. By tying voice endpoint locations to physical EX Series switch ports, E911 Manager is able to discern the precise location of each VoIP phone. These Emergency Response Locations (ERLs) are maintained in a database that resides on the RedSky E911 Manager server, along with the corresponding Emergency Location Identification Numbers (ELINs). The tight coordination of information between RedSky E911 Manager, EX Series Ethernet Switches, and the IP PBX ensures that the appropriate ELIN is sent to the PSAP in the event of a 9-1-1 call.

Features and Benefits

Working together, Juniper Networks and RedSky solve the E9-1-1 needs of enterprises, governmental agencies, and educational institutions in an open environment. The EX Series Ethernet Switches from Juniper allow for easy integration with RedSky's E911 Manager. Utilizing a read-only SNMP community string (via SNMPv1 or SNMPv2) associated with each switch, E911 Manager is able to perform detailed queries, quickly determining the locations for newly registered IP phones. This information is passed through E911 Manager to the ALI database provider. In the case of a 9-1-1 call, the PSAP and emergency responders have the correct, precise location of the caller.

Juniper and RedSky: Complete E9-1-1 Services

The Juniper/RedSky solution is currently deployed at several large enterprises, including a university in the Northeast and a gaming organization in Nevada. These organizations have deployed the joint Juniper/RedSky solution to take advantage of Juniper's high-performance network and RedSky's ability to scale as their organizations grow, as well as the flexibility that E911 Manager offers them as an open solution that works with the products of many vendors.

Next Steps

For more information about RedSky Technologies, please call 1-877-REDSKY1 or contact info@redskytech.com.

For more information about Juniper Networks, please call 888-JUNIPER.

About RedSky Technologies

RedSky has been delivering E9-1-1 software solutions since 1999 and is the leading provider in the field. With more than 250 customers, 45 in the Fortune 500, RedSky has more customers, more technology, and more experience than all other providers. For more information, visit RedSky Technologies at www.redskytech.com/.

About Juniper Networks

Juniper Networks, Inc. is the leader in high-performance networking. Juniper offers a high-performance network infrastructure that creates a responsive and trusted environment for accelerating the deployment of services and applications over a single network. This fuels high-performance businesses. Additional information can be found at www.juniper.net.

Corporate and Sales Headquarters

Juniper Networks, Inc.
1194 North Mathilda Avenue
Sunnyvale, CA 94089 USA
Phone: 888.JUNIPER (888.586.4737)
or 408.745.2000
Fax: 408.745.2100
www.juniper.net

APAC Headquarters

Juniper Networks (Hong Kong)
26/F, Cityplaza One
1111 King's Road
Taikoo Shing, Hong Kong
Phone: 852.2332.3636
Fax: 852.2574.7803

EMEA Headquarters

Juniper Networks Ireland
Airside Business Park
Swords, County Dublin, Ireland
Phone: 35.31.8903.600
EMEA Sales: 00800.4586.4737
Fax: 35.31.8903.601

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