



EdgeMarc 6000

Intelligent Edge™ – Enterprise Session Border Controllers



Deploying voice communications over the Internet has the potential to create quality and security issues if providers don't take proactive measures to prevent issues. Ribbon's Intelligent Edge™ solutions are deployed at the edge of a customer's network to give communication service providers a better way to monitor, manage and secure voice traffic as it enters and exits a customer's site.

EdgeMarc elements can operate independently or be centrally managed with the EdgeView Service Control Center. By centrally managing hundreds or thousands of EdgeMarc elements, EdgeView gives providers a local view of issues as well as a holistic view of their network. EdgeView also enables

- Zero touch provisioning for consistent, low touch, low cost deployments.
- Centralized reporting and management tools to reduce expensive truck rolls and many of the customer satisfaction issues that drive churn.

The Ribbon EdgeMarc 6000 is the newest addition to Ribbon's Intelligent Edge family. It is specifically designed for modern cloud-based services, including Microsoft Teams. In addition to robust security, it includes options for:

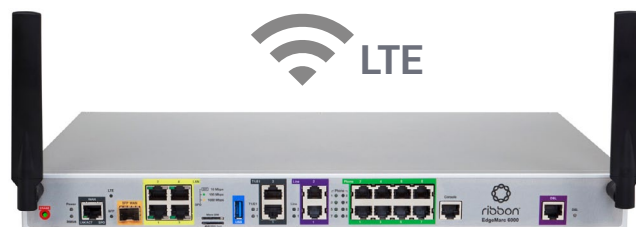
- T1/E1 gateway ports to retain or migrate legacy PBXs or contact centers,
- FXS ports for analog devices (fax, door phones, paging system, etc.)
- FXO ports for analog lines (local PSTN access, emergency calling, paging systems, etc.)

Staying Connected – Service Assurance

The EdgeMarc 6000 can be deployed with a built-in 4G LTE radio to offer multiple paths for WAN connectivity. As organizations become more dependent on cloud services, connectivity becomes more critical. Providers can differentiate their offer from the competition and raise ARPU by bundling wireless services.

Staying Ahead

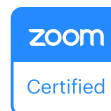
The EdgeMarc 6000 is also designed for what comes next. Its next generation Intelligent Edge architectural will shortly support additional containerized applications so Ribbon or service providers can leverage the solution (centrally managed and strategically located at the edge of a customer's network) to run additional services.



Multiple configuration choices - including LTE-WAN connectivity - simplify migration to the cloud

Key Connectivity Choices

- Up to 500 concurrent calls
- 1 or 2 PRI ISDN links over T1/E1
- 0 or 2 FXO ports
- 8 or 6 FXS ports
- 4 Gb LAN ports
- 2 Gb Ethernet ports for WAN
- 2 Optical ports for WAN
- 4G/LTE Radio for WAN



Certified for Zoom Phone



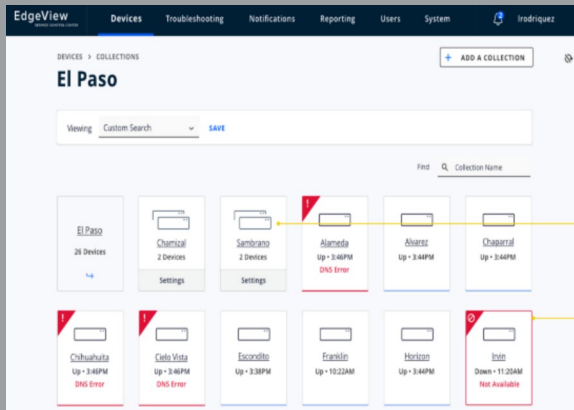
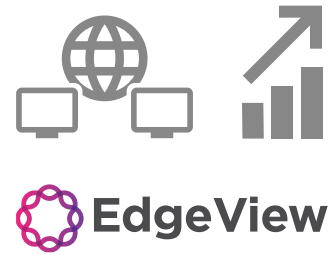
Microsoft Certified for Teams Direct Routing

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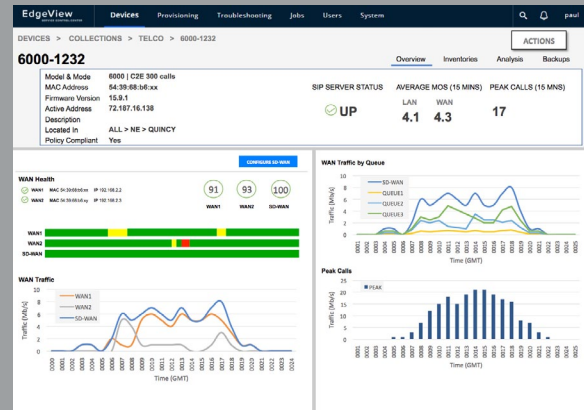
Centrally Managed - A Strategic Investment that Pays for Itself

As with all EdgeMarc Intelligent Edges™, the EdgeMarc 6000 is centrally managed with the EdgeView Service Control Center. EdgeView provides zero touch provisioning along with a comprehensive view of the customer and provider's VoIP network, enabling providers to monitor performance and quickly remediate issues, leading to improved customer experience and reduced costs.

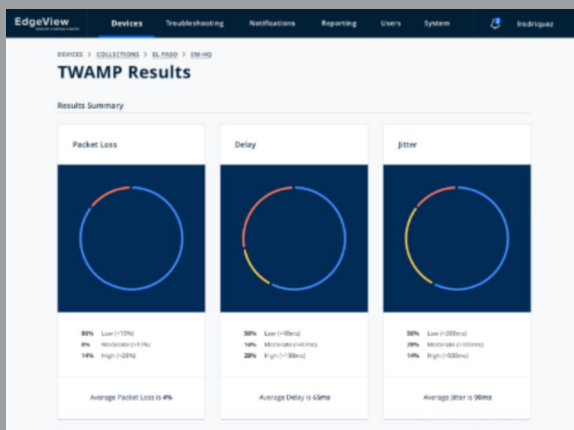
It's no wonder many of the world's leading service providers use EdgeView and deploy an EdgeMarc element as part of EVERY one of their UCaaS and SIP Trunk deployments. The solution pays for itself.



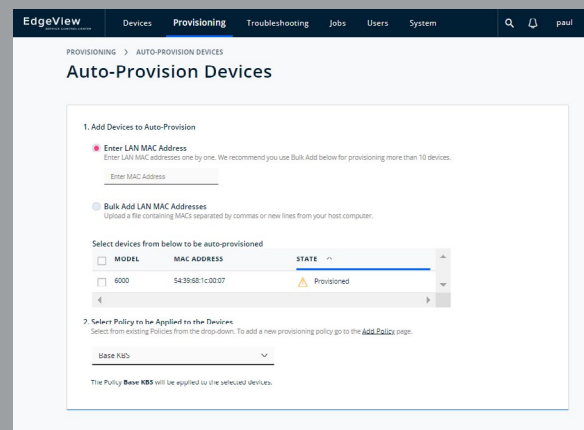
Manage hundreds of thousands of sites and devices



Easily spot issues



Measure voice quality to the desktop



Zero Touch Provisioning



PSTN Gateway



WAN Router



NAT/DHCP



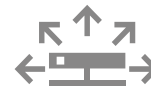
SIP Firewall



LTE



ALG/B2BUA



Voice Quality Monitor



Traffic Shaper

EdgeView and the EdgeMarc 6000 provide a comprehensive solution to secure and centrally manage communications all the way to the enterprise edge

Features and Capabilities		Specifications
Performance		
Maximum data throughput		1Gbps
Maximum sessions, voice only		500
Maximum number of registered devices (endpoints)		2000
Cloud2Edge Complete Compatible		Yes. See http://ribboncommunications.com/solutions/service-provider-solutions/edge-services/cloud2edge-complete for more details
Analog Port Features (2900a only)		
FXO Port (0 or 2)		Loop start, Far end disconnect supervision, Battery reversal, RTP silence detection
FXS Port (8 or 6)		• Loop Start • Ringer Equivalency Number (REN) – Max of 5 REN on an individual port • Ringing voltage $\geq$ 48Vrms 20Hz, selectable impedance • 48v on hook voltage, 24mA off-hook current
T1/E1 Ports (2)		• Up to two PRI over T1/E1 • Support for Japanese ISDN mode • Up to 70 TDM/FXx to SIP calls
LTE WAN Features		
Wireless Data Connectivity		• 4G Universal SIM support is the Quectel EG25-G MINIPICIE • Backward-compatible with existing EDGE and GSM/GPRS networks • FDD/TDD LTE, WCDMA and GSM support • LTE services: Downlink: 150Mbps, Uplink: 50Mbps • HSPA+ services: Downlink: 42Mbps, Uplink: 5.76Mbps • 5G version is on roadmap • Embedded GPS/GLONASS/BeiDou/Galileo/QZSS function • Embedded with QuecLocator for cell location services
SIP Features		
Network Address Translation		• Network Address Translation (NAT): static, dynamic • Port Address Translation (PAT) • (provides topology hiding of hosts on the LAN)
Back-to-Back User Agent		Yes
Application Layer Gateway (SIP proxy)		Yes
Proxy Modes		• Transparent proxy mode • Multi-homed proxy mode
SIP Registration Pacing		Registration rates (LAN-side/WAN side) can be controlled
VoIP Test Call Agent		Remotely verify and troubleshoot connectivity
Header Manipulation		Full control to add/delete/modify SIP headers
Signaling Protocol (LAN/WAN)		UDP, TCP, TLS
Media Protocol (LAN/WAN)		RTP, SRTP
SIP Standards Compliance (primary standards)		• RFC 3261 • RFC 2327 • RFC 3263 • RFC 2833
Codecs		G.711, G.722, G.726 G.729
Fax		T.38 support for FXS interfaces
Security		
Firewall		Stateful, VoIP aware firewall
Denial of Service protection		SYN flood, UDP flood, ICMP flood, Fragment flood
Encryption and Authentication		TLS, SRTP, HTTPS, SSH, Radius
Encryption protocols supported		3DES, AES, SHA-256, MD-5
Key Management		IKE key management, IPsec
Proxy ARP		Yes
IPsec VPN		Yes (max 12 tunnels)
PPTP support		MSCHAP, MSCHAP V2, MSCHAP+MPPE
Voice Quality Measurement		
Per call statistics (LAN/WAN)		Full MOS support (including Jitter, Packet Loss)

Features and Capabilities	Specifications
Traffic Management/Routing/QoS	
Routing	- BGP - fully functional BGP stack supporting Layer 2/3 IP WAN solutions (MPLS) - RIP - OSPF - PPPoE - Secondary address / Subinterface
Multicast	Protocol Independent Multicast – sparse mode (PIM-SM)
Traffic prioritization	- Class-based queueing (up to 8) - Prioritization on IP and port - Prioritization on VoIP protocol - Traffic Shaping - Call Admission Control - Upstream, downstream bandwidth management
DHCP server	Yes
QoS	Diffserv (DSCP), IP Precedence, policing
VLANs	802.1Q (up to 16) - Multi-VLAN ALG support
Network addressing	IPv4, IPv6
System Management	
Device Management	CLI, (SSH, Telnet) Web GUI (HTTP, HTTPS)
Remote upgrades, back-up, restore	TFTP, FTP, SCP, HTTP, HTTPS
Firmware	Dual local firmware image for upgrade and recovery
Network Management	SNMP v1, v3
Message Analytics	System monitoring and SIP statistics
Debug tools	Packet capture (tcpdump), traceroute, ping, syslog
Endpoint monitoring	Two-way Active Monitoring Protocol (TWAMP)
Edge Orchestration	EdgeView Service Control Center for device and endpoint management
EdgeView key functions	- Remote troubleshooting - Proactive management - Inventory management - Configuration management - Reporting and data analytics (for more information, please see: http://ribboncommunications.com/products/service-provider-products/management/edgeview-service-control-center-scc)
Hardware Specifications	
Dimensions (L x W x H)	201.5 x 332 x 44.5 mm (1U rack)
Weight	6 lbs.
Mounting Options	Shelf, Rack Mountable
MTBF	76,657 hours
Operating Temperature	0-40 deg. Celsius
Operating Relative Humidity	4% to 90% (non-condensing)
Compliance	RoHS 2.0, UL/cUL, CB, FCC part 15, FCC part 68, IC, CE, RCM and VCCI
Power	110-240 VAC, 50-60 Hz, 0.6A Power Supply
Hardware Warranty	5 years
Software support and maintenance	First year included

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