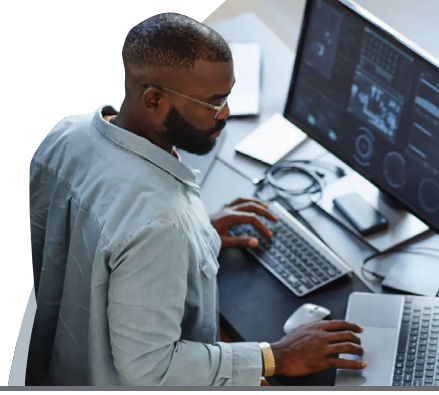
Ribbon Federal Edge

JITC & FIPS-Certified SBC with Gateway Services



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Agencies and departments across the federal government are under pressure to replace legacy connections to the public telephone network. Telecom providers are raising prices on traditional T1/PRI and analog lines, incentivizing organizations to adopt IP-based and cloud-based communications, including Microsoft® Teams for Government.

At the same time, the GAO and the DoD are encouraging civilian and defense-related organizations to modernize communications infrastructure and, in the case of the DOD, move more communications onto the secure DISA backbone. These modernization efforts will help reduce costs and improve security, but agencies and departments face several significant obstacles as they move to IP and cloud-based services, including:

- Existing communications equipment often doesn't support modern IP-based connections; gateways are required.
- DISA requires an approved, JITC-compliant, session border controller (SBC) to secure the connection between an agency's or department's phone system and the DISA communications network.
- Buildings and campuses are littered with legacy analog phones and devices (door/gate phones, elevator phones, maintenance devices, modems, etc.) that cannot be easily or cost-effectively replaced. These devices must be incorporated into any new solution.
- Organizations may be highly motivated to move to the latest cloud communications solutions, but migrating an entire agency to the cloud can be a complicated, disruptive proposition that can take months or even years. Communications must remain seamless during the migration (i.e., during the in-between state) to maintain user satisfaction and productivity.

The Ribbon Federal Edge is an effective and efficient way to overcome these challenges and accelerate migrations to IP and cloud-based telecom services. The comprehensive Ribbon solution supports a wide array of features and functions in a compact footprint, including:

- JITC-certified SBC functionality enabling secure access to the DISA communication network
- Multiple gateway options (T1/PRI & analog) to connect existing PBXs, contact centers, and analog devices
- Media encryption (SRTP) and SIP signaling (TLS) encryption
- Multivendor interoperability via SIP signaling and media interworking

Key Capabilities

- Secure signaling, media, and management
- Denial-of-service (DoS) and distributed DoS (DDoS) prevention
- PSTN fallback for WAN or cloud provider outages
- V.150 support for vIPer and legacy STE
- VTP for voice over satellite communications
- 911 call preemption

Platform Choices	
Capabilities	**Ribbon Federal Edge**
Maximum Concurrent Calls	480
T1/E1 CAS/PRI Ports	Up to 16
FXS ports	Up to 48
Note: Not all physical interface port capacities are available simultaneously	

Field-Proven Interoperability and Microsoft Certified

Ribbon Federal Edge is designed to eliminate the interoperability issues that are common between different generations and brands of communications products. The solution provides standard SIP integration to most communications servers. Ribbon has tested its solutions with scores of different products and has the benefit of almost two decades of experience in real-world deployments.

Ribbon has worked closely with Microsoft for more than a decade, so it should come as no surprise that Ribbon SBC solutions are Microsoft-certified for Direct Routing.

Typical Deployment Example

Part of Ribbon's Industry-Leading Real-Time Communications Security Solution Portfolio

Ribbon Federal Edge represents just one element of Ribbon's wide-ranging real-time communications security solution portfolio for the Department of Defense. Ribbon also offers a software-only SBC called Software Edition Core (SBC SWe Core) that provides the same functionality as Ribbon Federal Edge; an Application Server that is JITC-certified as an ESC; and a suite of analytics tools that help security operations teams proactively identify issues.

Ribbon Federal Edge leverages the same field-proven, time-tested SBC technology that is deployed by 1,000 of the world's leading communications service providers. In fact, there is a good chance that your organization's communications service provider is a Ribbon customer.

Ribbon Federal Edge secures communications, streamlines interoperability with existing equipment or services, and accelerates cloud migration initiatives

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Features and Capabilities	Specifications
Security	• TLS (Transaction Layer Security) for signaling encryption - TLS 1.2 (RFC 5246) • FIPS 140-2 Support • Secure Real-time Transport Protocol (SRTP) & Control Protocol (SRTCP) for media and media control encryption (RFC 3711) • Multiple unique X.509 public key certificates/PKCS #12 files (up to 11) • Wildcard certificate support • Topology hiding; user privacy • Prevention of Denial-of-Service (DoS) and Distributed DoS (DDoS) attacks • Traffic separation (VLAN interface separation) • Malformed packet protection • Access Control Lists (ACLs) • NAT/NAPT and port forwarding; NAT traversal
Protocol Support	• SIP (RFC 3261) over UDP, TCP, TLS • RTP/RTCP/RTCP-XR (RFC 3550, 3551, 3611) • RTP/RTCP multiplexing over single UDP port (RFC 5761) • IPv4, IPv6, and IPv4/IPv6 interworking • Network Address Translation – NAT (RFC 2663) • SNMPv3 • HTTPS • RIPv2, OSPF as dynamic IP routing protocols • TDM Signaling (ISDN): AT&T 4ESS/5ESS, Nortel DMS-100, Euro ISDN (ETSI 300-102), QSIG, NTT InsNet (Japan), ANSI • National ISDN-2 (NI-2) • TDM Signaling (CAS): T1 CAS (E&M, Loop start); E1 CAS (R2)
Media Services	• Support & transcoding of G.711, G.729A/B (8 kbps), T.38, V.150 • VTP support for voice over satellite communications • DTMF/RFC4733; Inband DTMF; SIP INFO/RFC-2833 • Voice Activity Detection (VAD) • G.168 Echo cancellation with standard 128 ms tail length • Comfort noise generation and packet loss concealment • RTP inactivity monitoring (dead call detection)
Quality of Service (QoS)	• Bandwidth management • Call Admission Control (CAC) (deny excessive calls based on static configuration for bandwidth management) • P-time mediation for rate limiting • Per-call statistics • Diffserv/DSCP marking
Routing/Policy	• Interactive Connectivity Establishment (ICE), full and lite support (RFC 8445) • Azure® and on-premises Active Directory®/LDAP-based call routing • Least cost, time of day and quality-based routing • On-board call forking (up to eight end points) • Supplementary services: call hold, call transfer (blind & assisted) and call forward • SIP routing based on source and destination IP address or Fully Qualified Domain Name (FQDN) • One number fax support (single DID for voice and fax) • ITSP E911 support; 911 call preemption
Management Capabilities	• Single, secure, web-based GUI with real-time port monitoring • REST-based programmatic interface to remotely manage multiple SBCs • SNMP v3 for comprehensive network management using third-party management systems • Configuration backup and restore; upload from one site to another • CDR reporting and local logging for troubleshooting • Free Ribbon LX syslog server and log parser tool available • Authentication: local user (user name/password), RADIUS

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Features and Capabilities	Specifications
Site Survivability	• IP route redundancy to UC provider, in case of ISP or router failure • PSTN fallback in case of WAN failure - Detect proxy failure and route to alternate paths - Re-route on failure based on full Cause Code re-routing on T1/E1 trunks • Rapid Ethernet Port failover, to maintain in-progress calls in the event of an Ethernet port or switch problem • Multiple Spanning Tree Protocol, to prevent routing loops
SBC Server Module	• Intel® Pentium® Processor: D-1508 CPU, dual core, 4 threads, 2.20 GHz • 8 GB of DDR4 with ECC (Error-Correcting Code) CPU • 256 GB SSD for storage
SBC System Capabilities	Sessions - Maximum TDM to SIP calls: 480 Call Set-Up - Maximum call set-up rate: 4 cps Registrations - Maximum registered users: 1,000 Encryption - Maximum TLS sessions: 600 - Maximum SRTP sessions: 600 WAN and LAN Interfaces - 4 x 10/100/1000 BASE-T Ethernet ports with VLAN support - Administration Port: 1 x 10/100/1000 BASE-T Ethernet port PSTN Interfaces - Up to 16 T1/E1 – 2 x from one to eight T1/E1 spans per digital module - Up to 48 FXS ports – 2 x 24 ports Chassis - 1U, rack mount (17.5 in wide x 1.75 high x 21 deep / 44.4 cm wide x 4.4 high x 53.4 deep) - Input Voltage: 100-240 VAC nominal, auto-switching, 47-63 Hz - Maximum Input Current: 3.0A at 115 VAC; 1.6A at 230 VAC - Weight Maximum: 23 lbs. (10.43 kg) - Operating Environment: 5 to 40˚ C with 5 to 85% non-condensing operating humidity - Optional redundant power supply

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